

Department of Energy FY 2011 Congressional Budget Request



Environmental Management

Department of Energy

FY 2011 Congressional Budget Request



Environmental Management



Volume 5

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The Department of Energy’s Congressional Budget justification is available on the Office of Chief Financial Officer, Office of Budget homepage at <http://www.cfo.doe.gov/crorg/cf30.htm>.

For the latest details on the Department of Energy’s implementation of the Recovery Act, please visit: <http://www.energy.gov/recovery>

Department of Energy
Appropriation Account Summary
(dollars in thousands - OMB Scoring)

	FY 2009	FY 2009	FY 2010	FY 2011	FY 2011 vs. FY 2010	
	Current Approp.	Current Recovery	Current Approp.	Congressional Request	\$	%
Discretionary Summary By Appropriation						
Energy And Water Development, And Related Agencies Appropriation Summary:						
Energy Programs						
Energy Efficiency and Renewable Energy	2,156,865	16,771,907	2,242,500	2,355,473	+112,973	+5.0%
Electricity Delivery and Energy Reliability	134,629	4,495,712	171,982	185,930	+13,948	+8.1%
Nuclear energy	791,444	0	786,637	824,052	+37,415	+4.8%
Fossil Energy Programs						
Clean Coal Technology	0	0	0	0	—	—
Fossil Energy Research and Development	863,104	3,398,607	672,383	586,583	-85,800	-12.8%
Naval Petroleum and Oil Shale Reserves	19,099	0	23,627	23,614	-13	-0.1%
Strategic Petroleum Reserve	226,586	0	243,823	138,861	-104,962	-43.0%
Strategic Petroleum Account	-21,586	0	0	0	—	—
Northeast Home Heating Oil Reserve	9,800	0	11,300	11,300	—	—
Total, Fossil Energy Programs	1,097,003	3,398,607	951,133	760,358	-190,775	-20.1%
Uranium Enrichment D&D Fund ¹	535,503	390,000	573,850	730,498	+156,648	+27.3%
Energy Information Administration	110,595	0	110,595	128,833	+18,238	+16.5%
Non-Defense Environmental Cleanup	261,819	483,000	254,673	225,163	-29,510	-11.6%
Science	4,813,470	1,632,918	4,903,710	5,121,437	+217,727	+4.4%
Energy Transformation Acceleration Fund	8,700	388,856	0	299,966	+299,966	N/A
Nuclear Waste Disposal	145,390	0	98,400	0	-98,400	-100.0%
Departmental Administration	155,326	42,000	168,944	169,132	+188	+0.1%
Inspector General	51,927	15,000	51,927	42,850	-9,077	-17.5%
Advanced Technology Vehicles Manufacturing Loan Program	7,510,000	10,000	20,000	9,998	-10,002	-50.0%
Innovative Technology Loan Guarantee Program	0	0	0	500,000	+500,000	N/A
Section 1705 Temporary Loan Guarantee Program	0	3,960,000	0	0	—	—
Total, Energy Programs	17,772,671	31,588,000	10,334,351	11,353,690	+1,019,339	+9.9%
Atomic Energy Defense Activities						
National Nuclear Security Administration:						
Weapons Activities	6,410,000	0	6,384,431	7,008,835	+624,404	+9.8%
Defense Nuclear Nonproliferation	1,545,071	0	2,136,709	2,687,167	+550,458	+25.8%
Naval Reactors	828,054	0	945,133	1,070,486	+125,353	+13.3%
Office of the Administrator	439,190	0	410,754	448,267	+37,513	+9.1%
Total, National Nuclear Security Administration	9,222,315	0	9,877,027	11,214,755	+1,337,728	+13.5%
Environmental and Other Defense Activities:						
Defense Environmental Cleanup ¹	5,656,345	5,127,000	5,642,331	5,588,039	-54,292	-1.0%
Other Defense Activities						
Health, Safety and Security	446,471	0	441,882	464,211	+22,329	+5.1%
Legacy Management	185,981	0	189,802	188,626	-1,176	-0.6%
Nuclear Energy	565,819	0	83,358	88,200	+4,842	+5.8%
Defense Related Administrative Support	108,190	0	122,982	130,728	+7,746	+6.3%
Office of Hearings and Appeals	6,603	0	6,444	6,444	—	—
Congressionally Directed Projects	999	0	3,000	0	-3,000	-100.0%
Total, Other Defense Activities	1,314,063	0	847,468	878,209	+30,741	+3.6%
Defense Nuclear Waste Disposal	143,000	0	98,400	0	-98,400	-100.0%
Total, Environmental & Other Defense Activities	7,113,408	5,127,000	6,588,199	6,466,248	-121,951	-1.9%
Total, Atomic Energy Defense Activities	16,335,723	5,127,000	16,465,226	17,681,003	+1,215,777	+7.4%
Power Marketing Administrations:						
Southeastern Power Administration	7,420	0	7,638	0	-7,638	-100.0%
Southwestern Power Administration	28,414	0	44,944	12,699	-32,245	-71.7%
Western area Power Administration	218,346	10,000	256,711	105,558	-151,153	-58.9%
Falcon & Amistad Operating & Maintenance Fund	2,959	0	2,568	220	-2,348	-91.4%
Colorado River Basins	-23,000	0	-23,000	-23,000	—	—
Total, Power Marketing Administrations	234,139	10,000	288,861	95,477	-193,384	-66.9%
Federal Energy Regulatory Commission	0	0	0	0	—	—
Subtotal, Energy And Water Development and Related Agencies	34,342,533	36,725,000	27,088,438	29,130,170	+2,041,732	+7.5%
Uranium Enrichment D&D Fund Discretionary Payments	-463,000	0	-463,000	-696,700	-233,700	-50.5%
Excess Fees and Recoveries, FERC	-23,080	0	-28,886	-29,111	-225	-0.8%
Total, Discretionary Funding	33,856,453	36,725,000	26,596,552	28,404,359	+1,807,807	+6.8%

¹ The Defense Environmental Cleanup/Uranium Enrichment Decontamination and Decommissioning Fund accounts reflect correctly the Administration's policy for the Department's FY 2011 request. These accounts include \$47 million that was inadvertently omitted from the official Budget request. A budget amendment is expected to be forthcoming to formally correct for this error.

Environmental Management

Proposed Appropriation Language

Defense Environmental Cleanup (Including Transfer of Funds)

For Department of Energy expenses, including the purchase, construction, and acquisition of plant and capital equipment and other expenses necessary for atomic energy defense environmental cleanup 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, and the purchase of not to exceed [four] *two* ambulances and [three passenger motor vehicles] *one fire truck* for replacement only, [\$5,642,331,000] \$5,588,039,000, to remain available until expended, of which [\$463,000,000] \$496,700,000 shall be transferred to the "Uranium Enrichment Decontamination and Decommissioning Fund": *Provided*, That, of the amount appropriated in this paragraph, \$4,000,000 shall be used for projects specified in the table that appears under the heading "Congressionally Directed Defense Environmental Cleanup Projects" in the joint explanatory statement accompanying the conference report on this Act]. (*Energy and Water Development and Related Agencies Appropriations Act, 2010.*)

Non-Defense Environmental Cleanup

For Department of Energy expenses, including the purchase, construction, and acquisition of plant and capital equipment and other expenses necessary for non-defense environmental cleanup 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, [\$244,673,000] \$225,163,000, to remain available until expended. (*Energy and Water Development and Related Agencies Appropriations Act, 2010.*)

Uranium Enrichment Decontamination and Decommissioning Fund

For necessary expenses in carrying out uranium enrichment facility decontamination and decommissioning, remedial actions, and other activities of title II of the Atomic Energy Act of 1954, and title X, subtitle A, of the Energy Policy Act of 1992, [\$573,850,000] \$730,498,000, to be derived from the Uranium Enrichment Decontamination and Decommissioning Fund, to remain available until expended. (*Energy and Water Development and Related Agencies Appropriations Act, 2010.*)

Explanation of Change

Changes are proposed to reflect the FY 2011 funding and vehicle request.

The Defense Environmental Cleanup/Uranium Enrichment Decontamination and Decommissioning accounts reflect correctly the Administration's policy for the Department's FY 2011 request. These accounts include \$47 million that was inadvertently omitted from the official Budget request. A budget amendment is expected to be forthcoming to formally correct for this error.

**Environmental Management
Overview
Appropriation Summary**

	FY 2009 Current Appropriation	FY 2009 Current Recovery Act Appropriation	FY 2010 Current Appropriation	FY 2011 Request ^a
Defense Environmental Cleanup	5,660,542	5,127,000	5,642,331	5,588,039
Non-Defense Environmental Cleanup	272,744	483,000	254,673	225,163
Uranium Enrichment Decontamination and Decommissioning Fund	535,503	390,000	573,850	730,498
Subtotal, Environmental Management	6,468,789	6,000,000	6,470,854	6,543,700
Use of Prior Year (Defense Environmental Cleanup)	-4,197	0	0	0
Use of Prior year (Non-Defense Environmental Cleanup)	-925	0	0	0
Transfer from Office of Science	-10,000	0	0	0
D&D Fund Offset	-463,000	0	-463,000	-496,700
Total, Environmental Management	5,990,667	6,000,000	6,007,854	6,047,000

^a The Defense Environmental Cleanup/Uranium Enrichment Decontamination and Decommissioning accounts reflect correctly the Administration's policy for the Department's FY 2011 request. These accounts include \$47 million that was inadvertently omitted from the official Budget request. A budget amendment is expected to be forthcoming to formally correct for this error.

Appropriation Summary by Program

(dollars in thousands)

	FY 2009 Current Appropriation	FY 2009 Current Recovery Act Appropriation	FY 2010 Current Appropriation	FY 2011 Request
Defense Environmental Cleanup				
Closure Sites				
Closure Sites Administration	13,209	0	8,225	6,375
Fernald	2,100	0	0	0
Miamiisburg	30,574	19,700	33,243	0
Total, Closure Sites	45,883	19,700	41,468	6,375
Hanford Site				
2012 Accelerated Completions	476,491	520,080	541,367	0
2035 Accelerated Completions	490,485	1,114,420	448,713	0
Central Plateau Remediation	0	0	0	423,640
River Corridor and Other Cleanup Operations	0	0	0	545,289
Total, Hanford Site	966,976	1,634,500	990,080	968,929
Idaho National Laboratory	475,761	467,875	464,168	407,100
NNSA Sites				
California Site Support	0	0	238	238
Lawrence Livermore National Laboratory	688	0	910	635
Los Alamos National Laboratory	222,734	197,000	196,500	196,953
Nevada	75,674	44,325	65,674	66,000

(dollars in thousands)

	FY 2009 Current Appropriation	FY 2009 Current Recovery Act Appropriation	FY 2010 Current Appropriation	FY 2011 Request
NNSA Service Center/Separations Processing Research Unit (SPRU)	19,443	51,775	17,938	15,547
Pantex	1,000	0	0	0
Sandia National Laboratories	3,000	0	2,864	0
Total, NNSA Sites	322,539	293,100	284,124	279,373
Oak Ridge	262,835	558,110	178,768	202,298
Office of River Protection				
Tank Farm Activities	319,943	326,035	408,000	418,000
Waste Treatment and Immobilization Plant	690,000	0	690,000	740,178
Total, Office of River Protection	1,009,943	326,035	1,098,000	1,158,178
Savannah River Site				
2035 Accelerations	129,626	1,415,400	57,068	0
Cleanup and Waste Disposition	0	0	0	18,330
Nuclear Material Stabilization and Disposition	361,343	0	391,625	0
Site Risk Management Operations	0	0	0	1,199,469
Tank Farm Activities	731,774	200,000	761,256	0
Total, Savannah River Site	1,222,743	1,615,400	1,209,949	1,217,799
Waste Isolation Pilot Plant	231,661	172,375	230,337	220,245
Program Support	33,930	0	34,000	25,143
Program Direction	309,807	25,635	345,000	323,825
Safeguards and Security	266,141	0	279,437	249,754
Technology Development and Deployment	31,415	0	20,000	32,320
Federal Contribution to the Uranium Enrichment D&D Fund	463,000	0	463,000	496,700
Congressionally Directed Projects	17,908	0	4,000	0
ARRA Defense Unallocated	0	14,270	0	0
Total, Defense Environmental Cleanup	5,660,542	5,127,000	5,642,331	5,588,039
Non-Defense Environmental Cleanup				
Program Direction	0	2,415	0	0
Fast Flux Test Reactor Facility D&D	10,755	0	7,652	3,659
Congressionally Directed Projects	4,757	0	0	0
Gaseous Diffusion Plants				
Paducah Gaseous Diffusion Plant	45,305	0	47,491	52,490
Portsmouth Gaseous Diffusion Plant	35,991	0	53,394	46,974
Total, Gaseous Diffusion Plants	81,296	0	100,885	99,464
ARRA Non-Defense Unallocated	0	1,830	0	0
Small Sites				
Argonne National Laboratory	19,479	98,500	10,000	0
Brookhaven National Laboratory	8,433	42,355	15,000	13,861
California Site Support	187	0	262	0
Completed Sites/Program Support	1,100	0	1,200	0
Energy Technology Engineering Center	15,000	54,175	10,500	10,679
Idaho National Laboratory	13,478	0	5,000	4,900
Inhalation Toxicology Laboratory	272	0	0	0
Los Alamos National Laboratory	1,905	14,775	0	0
Moab	40,699	108,350	39,000	31,000
Oak Ridge	0	78,800	0	0
SLAC National Accelerator Laboratory	4,883	7,925	7,100	3,526
Tuba City	5,000	0	0	0
Total, Small Sites	110,436	404,880	88,062	63,966
West Valley Demonstration Project	65,500	73,875	58,074	58,074

(dollars in thousands)

	FY 2009 Current Appropriation	FY 2009 Current Recovery Act Appropriation	FY 2010 Current Appropriation	FY 2011 Request
Total, Non-Defense Environmental Cleanup	272,744	483,000	254,673	225,163
Uranium Enrichment Decontamination and Decommissioning Fund				
Program Direction	0	1,950	0	0
D&D Activities				
Oak Ridge	208,833	118,200	225,000	230,402
Paducah Gaseous Diffusion Plant	116,446	78,800	116,446	84,014
Portsmouth Gaseous Diffusion Plant	200,224	118,200	232,404	416,082
Total, D&D Activities	525,503	315,200	573,850	730,498
ARRA UE D&D Unallocated	0	3,900	0	0
U/Th Reimbursements	10,000	68,950	0	0
Total, Uranium Enrichment Decontamination and Decommissioning Fund	535,503	390,000	573,850	730,498
Total, Environmental Management	6,468,789	6,000,000	6,470,854	6,543,700
Use of Prior Year (Defense Environmental Cleanup)	-4,197	0	0	0
Use of Prior year (Non-Defense Environmental Cleanup)	-925	0	0	0
Transfer from Office of Science	-10,000	0	0	0
D&D Fund Offset	-463,000	0	-463,000	-496,700
Total, Environmental Management	5,990,667	6,000,000	6,007,854	6,047,000

Funding by Budget Chapters

(dollars in thousands)

	FY 2009	FY 2010	FY 2011
Carlsbad	231,661	230,337	220,245
Idaho	489,239	469,168	412,000
Oak Ridge			
Oak Ridge	471,668	403,768	432,700
Paducah	161,751	163,937	136,504
Portsmouth	236,215	285,798	463,056
Richland	977,731	997,732	972,588
River Protection	1,009,943	1,098,000	1,158,178
Savannah River	1,222,743	1,209,949	1,217,799
NNSA Sites			
California Site Support	0	238	238
Nevada	75,674	65,674	66,000
NNSA Service Center/Separations Processing Research Unit (SPRU)	19,443	17,938	15,547
Lawrence Livermore National Laboratory	688	910	635
Los Alamos National Laboratory	224,639	196,500	196,953
Pantex	1,000	0	0
Sandia National Laboratories	3,000	2,864	0
Subtotal, NNSA Sites	324,444	284,124	279,373

	(dollars in thousands)		
	FY 2009	FY 2010	FY 2011
Closure Sites			
Closure Sites Administration	13,209	8,225	6,375
Fernald	2,100	0	0
Miamisburg	30,574	33,243	0
Subtotal, Closure Sites	45,883	41,468	6,375
All Other Sites			
Completed Sites/Program Support	1,100	1,200	0
Brookhaven National Laboratory	8,433	15,000	13,861
California Site Support	187	262	0
Argonne National Laboratory	19,479	10,000	0
Energy Technology Engineering Center	15,000	10,500	10,679
Inhalation Toxicology Laboratory	272	0	0
Moab	40,699	39,000	31,000
Tuba City	5,000	0	0
SLAC National Accelerator Laboratory	4,883	7,100	3,526
Subtotal, All Other Sites	95,053	83,062	59,066
Safeguards and Security	266,141	279,437	249,754
Headquarters Operations	66,595	38,000	25,143
West Valley Demonstration Project	65,500	58,074	58,074
Technology Development & Deployment	31,415	20,000	32,320
Program Direction	309,807	345,000	323,825
D&D Fund Deposit	463,000	463,000	496,700
Subtotal, Environmental Management	6,468,789	6,470,854	6,543,700
Use of Prior Year (Defense Environmental Cleanup)	-4,197	0	0
Use of Prior year (Non-Defense Environmental Cleanup)	-925	0	0
Transfer from Office of Science	-10,000	0	0
D&D Fund Offset	-463,000	-463,000	-496,700
Total, Environmental Management	5,990,667	6,007,854	6,047,000

Mission

Fifty years of nuclear weapons production and energy research generated millions of gallons of liquid radioactive waste, millions of cubic meters of solid radioactive wastes, thousands of tons of spent nuclear fuel and special nuclear material, along with huge quantities of contaminated soil and water. The Environmental Management program was established in 1989 to achieve the successful cleanup of this Cold War legacy. The mission of the Office of Environmental Management (EM) is to complete the safe cleanup of the environmental legacy brought about from five decades of nuclear weapons development, production, and Government-sponsored nuclear energy research. This cleanup effort is the largest in the world, originally involving two million acres at 107 sites in 35 states and some of the most dangerous materials known to man.

In that it took five decades to create the Cold War environmental legacy, it is EM's goal to complete the cleanup in approximately six decades within the currently estimated life-cycle cost of \$275 to \$329 billion. This includes \$82 billion in actual costs from 1997 through 2009, and an additional estimate of \$193 to \$247 billion to complete EM's remaining mission.

EM's overall goal is to complete the cleanup of the legacy of the Cold War in a safe, secure, and compliant manner, on schedule and within budget. EM will continue to pursue its cleanup objectives in a manner that maximizes risk reduction and overlays its regulatory compliance commitments and best business practices to maximize cleanup progress.

In order to execute the mission, EM has ranked, in priority order, those activities with the greatest risk, while adhering to all safety orders as our utmost priority. EM is committed to its safety principles and will continue to maintain and demand the highest safety performance to protect the workers and the communities where EM operates.

Performance

The EM program directly supports the Department's goals of Innovation – to lead the world in science, technology, and engineering; and Security – to reduce nuclear dangers and environmental risks. Examples of these goals in the FY 2011 budget request include the following activities.

Tank waste is EM's most significant environmental, safety, and health threat. It is also the largest cost element of the cleanup program with a life-cycle range estimated between \$87 billion and \$117 billion, which represents between 32 percent and 35 percent of the program's total cost. The Office of River Protection's share of the tank waste lifecycle cost is between \$57 billion and \$75 billion. This budget request contains \$60 million specifically at the Office of River Protection for science and technology investments in tank waste technologies. This investment is intended to significantly reduce both the technical uncertainty and the life-cycle cost associated with building and operating these one of kind tank waste processing facilities. In addition, it will also further EM's ability to reduce the most significant environmental risk in the complex.

EM will also continue to implement its footprint reduction strategy with a combination of both base program and Recovery Act funds. At large sites, EM will focus on area closures and cleanup activities such as D&D, soil and groundwater remediation and solid waste disposition. EM's success in these areas will reduce lifecycle program costs. These activities have an established regulatory framework and proven technologies; ultimately, completion of these types of cleanup activities reduces the surveillance and maintenance costs associate with managing large tracks of land.

EM will also continue to conduct independent reviews, modeled after the Office of Science's Lehman Reviews. These reviews examine in detail all aspects of a construction project, including project management, technology, design, engineering, safety, environment, security, and quality assurance. The process relies on expert knowledge and experience of world-class engineers, scientists, and managers sourced from federal staff, DOE contractors, engineering firms, national laboratories, and the academic community. These reviews will assess the progress of each of its major projects and determine their overall health and ability to meet cost and schedule goals. Scheduled approximately every 6-9 months, these reviews are intended to reduce the risk of project failure by identifying existing and potential concerns in a timely manner so that the Waste Treatment and Immobilization Plant and processing facilities are brought on to support overall environmental risk reduction.

Overview

EM continues to pursue its cleanup objectives within the overall framework of achieving the greatest risk reduction benefit per radioactive content and overlaying regulatory compliance commitments and best business practices to maximize cleanup progress. To support this approach, EM has prioritized its cleanup activities:

- Activities to maintain a safe and secure posture in the EM complex
- Radioactive tank waste stabilization, treatment, and disposal
- Spent nuclear fuel storage, receipt, and disposition
- Special nuclear material consolidation, processing, and disposition
- High risk soil and groundwater remediation
- Transuranic and mixed/low-level waste disposition
- Soil and groundwater remediation
- Excess facilities deactivation and decommissioning

In addition to these priorities, other equally important strategies are integrated into cleanup activities important not only to the achievement of EM cleanup progress, but also important to our stakeholders and states where cleanup sites are located. Most importantly, EM will continue to discharge its responsibilities by conducting cleanup within a “Safety First” culture that integrates environment, safety, and health requirements and controls into all work activities to ensure protection to the workers, public, and the environment, and adheres to the project and contract management principles as defined in DOE Order 413.3A. As part of this, project risks are defined and risk integration strategies are developed.

The performance of the EM program is measured against the scope, schedule, and cost of each project in the program. Sixteen corporate performance metrics are also used to assess and communicate the annual and life-cycle progress of the EM cleanup program. Each metric is tracked against the projected life-cycle quantities necessary to complete cleanup at each site. Together, the scope, cost, schedule and the performance metrics, which are under configuration control, clearly establish agreed-upon performance expectations.

Project cost, schedule, and performance, including earned value data, continue to be reviewed on a regular basis. In FY 2011 EM will continue to focus on project management. Two new initiatives are being implemented to further improve project management. Spurred on by the implementation of the American Reinvestment and Recovery Act (Recovery Act), EM has undertaken a broad restructuring of the EM portfolio of projects, programs, and activities that align work scope into operating and capital asset activities. In addition, EM intends to implement a corporate work breakdown structure (WBS) that will define and group a project’s discrete work elements or tasks in a way that helps organize and define the total work scope of the project. A corporate WBS will provide EM with a consistent framework for cost estimating and schedule control.

EM intends to accomplish its primary goal of achieving the greatest risk reduction benefit per radioactive content by focusing on these primary areas:

- Life-cycle Cost Management (LCC)—EM's objective is complete cleanup of the Cold War environmental legacy in approximately six decades within the currently estimated LCC. EM will achieve this through proactive management of its LCC estimate. In addition, EM intends to utilize science and technology to reduce the cost associated with tank waste and special nuclear material processing.
- Footprint Reduction—Footprint reduction and small site completions accelerate environmental clean-up in 14 states and reduce life-cycle costs by eliminating years of infrastructure maintenance. EM's objective is to reduce the legacy footprint 40% by the end of FY 2011 and 80% to 90% by the end of FY 2015.

FY 2011 Budget

The FY 2011 investment of \$6.0 billion in budget authority will be utilized to fund activities to maintain a safe, secure and compliant posture in the EM complex. Specifically, the budget funds the construction and operation of three unique and complex tank waste processing plants to treat approximately 88 million gallons of radioactive tank waste for ultimate disposal. With a total cost estimate of \$14.3 billion for these processing plants – one of the primary risk and cost drivers in the program – investments are still needed to complete construction and begin the operation of these necessary facilities to process the tank waste. The request will also fund the solid waste disposal infrastructure needed to support disposal of transuranic and low-level wastes generated by high-risk activities and the footprint reduction activities.

Receipt of Recovery Act funding has allowed EM to fund the majority of its high risk activities within its base budget request of \$6.0 billion. However, to meet out-year milestones, specific activities such as build out of tank farm infrastructure needed to support waste feed to both the Salt Waste Processing Facility at Savannah River Site (SRS), and the Waste Treatment and Immobilization Plant at Hanford are being funded with Recovery Act funds.

In FY 2011, the appropriation request will support the Administration's commitment to accelerate cleanup of the Portsmouth Gaseous Diffusion Plant in Piketon, Ohio by increasing the site's base funding to a total of \$479 million. Approximately \$47 million of that total will be used to commence safe operation of the DUF6 Project conversion facilities and disposition the resultant uranium oxide and hydrofluoric acid. About 9,800 metric tons of depleted uranium will be packaged for disposition. Most of the funding request will be used for increased level of decontamination and decommissioning of gaseous diffusion plant ancillary facilities and systems, for disposing of decontamination and decommissioning waste off-site, and to begin small equipment removal, utility optimizations and hazardous material abatement actions within the gaseous diffusion plant operations buildings.

At Idaho, the FY 2011 request will enable completion of the sodium-bearing waste treatment facility testing and readiness verification in preparation for hot startup in June, 2011. This project will treat approximately 900,000 gallons of sodium bearing waste stored in waste tanks that are 35 to 45 years old. The treatment of this waste will enable EM to meet the Notice of Noncompliance – Consent Order Modification to cease use of the Tank Farm Facility by December 31, 2012. Additionally, the request will meet requirements of the Idaho Settlement Agreement by disposing remote-handled low-level

waste at the Radioactive Waste Management Complex; mixed low-level waste at appropriate off-site disposal facilities; and characterizing and certifying remote-handled transuranic waste at the Idaho Nuclear Technology and Engineering Center in preparation for shipment to the Waste Isolation Pilot Plant. The request will provide for shipping stored contact-handled transuranic waste to the Waste Isolation Pilot Plant using the Advanced Mixed Waste Treatment Facility, and for receipt, characterization, and certification of transuranic waste from other DOE sites in preparation for shipment to the Waste Isolation Pilot Plant.

At Richland, significant progress will continue to be made along the River Corridor. EM will complete excavation of 3 of the 5 burial grounds in the 100-H Area, complete 22 interim remedial actions at the 100 B/C Area, complete disposition of eight facilities, and initiate interim safe storage of the 105-KE Reactor and D4 100K Area facilities. These efforts are aimed at reducing the Richland site footprint by up to 40% in 2011.

The Oak Ridge National Laboratory maintains the Department's inventory of Uranium-233 (U-233), which is currently stored in Building 3019. The FY 2011 funding request will continue design of a project that processes the U-233 material in preparation for future disposal. Benefits include reducing safeguards and security requirements and eliminating long-term worker safety and criticality concerns. Recent discoveries of structural integrity issues with Building 3019 and determination that a portion of the U-233 is unsuitable for disposal at WIPP will require significant design changes to the facility. EM plans to continue the design effort through 90 percent design in FY 2011. At that point, a new baseline for construction and operations will be established. This will ensure that the construction estimate will have the accuracy necessary to complete the project on schedule and within budget.

At the Savannah River Site, the H Area facilities will continue to stabilize and disposition enriched uranium materials through the middle of FY 2011. Funding is included for H Area infrastructure upgrades. The site will also continue to receive weapons grade surplus non-pit plutonium from the Los Alamos National Laboratory, and Lawrence Livermore National Laboratory. The largest portion of the request will be for continued operation of interim salt processing facilities, operation of the Defense Waste Processing Facility to complete 297 canisters of glass waste, and continued construction of the Salt Waste Processing Facility. Finally, the Savannah River request will provide for returning Tank 48 to service and performing Bulk Waste Removal operations in order to support the Defense Waste Processing Facility feed preparation, Actinide Removal Process and Modular Caustic Side Extraction feed preparation, as well as support of tank closure activities. The combination of funding from the Recovery Act and the FY 2011 request will reduce the site's industrial area by 40 percent by September 2011.

EM will achieve four facility completions in FY 2011. Legacy cleanup completion will be achieved in FY 2011 at the General Electric Vallecitos Nuclear Center, Brookhaven National Laboratory, the Separations Process Research Unit, and the Stanford Linear Accelerator Center. The last three completions are being accelerated through the combination of Recovery Act and annual appropriations.

To address many of the high-risk activities facing the EM program, a total of \$32 million is requested for Technology Development and Demonstration (TD&D) efforts. The FY 2011 Request will increase acceleration of technology development for addressing tank waste issues related to waste chemistry for characterization and separation; advanced retrieval technologies; improved melter throughput; and increased glass waste loading. Additionally, subsurface science issues to support development of state-of-the-art methods and models for fate and transport in the subsurface. This reduces the uncertainty in the

current models and methods for performance assessments. Finally, design and adaptation of cost-effective remediation tools for deactivation and decommissioning will be performed.

The Yucca Mountain Project to construct a geologic repository for high-level waste in a remote corner of the Nevada Test Site will be terminated in FY 2010. During FY 2010, the Office of Civilian Radioactive Waste Management will prepare the repository site for stewardship and remediation. The Department will work with state and federal agencies to develop a remediation plan that adheres to all applicable statutes and regulations for the site. EM staff will support remediation planning for the Yucca Mountain repository site.

American Reinvestment and Recovery Act

In addition to the base budget request of \$6.0 billion, EM will continue to expend the \$6 billion in Recovery Act funding provided by Congress to complete lower-risk footprint reduction and near-term completion cleanup activities. Table 1 below highlights the Recovery Act funding by site. Recovery Act work is accelerating the completion of existing environmental protection and site cleanup goals, including decontamination and decommissioning (D&D) of excess nuclear facilities and disposal of radioactive waste from the EM sites, in many cases much earlier than originally planned. In addition, this work reduces environmental threats to areas surrounding the sites resulting in job creation, cost savings over the life-cycle of the EM program, and enhanced environmental protection

Recovery Act funding is being utilized by EM site contractors and subcontractors who are hiring workers to perform the additional soil and groundwater remediation, decontamination and decommissioning, and waste processing activities. Workers that will be utilized include well drillers, soil excavation personnel, construction and demolition personnel, waste processors and handlers, railroad train crews and waste truck drivers.

As of December 2009, EM obligated over \$5.8 billion in Recovery Act funding and created and/or saved over 4,000 jobs. Recovery Act funded projects are described in more detail in each site overview section contained in the detailed budget justification.

The tables below show the site distribution (Table 1) and metrics (Table 2) associated with Recovery Act funding.

Table 1. Recovery Act Funding by Site

Site	Defense	Non-Defense	UE D&D	TOTAL
Argonne National Laboratory		98,500,000		98,500,000
Brookhaven National Laboratory		42,355,000		42,355,000
Carlsbad Field Office	172,375,000			172,375,000
Energy Technology Engineering Center		54,175,000		54,175,000
Idaho National Laboratory	467,875,000			467,875,000
Los Alamos National Laboratory	197,000,000	14,775,000		211,775,000
Moab		108,350,000		108,350,000
Mound	19,700,000			19,700,000
Nevada Test Site	44,325,000			44,325,000
Oak Ridge Reservation	558,110,000	78,800,000	118,200,000	755,110,000
Office of River Protection	326,035,000			326,035,000
Paducah			78,800,000	78,800,000
Portsmouth			118,200,000	118,200,000
Richland	1,634,500,000			1,634,500,000
Savannah River	1,615,400,000			1,615,400,000
Separations Processing Research Unit	51,775,000			51,775,000
Title X Uranium/Thorium Reimbursement Program			68,950,000	68,950,000
West Valley		73,875,000		73,875,000
SLAC National Accelerator Laboratory		7,925,000		7,925,000
Program Direction/Other	39,905,000	4,245,000	5,850,000	50,000,000
TOTALS	5,127,000,000	483,000,000	390,000,000	6,000,000,000

With Recovery Act funding, EM has been able to accelerate many activities planned for the outyears. The EM program has identified those performance metrics that reflect activities that are being accomplished through the use of Recovery Act funding. The table (shown below) identifies the portion of the EM Corporate Performance Metrics that are associated with Recovery Act projects and is provided here for the reader's information. The performance metrics listed for Recovery Act projects are separate and above those planned to be accomplished provided in the FY 2011 Budget Request. Unless specifically identified with Recovery Act funding, all the metrics tables displayed in this document reflect the annual appropriations for FY 2009, FY 2010 and the request for FY 2011.

Table 2. Recovery Act Performance Metrics

Corporate Performance Measures – EM Totals (ARRA Only) ^a

	Complete Through FY 2009	Cumulative FY 2010 Target	Cumulative FY 2011 Target
Geographic Sites Eliminated (number of sites)	0	0	3
Plutonium Metal or Oxide packaged for long-term storage (Number of Containers)	0	0	0
Enriched Uranium packaged for disposition (Number of Containers)	0	0	0
Plutonium or Uranium Residues packaged for disposition (Kilograms of Bulk)	0	0	0
Depleted and Other Uranium packaged for disposition (Metric Tons)	0	11,646	11,646
Liquid Waste in Inventory eliminated (Thousands of Gallons)	0	0	0
Liquid Waste Tanks closed (Number of Tanks)	0	0	0
High-Level Waste packaged for final disposition (Number of Containers)	0	0	0
Spent Nuclear Fuel packaged for final disposition (Metric Tons of Heavy Metal)	0	0	0
Transuranic Waste shipped for disposal (Cubic meters) – CH	180	3,147	8,031
Transuranic Waste shipped for disposal (Cubic meters) – RH	17	113	487
Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	4,468	24,096	72,080
Material Access Areas eliminated (Number of Material Access Areas)	0	0	0
Nuclear Facility Completions (Number of Facilities)	8	19	37
Radioactive Facility Completions (Number of Facilities)	6	43	87
Industrial Facility Completions (Number of Facilities)	12	55	98
Remediation Complete (Number of Release Sites)	3	33	93

Highlights of the Request

For FY 2011, EM’s funding priorities are as follows:

- Requisite safety, security, and services across EM cleanup sites;
- Post-closure contract liabilities;
- Radioactive tank waste stabilization, treatment, and disposal;
- Spent nuclear fuel storage, receipt, and disposition;
- Special nuclear materials consolidation, processing, and disposition;
- High risk soil and groundwater remediation;
- Solid waste (transuranic, low-level, and mixed low-level wastes) treatment, storage, and disposal;

^a Performance measures are currently being updated.

- Soil and groundwater remediation; and
- Decontamination and decommissioning of excess contaminated facilities.

Based on these priorities, EM's FY 2011 request of \$6.0 billion will fund the following activities:

- Safe and secure operations;
- Hanford Waste Treatment and Immobilization Plant (\$740M), completion of two C-Farm Single-Shell Tank retrievals (\$60M);
- Tank farm operations at the Hanford, Idaho, and Savannah River sites (\$994M);
- Idaho Sodium Bearing Waste Treatment construction activities (\$6.5M);
- Savannah River Salt Waste Processing Facility construction and pre-operations (\$288M);
- Special nuclear material consolidation/disposition and storage (\$485M), this includes H canyon operations (\$370M), and U-233/Building 3019 processing (\$50M);
- DUF6 Operations at Portsmouth and Paducah (\$99.5M);
- Solid Waste (TRU and Mixed/Low level waste) storage, treatment, and disposal (\$673M) includes operations of WIPP to support contact-handled and remote-handled shipments and operations of the Nevada Test Site to dispose of low-level and mixed low-level wastes;
- Soil and ground water remediation at Idaho, Hanford, Nevada, Los Alamos and Small site (\$415M);
- Acceleration of Portsmouth D&D (\$374M);
- Decontamination and decommissioning work to maintain site progress (\$1,007M);
- Investment in tank waste technologies within the Office of River Protection (\$50M); and
- Community and Regulatory activities (\$57M).

FY 2010 Accomplishments and FY 2011 Highlights

EM continues to make significant cleanup progress demonstrated by:

- Continue consolidation of all nuclear materials at the Savannah River Site.
- Processed for disposition over two and a half million gallons of radioactive liquid waste at the Savannah River Site.
- Producing over 3,500 cans of vitrified high-level waste from highly radioactive liquid wastes (Savannah River Site and the West Valley Demonstration Project) by the end of FY 2011.
- By the end of FY 2011, characterize and certify approximately 80,000 cubic meters of transuranic waste from many sites to the Waste Isolation Pilot Plant and ship that waste from many sites over 8,000,000 miles for permanent disposal, without any major incident and with no release.
- Disposing of over one million cubic meters of legacy low-level waste and mixed low-level waste.
- Safely closing eleven of the fifteen radioactive liquid waste tanks at the Idaho National Laboratory.
- Over eight million gallons of high-level waste has been calcined (dried into powder) into about 4,400 cubic meters of calcine. This reduced the volume of liquid waste remaining in the tank farm to approximately one million gallons of sodium-bearing waste at the Idaho Site.
- All assigned legacy special nuclear material has been disposed and all EM assigned spent nuclear fuel will be in dry storage at the Idaho Site.
- Complete construction and readiness testing in preparation for hot start up of the Sodium Bearing Waste facility at the Idaho Site.
- Dispose of all legacy suspect transuranic waste from the Separations Process Research Unit (SPRU) by the end of FY 2011.

- Complete shipment of legacy contact-handled transuranic waste in FY 2010 and FY 2011 from small sites by consolidating at Idaho National Laboratory for CCP certification, with final disposal at WIPP.
- EM completes 90% of the design for the Downblend of U-233 in Building 3019.
- Savannah River returns Tank 48 to service and performs Bulk Waste Removal operations in order to support feed preparation and support tank closure activities.

Strategic Themes and Goals and GPRA Program Goals

The following chart aligns the current Strategic Plan with the Secretary’s priorities:

Strategic Theme	Strategic Goal Title	Secretary's Priorities	GPRA Unit Program Number	GPRA Unit Program Title	Office
4. Environmental Responsibility	1. Environmental Cleanup	National Security and Legacy	53	Environmental Management	EM

Annual Performance Results and Targets

EM has developed 16 corporate performance measures to enable the program to monitor annual and life-cycle progress towards meeting the Department’s Strategic Goal 4 and EM’s Program Goal. These corporate performance measures are:

- 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);
- Depleted and other uranium packaged for disposition (metric tons).
- Liquid waste eliminated (millions of gallons);
- Number of liquid tanks closed;
- Canisters of high-level waste packaged for final disposition;
- Spent nuclear fuel packaged for final disposition (metric tons of heavy metal);
- Transuranic waste dispositioned (cubic meters);
- Low-level waste/mixed low-level waste disposed (cubic meters);
- Number of material access areas eliminated;
- Number of nuclear facilities completed;
- Number of radioactive facilities completed;
- Number of industrial facilities completed;
- Number of release sites remediated; and

- Number of geographic sites closed.

Each of these 16 corporate performance measures is quantitative and focuses on the accomplishment of risk-reducing actions and life-cycle reduction. Each measure is tracked in the context of the total measure (life-cycle) necessary to complete each site as well as the EM program as a whole. The corporate measures are under configuration control, thereby establishing performance expectations and accountability for those expectations within a given funding level. Through configuration control, EM is able to make corporate decisions that will keep the program on track, monitor and control costs and schedules, and manage site closure expectations. In addition to the corporate measures, performance is also tracked through the implementation of earned value management, which are used to demonstrate whether a project and site are on track to achieve agreed upon performance expectations.

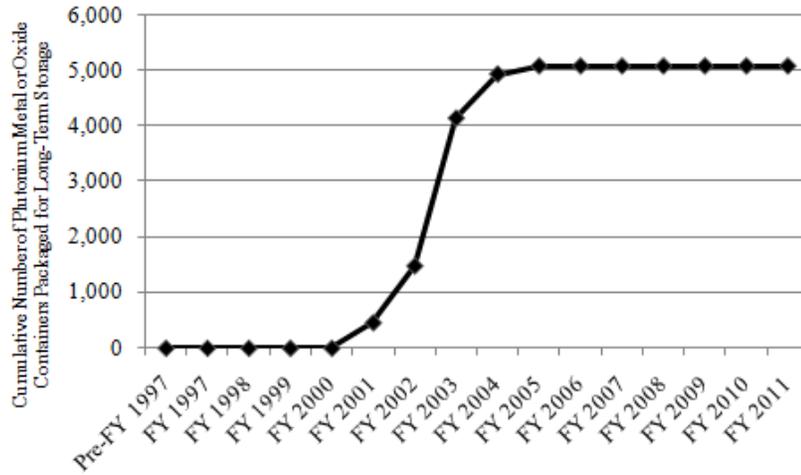
Nuclear Materials

Reducing the inventory of high-risk nuclear materials by preparing it for long-term storage or disposition quantitatively measures EM's progress towards environmental, safety, and security risk reduction. The stabilization and packaging of nuclear materials indicates a reduction in an activity that is a major cost driver for the EM program. The following four corporate performance measures (and the identification of the sites that mainly contribute to each of the measures for which work scope remains) are depicted below.

- Plutonium metal or oxide containers packaged for long-term storage (all work for this corporate performance measure has been completed)
- Enriched uranium containers packaged for long-term storage (Hanford Site, Savannah River Site, and Idaho National Laboratory)
- Plutonium or uranium residues packaged for disposition (all work for this corporate performance measure has been completed) and
- Depleted and other uranium packaged for disposition (Hanford, Savannah River Site, Paducah, and Portsmouth)

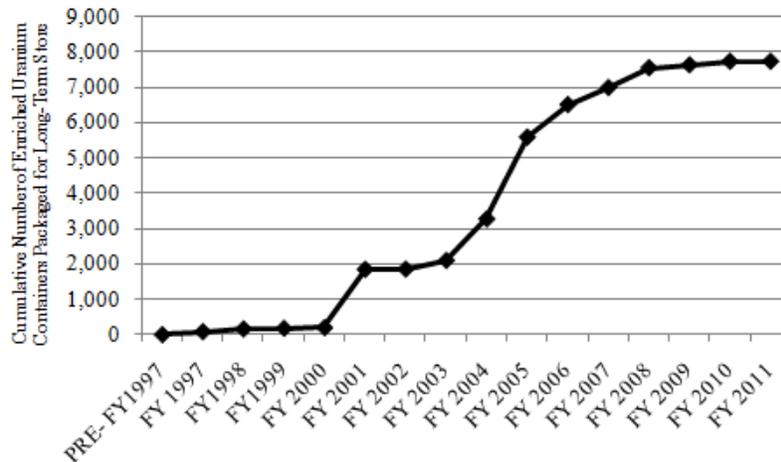
Plutonium Metal or Oxide Progress

FY2008 Cumulative Actual	FY2009 Cumulative Actual	FY2010 Cumulative Target	FY2011 Cumulative Target	% Complete Through FY2011	Life-Cycle Total
5,089	Measure Completed			100%	5,089



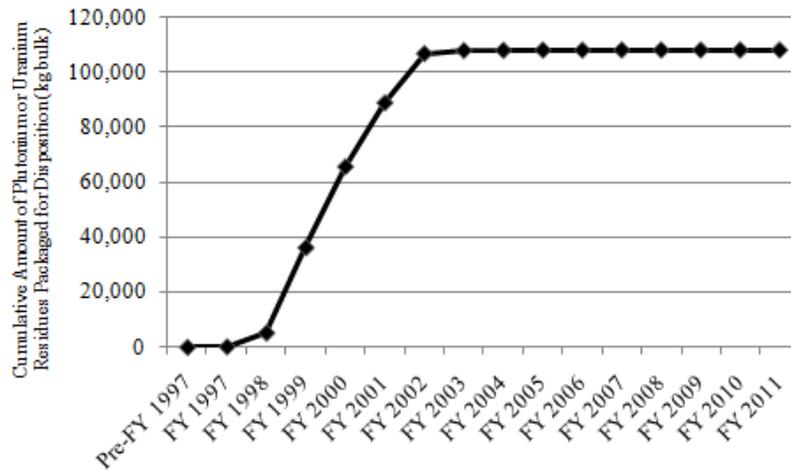
Enriched Uranium Progress

FY2008 Cumulative Actual	FY2009 Cumulative Actual	FY2010 Cumulative Target	FY2011 Cumulative Target	% Complete Through FY2011	Life-Cycle Total
7,548	7,629	7,728	7,728	98%	7,910



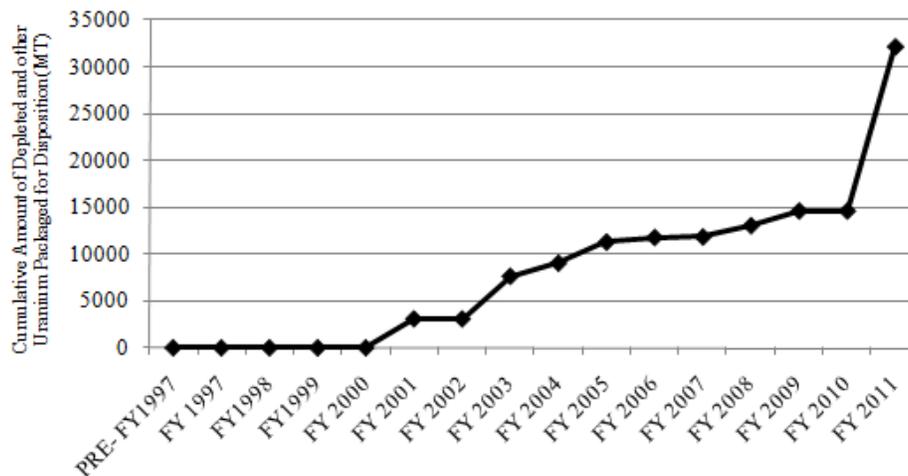
Plutonium or Uranium Residues Progress

FY2008 Cumulative Actual	FY2009 Cumulative Actual	FY2010 Cumulative Target	FY2011 Cumulative Target	% Complete Through FY2011	Life-Cycle Total
107,828	Measure Completed			100%	107,828



Depleted and Other Uranium Progress

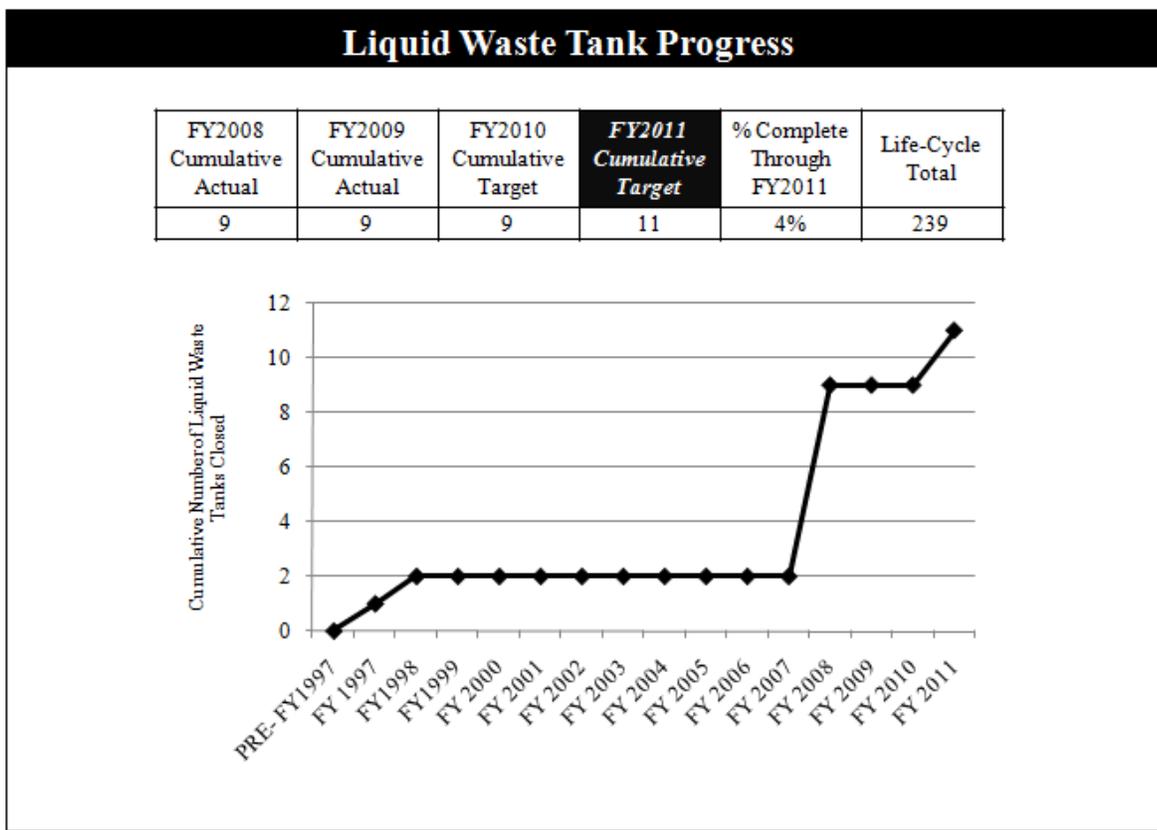
FY2008 Cumulative Actual	FY2009 Cumulative Actual	FY2010 Cumulative Target	FY2011 Cumulative Target	% Complete Through FY2011	Life-Cycle Total
13,074	14,636	14,636	32,186	4%	736,832



Liquid Waste

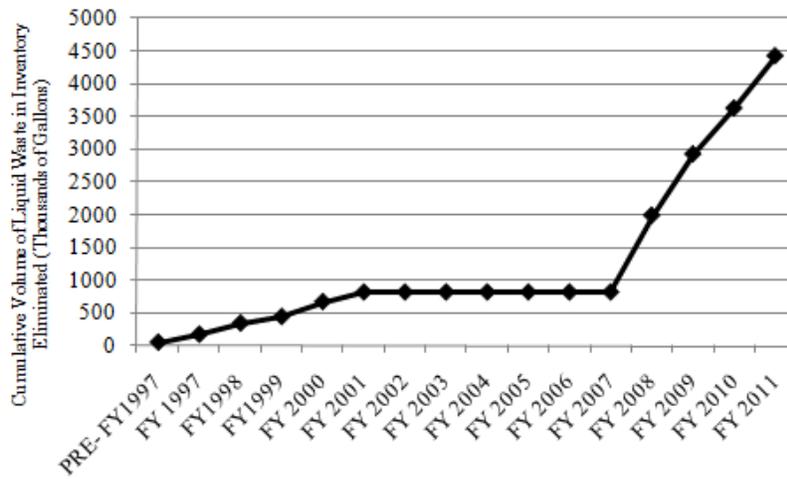
By reducing the amount of high risk radioactive liquid waste in the inventory and subsequent closing of the liquid waste tanks, EM is demonstrating tangible evidence of the program's goal to reduce the highest risks in the complex first. In addition to eliminating high-risk material, corresponding life-cycle cost reductions are achieved for an activity that is a major cost driver to the EM program. The following two corporate measures (and the identification of the sites that mainly contribute to each of the measures) are depicted below:

- Liquid waste in inventory eliminated (West Valley, Hanford Site and Savannah River Site) and
- Liquid waste tanks closed (Hanford Site, Savannah River Site, and Idaho National Laboratory)



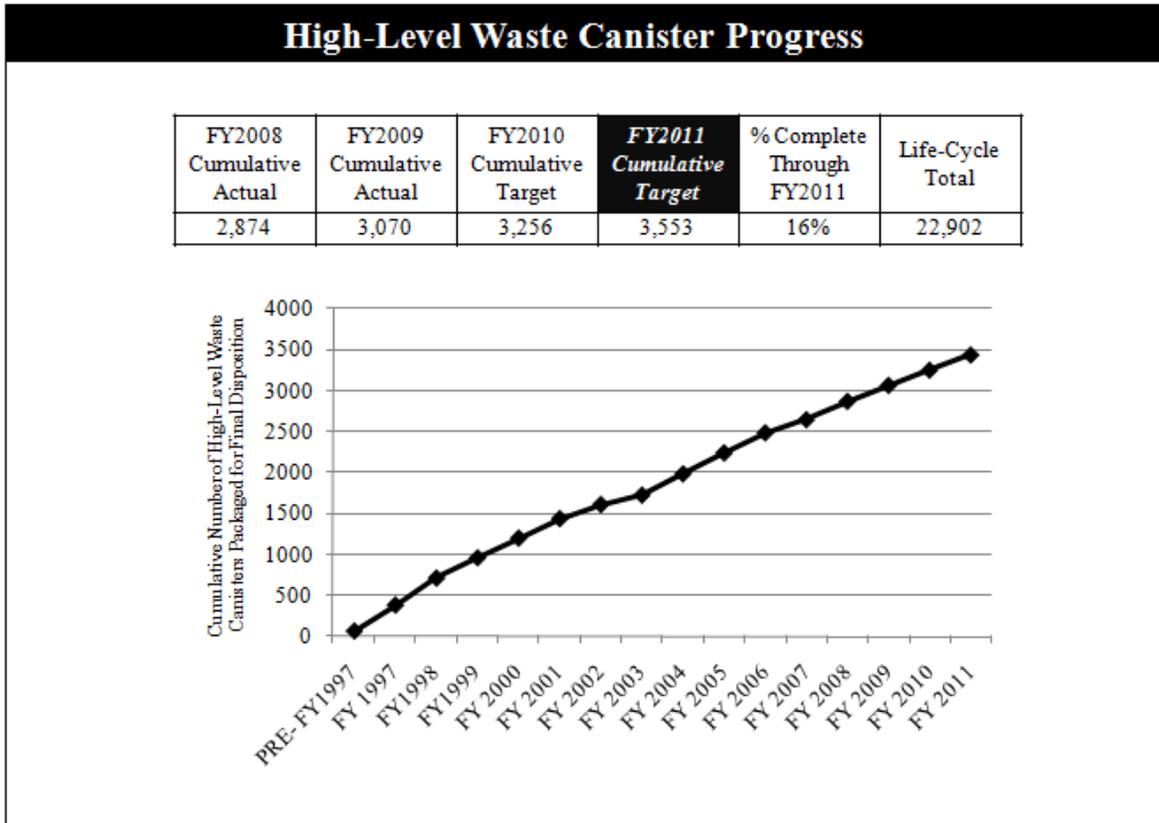
Liquid Waste in Inventory Progress

FY2008 Cumulative Actual	FY2009 Cumulative Actual	FY2010 Cumulative Target	FY2011 Cumulative Target	% Complete Through FY2011	Life-Cycle Total
1,988	2,924	3,624	4,424	5%	88,814



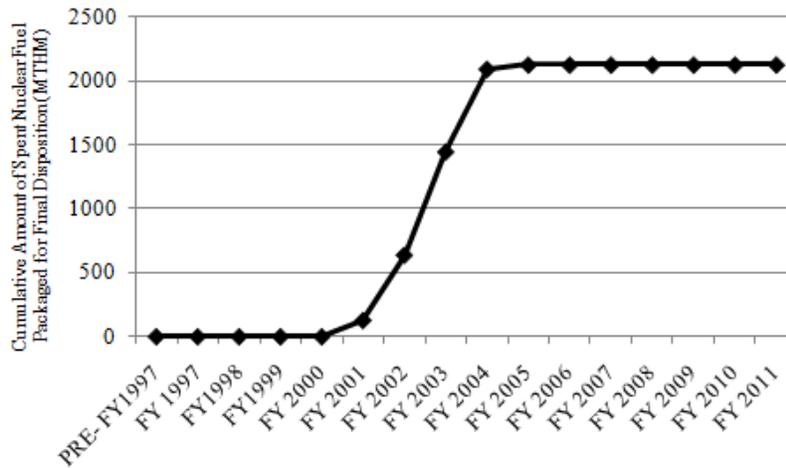
High-Level Waste and Spent Nuclear Fuel

The EM program is preparing high-level waste and spent nuclear fuel for final disposition in order to ensure the material is ready for offsite disposal. Completion of high-level waste and spent nuclear fuel activities indicates the reduction of both high risk and cost incurring activities. The Hanford Site, Savannah River Site, and Idaho National Laboratory primarily contribute to both the high-level waste measure and the spent nuclear fuel measure. Both corporate performance measures are depicted below.



Spent Nuclear Fuel Progress

FY2008 Cumulative Actual	FY2009 Cumulative Actual	FY2010 Cumulative Target	FY2011 Cumulative Target	% Complete Through FY2011	Life-Cycle Total
2,128	2,128	2,128	2,128	88%	2,418



Transuranic Waste and Legacy and Newly Generated Low-Level/Mixed Low-Level Waste

The disposition of transuranic waste metric measures a site's progress toward accelerating cleanup and reducing risk. This measure reflects the progress the generator site has made to manage and prepare its inventory of transuranic (and suspect-transuranic) waste for disposal; it also reflects support from the Department's disposal facilities, in many cases. In FY 2011, the Idaho National Laboratory, Los Alamos National Laboratory, and Oak Ridge are the primary contributors to the transuranic waste corporate measure using funds within this budget request.^a The volume included within the FY 2011 target reflects that the transuranic disposition activities at several sites (e.g., Argonne National Lab, Savannah River Site) are supported in part or in total by funds provided by the American Recovery and Reinvestment Act. This metric also provides information on the disposition of both remote-handled transuranic and contact-handled transuranic waste. It is important to note that the budget request supports the operation of the Waste Isolation Pilot Plan and supporting programs to provide disposal services to these generator sites.

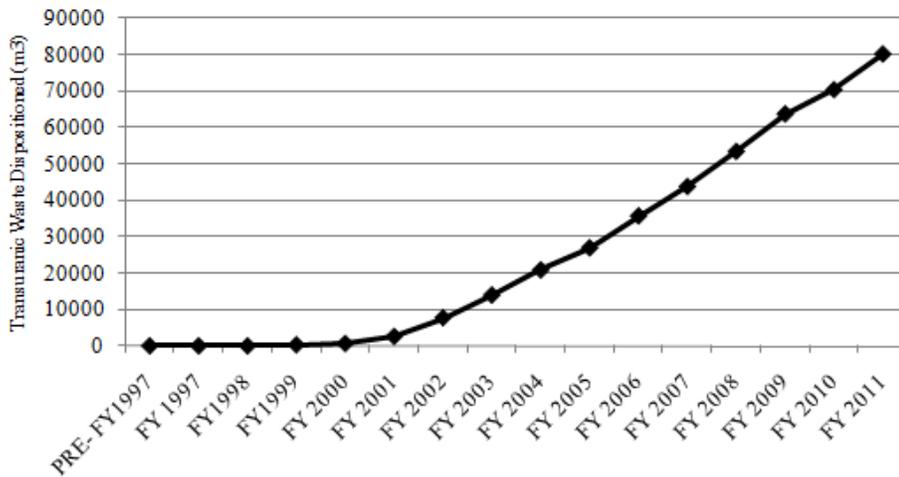
The disposal of legacy and newly generated low-level waste and mixed low-level waste reflects the intensity of cleanup activities at a site. A number of sites contribute to the low-level and mixed low-level waste measure.

^a Changes in the targets and life-cycle estimate for transuranic waste reflect new shipping priorities for Oak Ridge, Savannah River, and Los Alamos National Laboratory.

The two corporate measures portrayed below demonstrate progress towards EM’s ultimate goal of site completion. The lifecycle totals for these measures currently include scope that will be funded by the American Recovery and Reinvestment Act. They do not, however, yet include the volumes of waste associated with the additional environmental liabilities that EM has agreed to accept from other Departmental mission programs.

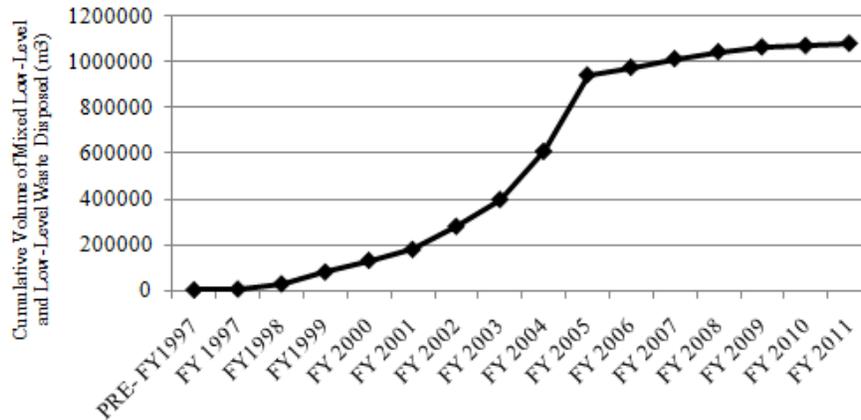
Transuranic Waste Progress

	FY2008 Cumulative Actual	FY2009 Cumulative Actual	FY2010 Cumulative Target	FY2011 Cumulative Target	% Complete Through FY2011	Life-Cycle Total
TRU Total	53,312	63,586	70,245	80,006	49%	163,720
CH-TRU	53,240	63,456	70,115	79,599	51%	156,848
RH-TRU	72	130	130	407	6%	6,872



Legacy and Newly Generated Low-Level and Mixed Low-Level Waste Progress

FY2008 Cumulative Actual	FY2009 Cumulative Actual	FY2010 Cumulative Target	<i>FY2011 Cumulative Target</i>	% Complete Through FY2011	Life-Cycle Total
1,044,129	1,065,098	1,070,804	1,080,923	77%	1,406,085

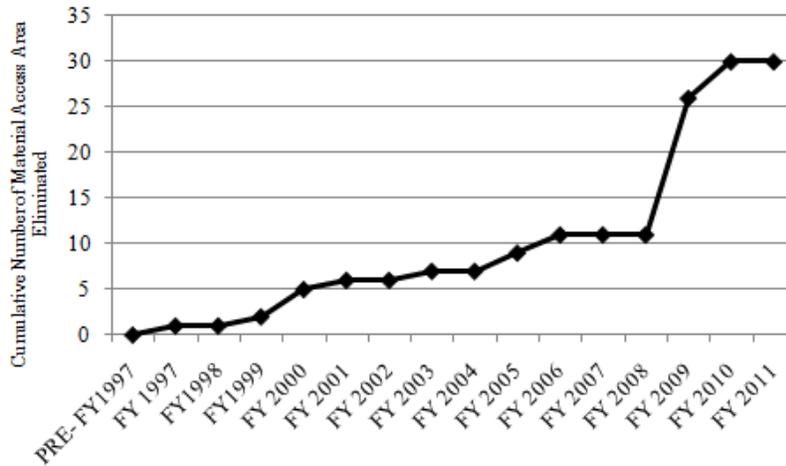


Material Access Areas

The elimination of a material access area indicates the completion of a segment of work that removes the need for safeguards and security in the area. This is an obvious indicator of a site's progress towards reducing risk to workers, the public, and the environment. The Rocky Flats Site and the Idaho National Laboratory completed all work for this measure, while Savannah River Site and Hanford Site continue to contribute to this corporate measure, which is depicted below.

Material Access Area Progress

FY2008 Cumulative Actual	FY2009 Cumulative Actual	FY2010 Cumulative Target	FY2011 Cumulative Target	% Complete Through FY2011	Life-Cycle Total
11	26	30	30	97%	31

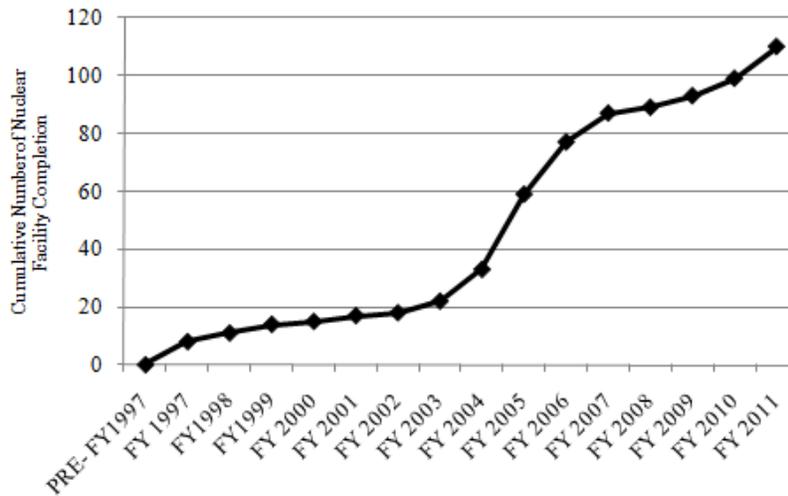


Facility Completions

Three corporate performance measures (i.e., nuclear, radioactive, and industrial facilities) encompass facility completions; measured are the number of facilities that have reached their end state within the EM program. The endpoint corresponds to one of the following: decommissioning, deactivation, dismantlement, demolition, or responsibility for the facility is transferred to another program or owner. Facility completions are an excellent indicator of EM's progress towards site cleanup. Many sites contribute to facility completions, which are portrayed below.

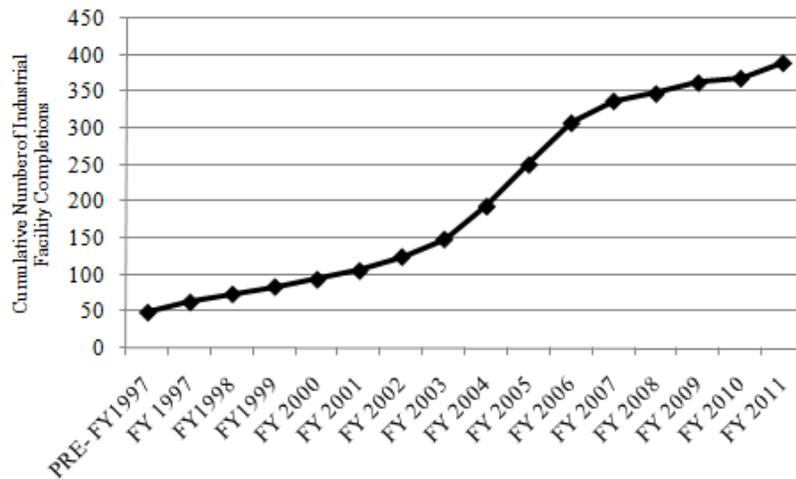
Nuclear Facility Progress

FY2008 Cumulative Actual	FY2009 Cumulative Actual	FY2010 Cumulative Target	FY2011 Cumulative Target	% Complete Through FY2011	Life-Cycle Total
89	93	99	110	23%	474



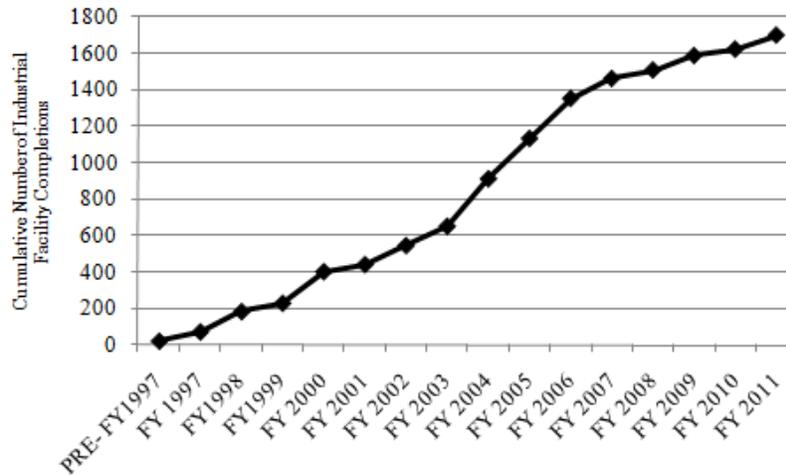
Radioactive Facility Progress

FY2008 Cumulative Actual	FY2009 Cumulative Actual	FY2010 Cumulative Target	FY2011 Cumulative Target	% Complete Through FY2011	Life-Cycle Total
348	363	369	390	37%	1,045



Industrial Facility Progress

FY2008 Cumulative Actual	FY2009 Cumulative Actual	FY2010 Cumulative Target	<i>FY2011 Cumulative Target</i>	% Complete Through FY2011	Life-Cycle Total
1,509	1,588	1,623	1,700	47%	3,640

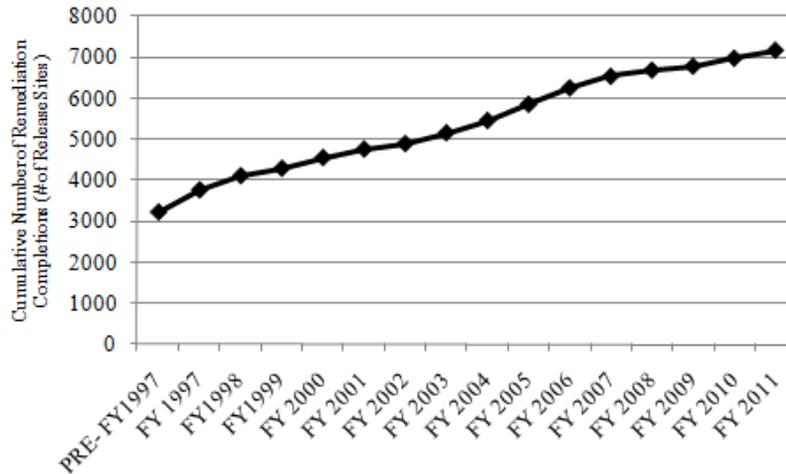


Remediation Completions

The completion of release sites, discrete areas of contamination at a site, is a good indicator of a site's progress towards completions. The measure indicates completion of the activities necessary to evaluate and alleviated the release or possible release of a hazardous substance that may pose a risk to human health or the environment. Many sites contribute to remediation completions, which are portrayed below.

Remediation Completion Progress

FY2008 Cumulative Actual	FY2009 Cumulative Actual	FY2010 Cumulative Target	FY2011 Cumulative Target	% Complete Through FY2011	Life-Cycle Total
6,693	6,788	6,985	7,181	67%	10,645



Geographic Site Completions

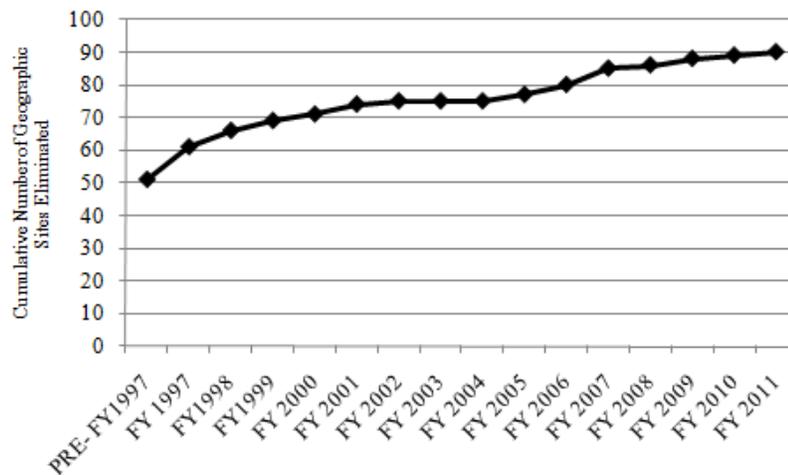
Completion of a geographic site best reflects EM's goal of accelerating cleanup and reducing risk. A geographic site is considered complete in its entirety when active remediation has been completed in accordance with the terms and conditions of cleanup agreements. Stewardship or non-EM activities may be on going after a site is completed. EM tracks cleanup responsibilities for 108 contaminated sites.

- In FY 2009 EM has completed cleanup at two sites – Pantex Plant and Argonne National Laboratory.
- In FY 2010 EM plans to complete cleanup at one site – Inhalation and Toxicology Laboratory.
- In FY 2011 EM plans to complete cleanup at four sites – General Electric Vallecitos Nuclear Center, Brookhaven National Laboratory, Stanford Linear Accelerator Center and Separations Process Research Unit.

In order to complete a geographic site (e.g., Fernald), EM must complete remediation of all release sites present at the site. This corporate performance measure that indicates the level of completion for the EM program is shown below.

Geographic Sites Eliminated

FY2008 Cumulative Actual	FY2009 Cumulative Actual	FY2010 Cumulative Target	<i>FY2011 Cumulative Target</i>	% Complete Through FY2011	Life-Cycle Total
86	88	89	90	86%	107



Means and Strategies

The EM program will pursue the following means and strategies to achieve its program goals:

- Eliminate significant environmental, health and safety risks as soon as possible.
 - High-level waste/tank waste stabilization, treatment, disposal
 - Spent nuclear fuel storage, receipt, disposition
 - Special nuclear material consolidation, processing and disposition
 - Higher risk soil and groundwater remediation
 - Solid waste (transuranic waste and low-level waste/mixed low-level waste) storage, treatment, disposal
 - Soil and groundwater remediation
 - Decontamination and decommissioning of excess facilities
- Hold cleanup contractors accountable to high safety standards; and empower them to pursue the most direct path to success.
- Acquisition strategies will promote contractor efficiencies through competition, performance incentives and through use of appropriate contracting vehicles (such as Indefinite Delivery/ Indefinite Quantity).
- Perform risk reduction and site closure in concert with regulators and stakeholders to determine the most appropriate remediation schedules and approaches.
- Project contingency funding will not be requested with the exception of capital projects. Unexpected project expenditures will reduce planned annual project performance.
- Streamline EM program activities to focus on risk reduction and cleanup.

- Continue to revitalize human capital as it is only with well-trained and qualified people that EM will be able to accomplish its cleanup mission.

The following external factors could affect EM's ability to achieve its strategic goal:

- **Cleanup Standards:** The end state for cleanup at certain sites is not fully determined. The extent of cleanup greatly affects cost, schedule and scope of work.
- **Uncertain Work Scope:** Uncertainties are inherent in the environmental cleanup program due to the complexity and nature of the work. There are uncertainties in EM's knowledge of the types of contaminants, their extent, and concentrations.
- **Commercially Available Options for Waste Disposition:** Accomplishment of risk reduction and site closure is dependent upon the continued availability of commercial options for mixed low-level waste and low-level waste treatment and disposal.
- **Constrained Flexibility:** New regulations, statutes, orders, or litigation may constrain the program's flexibility in accomplishing the goal of cleanup completion and risk reduction in a fiscally responsible manner. EM will be given sufficient flexibility by Congress to execute its budget efficiently within established appropriation control points.
- **Waste Incidental to Reprocessing:** EM can proceed with key aspects of its planned tank waste programs consistent with the FY 2005 authorization legislation and current status of the litigation related to waste incidental to reprocessing.
- **New Mission or Responsibilities:** EM will not initiate additional work scope, associated with cleanup of excess facilities from other DOE programs, until there is room within EM's budget based on risk reduction and business case priorities to accomplish this new work scope or the other DOE programs transfer budget target to EM.

In carrying out the program's risk reduction and cleanup mission, EM performs a variety of collaborative activities:

- **Regulatory Compliance:** DOE negotiates and executes environmental compliance and cleanup agreements with the U.S. Environmental Protection Agency and state regulatory agencies, as appropriate. Key parameters such as required cleanup levels and milestones must be negotiated with the appropriate regulators and stakeholders for each site. Compliance with environmental laws and agreements continues to be a major cost driver for the EM program.
- **Defense Nuclear Facilities Safety Board:** EM works with the Board to implement recommendations relating to activities at the Department's nuclear facilities affecting nuclear health and safety.
- **Environmental Management Advisory Board:** EM solicits advice and guidance from the EM Advisory Board on a wide variety of topics, with special emphasis on difficult corporate issues relative to cleanup.
- **EM Site Specific Advisory Boards:** EM solicits advice and guidance on site operations from nine Site Specific Advisory Boards across the EM complex.
- **National Academy of Public Administration (NAPA):** EM works with NAPA on its recommendations regarding organization, managerial and human capital issues.
- **National Academy of Science (NAS):** EM works with the NAS on its recommendations regarding various technical and scientific issues confronting the EM program.

EM also solicits advice and guidance from other external liaison groups, including the National Governors' Association, National Association of Attorney's General, State and Tribal Governments Working Group, Energy Communities Alliance, and the Environmental Council of the States.

Validation and Verification

To validate and verify program performance, EM will conduct various internal and external reviews and audits. EM's programmatic activities are subject to continuing reviews by the Congress, the Government Accountability Office, the Department's Inspector General, the Nuclear Regulatory Commission, the U.S. Environmental Protection Agency, state environmental and health agencies, the Defense Nuclear Facilities Safety Board, and the Department's Office of Engineering and Construction Management. Each year, the Office of Engineering and Construction Management conducts external independent reviews of selected projects. In addition, various Operations/Field Offices commission external independent reviews of site baselines or portions of both operating and construction project baselines. Additionally, EM Headquarters senior management and Field managers conduct quarterly, in-depth reviews of cost, schedule, and scope to ensure projects are on-track and within budget. Headquarters offices conduct routine assessments of baseline performance.

Corporate Performance Measures – EM Totals^a

	Complete Through FY 2009	Cumulative FY 2010 Target	Cumulative FY 2011 Target	Cumulative FY 2012 Target
Geographic Sites Eliminated (number of sites)	88	89	90	91
Plutonium Metal or Oxide packaged for long-term storage (Number of Containers)	5,089	5,089	5,089	5,089
Enriched Uranium packaged for disposition (Number of Containers)	7,629	7,728	7,728	7,728
Plutonium or Uranium Residues packaged for disposition (Kilograms of Bulk)	107,828	107,828	107,828	107,828
Depleted and Other Uranium packaged for disposition (Metric Tons)	14,636	14,636	32,186	65,822
Liquid Waste in Inventory eliminated (Thousands of Gallons)	2,924	3,624	4,424	5,924
Liquid Waste Tanks closed (Number of Tanks)	9	9	11	18
High-Level Waste packaged for final disposition (Number of Containers)	3,070	3,256	3,553	3,677
Spent Nuclear Fuel packaged for final disposition (Metric Tons of Heavy Metal)	2,128	2,128	2,128	2,133
Transuranic Waste shipped for disposal (Cubic meters) - CH	63,456	70,115	79,599	89,874
Transuranic Waste shipped for disposal (Cubic meters) - RH	130	130	407	819
Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	1,065,098	1,070,804	1,080,923	1,090,931
Material Access Areas eliminated (Number of Material Access Areas)	26	30	30	31
Nuclear Facility Completions (Number of Facilities)	93	99	110	112
Radioactive Facility Completions (Number of Facilities)	363	369	390	429
Industrial Facility Completions (Number of Facilities)	1,588	1,623	1,700	1,811
Remediation Complete (Number of Release Sites)	6,788	6,985	7,181	7,394

^a Performance measures are currently being updated.

Life-cycle Costs

As part of its application of DOE Order 413.3A to operating expense-funded cleanup projects, EM identifies contingency that increases the probable project cost with a resulting higher confidence level (from a nominal 50% confidence level to 80% confidence level) that the project can be completed on time at the estimated cost. EM's budget request does not include any contingency funding to support this higher confidence.

The EM program has developed life-cycle estimates with cost and schedule ranges to account for the uncertainty associated with long-term project execution. These ranges have been reviewed independently for reasonableness by the DOE Office of Engineering and Construction Management. These ranges represent EM's best estimate for life-cycle cost. In instances where a project has not been reviewed or is complete, a single point estimate or actual cost is provided. The life-cycle costs represent active projects at EM sites and those sites completed prior to FY 2009 that are transitioning to the Office of Legacy Management or other program landlords for long-term stewardship. In addition, the life-cycle cost ranges include prior year costs beginning in FY 1997 through FY 2009.

ENVIRONMENTAL MANAGEMENT PROGRAM LIFE-CYCLE COST RANGE (Millions of Dollars)		
Site	LCC Total Range	
Argonne National Laboratory-East	\$78	-
Ashtabula	137	-
Brookhaven National Laboratory	435	- 469
Columbus	172	-
Energy Technology Engineering Center	345	- 394
Fernald	3,495	-
Hanford Site	58,523	- 61,285
Headquarters	2,291	-
Idaho National Laboratory	26,248	- 32,881
Inhalation Toxicology Laboratory	11	-
Kansas City Plant	30	-
Laboratory for Energy-Related Health Research	40	-
Lawrence Berkeley National Laboratory	36	-
Lawrence Livermore National Laboratory	330	-
Los Alamos National Laboratory	2,647	- 3,593
Miamisburg	1,945	-
Moab	1,000	- 1,040
Nevada Test Site	2,443	- 2,750
Oak Ridge Reservation	10,078	- 10,553
Office of River Protection	56,784	- 74,687
Other	1,401	- 1,404
Paducah Gaseous Diffusion Plant	10,241	- 17,062
Pantex Plant	208	-
Portsmouth Gaseous Diffusion Plant	9,199	- 16,092
Program Direction	12,080	-
Rocky Flats Environmental Technology Site	9,047	-
Sandia National Laboratory	235	-

ENVIRONMENTAL MANAGEMENT PROGRAM LIFE-CYCLE COST RANGE (Millions of Dollars)			
Site	LCC Total Range		
Savannah River Site	53,286	-	64,120
Stanford Linear Accelerator Center	52	-	54
Technology Development and Deployment	3,073	-	
Waste Isolation Pilot Plant	6,832	-	7,393
West Valley Demonstration Project	1,849	-	1,987
TOTAL EM PROGRAM	\$274,569	-	\$328,974

Site Closure Dates

EM's lifecycle cost estimates reflect a range of site completion dates. This range is shown on the following table. In instances where a project has not been reviewed or is complete, a single point estimate or actual date is provided. Note that the dates in the table are based on fiscal years to conform with the budget cycle. Changes from the FY 2010 Congressional Request are discussed in each site's budget narrative.

ENVIRONMENTAL MANAGEMENT PROJECT SCHEDULE RANGE	
Site	Completion Range
Pantex Plant	2009*
Argonne National Laboratory - East	2009*
Inhalation Toxicology Laboratory	2010
General Electric Vallecitos Nuclear Center	2011
Stanford Linear Accelerator Center	2012**
Separations Process Research Unit	2013 - 2014**
Sandia National Laboratories – NM	2014
Lawrence Livermore National Laboratory – Site 300	2014
West Valley Demonstration Project	2018
Los Alamos National Laboratory	2015
Energy Technology Engineering Center	2018 - 2025
Brookhaven National Laboratory	2018 - 2020**
Oak Ridge Reservation	2021 - 2022
Nevada Test Site Projects	2027 - 2038
Moab	2028
Savannah River Site	2038 - 2040
Idaho National Laboratory	2035 - 2044
Waste Isolation Pilot Plant	2035 - 2039
Paducah Gaseous Diffusion Plant	2040 - 2052
Portsmouth Gaseous Diffusion Plant	2044 - 2052
Hanford Site	2050 - 2062

*Physical completion occurred in FY 2009. Critical Decision 4 paperwork expected to be signed in first quarter, CY 2010.

** With ARRA funding the completion date for these sites are expected to be accelerated to FY 2011.

Facilities Maintenance and Repair

The Department's Facilities Maintenance and Repair activities are tied to its programmatic missions, goals, and objectives. Facilities Maintenance and Repair activities funded by this budget are displayed below.

Direct-Funded Maintenance and Repair^a

	(dollars in thousands)		
		FY 2010	FY 2011
Carlsbad	\$16,189	\$14,483	\$14,465
Oak Ridge	18,314	9,397	6,172
Idaho National Laboratory	32,737	31,103	28,598
Paducah	3,336	3,697	4,283
Portsmouth	8,763	3,398	3,823
Richland Operations Office	50,214	42,796	40,158
Office of River Protection	27,794	27,335	45,622
Savannah River	129,703	133,910	149,782
	\$287,050	\$266,119	\$292,903

Indirect-Funded Maintenance and Repair

	(dollars in thousands)		
	FY 2009	FY 2010	FY 2011
Carlsbad	\$0	\$0	\$0
Oak Ridge	0	0	0
Idaho National Laboratory	0	0	0
Paducah	0	0	0
Portsmouth	0	0	0
Richland Operations Office	0	0	0
Office of River Protection	0	0	0
Savannah River	15,738	16,256	17,108
	\$15,738	\$16,256	\$17,108

^a Data is as of fourth quarter FY 2009.

ANCILLARY TABLES

Detailed Funding Table

(dollars in thousands)

	FY 2009 Current Appropriation	FY 2010 Current Appropriation	FY 2011 Request
Defense Environmental Cleanup			
Closure Sites			
Operating	45,883	41,468	6,375
Hanford Site			
2012 Accelerated Completions			
Operating	476,491	541,367	0
River Corridor and Other Cleanup Operations			
Operating	0	0	545,289
2035 Accelerated Completions			
Operating	490,485	448,713	0
Central Plateau Remediation			
Operating	0	0	423,640
Total, Hanford Site	966,976	990,080	968,929
Idaho National Laboratory			
Operating	389,061	370,468	400,600
Construction:			
06-D-401 / Sodium Bearing Waste Treatment Project, Idaho National Laboratory (INL), Idaho	86,700	93,700	6,500
Total, Idaho National Laboratory	475,761	464,168	407,100
NNSA Sites			
Operating	322,539	284,124	279,373
Oak Ridge			
Operating	262,835	178,768	202,298
Office of River Protection			
Waste Treatment and Immobilization Plant			
Construction:			
01-D-16A / Low Activity Waste Facility, RL	160,000	0	0
01-D-16-A-D / Waste Treatment and Immobilization Plant - Sub-Projects A-D, RL	0	365,000	370,178
01-D-16B / Analytical Laboratory, RL	65,000	0	0
01-D-16C / Balance of Facilities, RL	75,000	0	0
01-D-16D / High Level Waste Facility, RL	125,000	0	0
01-D-16E / Pretreatment Facility, RL	265,000	325,000	370,000
Total, Construction	690,000	690,000	740,178
Tank Farm Activities			
Operating	319,943	408,000	418,000
Total, Office of River Protection	1,009,943	1,098,000	1,158,178
Savannah River Site			
Nuclear Material Stabilization and Disposition			
Operating	361,343	385,310	0
Cleanup and Waste Disposition			
Operating	0	0	18,330
2035 Accelerations			
Operating	129,626	57,068	0
Construction:			
08-D-414 / 08-D-414: Plutonium Preparation Project, Savannah River Site (SRS), Aiken, South Carolina (SR-0011C)	0	6,315	0

(dollars in thousands)

	FY 2009 Current Appropriation	FY 2010 Current Appropriation	FY 2011 Request
Total, 2035 Accelerations	129,626	63,383	0
Site Risk Management Operations			
Operating	0	0	942,518
Construction:			
05-D-405 / Salt Waste Processing Facility, SR	155,524	234,118	256,951
Total, Site Risk Management Operations	155,524	234,118	1,199,469
Tank Farm Activities			
Operating	576,250	527,138	0
Total, Savannah River Site	1,222,743	1,209,949	1,217,799
Waste Isolation Pilot Plant			
Operating	231,661	230,337	220,245
Program Support			
Operating	33,930	34,000	25,143
Program Direction			
Operating	309,807	345,000	323,825
Safeguards and Security			
Operating	266,141	279,437	249,754
Technology Development and Deployment			
Operating	31,415	20,000	32,320
Federal Contribution to the Uranium Enrichment D&D Fund			
Operating	463,000	463,000	496,700
Congressionally Directed Projects			
Operating	17,908	4,000	0
Total, Defense Environmental Cleanup	5,660,542	5,642,331	5,588,039
Non-Defense Environmental Cleanup			
Fast Flux Test Reactor Facility D&D			
Operating	10,755	7,652	3,659
Congressionally Directed Projects			
Operating	4,757	0	0
Gaseous Diffusion Plants			
Operating	48,296	100,885	99,464
Construction:			
02-U-101 / Depleted Uranium Hexafluoride Conversion Project, Paducah, KY & Portsmouth, OH	33,000	0	0
Total, Gaseous Diffusion Plants	81,296	100,885	99,464
Small Sites			
Operating	110,436	88,062	63,966
West Valley Demonstration Project			
Operating	65,500	58,074	58,074
Total, Non-Defense Environmental Cleanup	272,744	254,673	225,163
Uranium Enrichment Decontamination and Decommissioning Fund			
D&D Activities			
Operating	525,503	573,850	730,498
U/Th Reimbursements			
Operating	10,000	0	0
Total, Uranium Enrichment Decontamination and Decommissioning Fund	535,503	573,850	730,498

(dollars in thousands)

	FY 2009 Current Appropriation	FY 2010 Current Appropriation	FY 2011 Request
Total, Environmental Management	6,468,789	6,470,854	6,543,700
Use of Prior Year (Defense Environmental Cleanup)	-4,197	0	0
Use of Prior year (Non-Defense Environmental Cleanup)	-925	0	0
Transfer from Office of Science	-10,000	0	0
D&D Fund Offset	-463,000	-463,000	-496,700
Total, Environmental Management	5,990,667	6,007,854	6,047,000

Funding Summary by Office

(dollars in thousands)

Site	FY 2009 Current Appropriation	FY 2010 Current Appropriation	FY 2011 Request
Carlsbad	231,661	230,337	220,245
Idaho	489,239	469,168	412,000
Oak Ridge	471,668	403,768	432,700
Paducah	161,751	163,937	136,504
Portsmouth	236,215	285,798	463,056
Richland	977,731	997,732	972,588
River Protection	1,009,943	1,098,000	1,158,178
Savannah River	1,222,743	1,209,949	1,217,799
NNSA Sites	324,444	284,124	279,373
Closure Sites	45,883	41,468	6,375
All Other Sites	95,053	83,062	59,066
Safeguards and Security	266,141	279,437	249,754
Headquarters Operations	66,595	38,000	25,143
West Valley Demonstration Project	65,500	58,074	58,074
Technology Development & Deployment	31,415	20,000	32,320
Program Direction	309,807	345,000	323,825
D&D Fund Deposit	463,000	463,000	496,700
Subtotal, Environmental Management	6,468,789	6,470,854	6,543,700
Offsets	-478,122	-463,000	-496,700
Total, Environmental Management	5,990,667	6,007,854	6,047,000

Environmental Management Federal Staffing

(Full-Time Equivalents)

	FY 2009 Current Appropriation	FY 2010 Current Appropriation	FY 2011 Request
Carlsbad	45	50	50
Idaho	69	70	70
Oak Ridge	80	82	82
Portsmouth/Paducah Project Office	47	48	48
Richland	264	275	275
River Protection	134	145	145
Savannah River	331	345	345
Small Sites	32	32	32
Nevada Site Office	24	25	25
NNSA Sites	32	28	28
EM Career Development Corp	39	40	40
Subtotal, Field, Full-Time Equivalents	1,097	1,140	1,140
Headquarters Operations	329	344	344
Consolidated Business Center	175	190	190
Total, Field, Full-Time Equivalents	1,601	1,674	1,674

Funding by Office/Site/Location

(dollars in thousands)

	FY 2009 Current Appropriation	FY 2010 Current Appropriation	FY 2011 Request
Carlsbad			
Carlsbad Field Office	26,909	27,854	28,771
Waste Isolation Pilot Plant	204,752	202,483	191,474
Total, Carlsbad	231,661	230,337	220,245
Idaho			
Idaho National Laboratory	489,239	469,168	412,000
Oak Ridge			
East Tennessee Technology Park	208,938	225,100	230,489
Oak Ridge National Laboratory	129,125	83,300	108,102
Oak Ridge Reservation	95,513	41,868	30,334
Y-12 Plant	38,092	53,500	63,775
Total, Oak Ridge	471,668	403,768	432,700
Paducah			
Paducah Gaseous Diffusion Plant	161,751	163,937	136,504
Portsmouth			
Portsmouth Gaseous Diffusion Plant	236,215	285,798	463,056
Richland			
Hanford Site	958,111	975,792	952,968
Richland Operations Office	19,620	21,940	19,620
Total, Richland	977,731	997,732	972,588
River Protection			
River Protection	1,009,943	1,098,000	1,158,178
Savannah River			
Savannah River National Laboratory	58,500	61,480	61,000
Savannah River Operations Office	19,800	18,300	18,330
Savannah River Site	1,144,443	1,130,169	1,138,469
Total, Savannah River	1,222,743	1,209,949	1,217,799
NNSA Sites			
California Site Support	0	238	238
Lawrence Livermore National Laboratory	688	910	635
Los Alamos National Laboratory	224,639	196,500	196,953
Nevada Test Site	75,674	65,674	66,000
NNSA Service Center	1,443	2,938	3,047
Pantex Plant	1,000	0	0
Sandia National Laboratory	3,000	2,864	0
Separations Process Research Unit	18,000	15,000	12,500
Total, NNSA Sites	324,444	284,124	279,373

(dollars in thousands)

	FY 2009 Current Appropriation	FY 2010 Current Appropriation	FY 2011 Request
Closure Sites			
Consolidated Business Center	13,209	8,225	6,375
Fernald	2,100	0	0
Miamisburg	30,574	33,243	0
Total, Closure Sites	45,883	41,468	6,375
All Other Sites			
Argonne National Laboratory-East	19,479	10,000	0
Brookhaven National Laboratory	8,433	15,000	13,861
California Site Support	187	262	0
Consolidated Business Center	1,100	1,200	0
Energy Technology Engineering Center	15,000	10,500	10,679
Inhalation Toxicology Laboratory	272	0	0
Moab	40,699	39,000	31,000
SLAC National Accelerator Laboratory	4,883	7,100	3,526
Tuba City	5,000	0	0
Total, All Other Sites	95,053	83,062	59,066
Safeguards and Security			
Carlsbad Field Office	5,124	4,644	4,755
East Tennessee Technology Park	27,020	32,400	17,300
Hanford Site	79,765	82,771	69,234
Paducah Gaseous Diffusion Plant	8,196	8,190	8,496
Portsmouth Gaseous Diffusion Plant	4,500	17,509	15,979
Savannah River Site	138,736	132,064	132,064
West Valley Demonstration Project	2,800	1,859	1,926
Total, Safeguards and Security	266,141	279,437	249,754
Headquarters Operations			
Congressionally Directed Projects	22,665	4,000	0
Headquarters	43,930	34,000	25,143
Total, Headquarters Operations	66,595	38,000	25,143
West Valley Demonstration Project			
West Valley Demonstration Project	65,500	58,074	58,074
Technology Development & Deployment			
Technology Development and Deployment	31,415	20,000	32,320
Program Direction			
Program Direction	309,807	345,000	323,825
D&D Fund Deposit			
D&D Fund Deposit	463,000	463,000	496,700
Total, Environmental Management			
Use of Prior Year (Defense Environmental Cleanup)	-4,197	0	0
Use of Prior year (Non-Defense Environmental Cleanup)	-925	0	0
Transfer from Office of Science	-10,000	0	0
D&D Fund Offset	-463,000	-463,000	-496,700
Total, Environmental Management	5,990,667	6,007,854	6,047,000

Corporate Measures Totals by Site ^a

	Complete Through 2008	Complete Through 2009	Targeted Completion Through 2010	Targeted Completion Through 2011	Life-cycle Estimates
<u>All Other Sites</u>					
Ames Laboratory					
Geographic Sites Eliminated (number of sites)	1	1	1	1	1
Argonne National Laboratory-East					
Geographic Sites Eliminated (number of sites)	0	1	1	1	1
Radioactive Facility Completions (Number of Facilities)	69	78	78	78	80
Remediation Complete (Number of Release Sites)	443	443	443	443	443
Transuranic Waste shipped for disposal (Cubic meters) - CH	0	0	0	0	30
Transuranic Waste shipped for disposal (Cubic meters) - RH	0	0	0	0	22
Brookhaven National Laboratory					
Geographic Sites Eliminated (number of sites)	0	0	0	0	1
Nuclear Facility Completions (Number of Facilities)	0	0	1	1	1
Radioactive Facility Completions (Number of Facilities)	10	10	11	11	11
Remediation Complete (Number of Release Sites)	77	77	77	77	77
California Site Support					
Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	272	272	272	272	272
Remediation Complete (Number of Release Sites)	3	3	3	3	3
Chicago Operations Office					
Geographic Sites Eliminated (number of sites)	3	3	3	3	3
Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	537	537	537	537	537
Remediation Complete (Number of Release Sites)	30	30	30	30	30
Energy Technology Engineering Center					
Geographic Sites Eliminated (number of sites)	0	0	0	0	1
Industrial Facility Completions (Number of Facilities)	24	24	24	24	26
Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	1,055	1,055	1,055	1,055	1,080
Radioactive Facility Completions (Number of Facilities)	4	4	4	4	6
Remediation Complete (Number of Release Sites)	4	4	4	4	14

^a Life-cycle estimates for release sites, facilities, and high-level waste containers include pre-1997 actuals. Quantities for all other measures except low-level and mixed low-level waste disposal begin in 1997. Low-level and mixed low-level waste disposal begins in 1998.

	Complete Through 2008	Complete Through 2009	Targeted Completion Through 2010	Targeted Completion Through 2011	Life-cycle Estimates
Fermi National Accelerator Laboratory					
Geographic Sites Eliminated (number of sites)	1	1	1	1	1
General Atomics					
Geographic Sites Eliminated (number of sites)	1	1	1	1	1
Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	1,716	1,716	1,716	1,716	1,716
Remediation Complete (Number of Release Sites)	2	2	2	2	2
Spent Nuclear Fuel packaged for final disposition (Metric Tons of Heavy Metal)	1	1	1	1	1
General Electric					
Geographic Sites Eliminated (number of sites)	0	0	0	1	1
Geothermal Test Facility					
Geographic Sites Eliminated (number of sites)	1	1	1	1	1
Grand Junction					
Geographic Sites Eliminated (number of sites)	2	2	2	2	2
Inhalation Toxicology Laboratory					
Geographic Sites Eliminated (number of sites)	0	0	1	1	1
Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	359	359	359	359	359
Remediation Complete (Number of Release Sites)	9	9	9	9	9
Laboratory for Energy-Related Health Research					
Geographic Sites Eliminated (number of sites)	1	1	1	1	1
Industrial Facility Completions (Number of Facilities)	1	1	1	1	1
Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	944	944	944	944	944
Remediation Complete (Number of Release Sites)	16	16	16	16	16
Lawrence Berkeley National Laboratory					
Geographic Sites Eliminated (number of sites)	1	1	1	1	1
Remediation Complete (Number of Release Sites)	181	181	181	181	181
Moab					
Geographic Sites Eliminated (number of sites)	0	0	0	0	1
New Mexico Site Support					
Geographic Sites Eliminated (number of sites)	5	5	5	5	5
Princeton Plasma Physics Laboratory					
Geographic Sites Eliminated (number of sites)	1	1	1	1	1
South Valley					
Geographic Sites Eliminated (number of sites)	1	1	1	1	1
Stanford Linear Accelerator Center					
Geographic Sites Eliminated (number of sites)	0	0	0	0	1
Remediation Complete (Number of Release Sites)	17	17	32	51	51

	Complete Through 2008	Complete Through 2009	Targeted Completion Through 2010	Targeted Completion Through 2011	Life-cycle Estimates
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Geographic Sites Eliminated (number of sites)	24	24	24	24	24
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Oak Ridge

East Tennessee Technology Park

Industrial Facility Completions (Number of Facilities)	288	316	338	355	595
Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	38,250	38,346	38,346	38,346	39,676
Nuclear Facility Completions (Number of Facilities)	6	6	6	6	8
Radioactive Facility Completions (Number of Facilities)	8	8	10	10	30
Remediation Complete (Number of Release Sites)	91	103	122	123	167

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Geographic Sites Eliminated (number of sites)	25	25	25	25	25
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Oak Ridge National Laboratory

Industrial Facility Completions (Number of Facilities)	7	7	7	7	28
Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	366	811	1,160	1,487	4,518
Nuclear Facility Completions (Number of Facilities)	0	0	0	0	15
Radioactive Facility Completions (Number of Facilities)	3	3	3	3	31
Remediation Complete (Number of Release Sites)	80	80	80	80	177
Transuranic Waste shipped for disposal (Cubic meters) - CH	0	0	0	0	24
Transuranic Waste shipped for disposal (Cubic meters) - RH	0	0	0	0	198

Oak Ridge Operations Office

Geographic Sites Eliminated (number of sites)	1	1	1	1	1
Industrial Facility Completions (Number of Facilities)	3	3	3	3	3
Remediation Complete (Number of Release Sites)	84	84	97	97	97

Oak Ridge Reservation

Geographic Sites Eliminated (number of sites)	1	1	1	1	2
Industrial Facility Completions (Number of Facilities)	2	2	2	2	2
Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	60,509	61,505	62,191	64,481	78,198
Nuclear Facility Completions (Number of Facilities)	2	2	2	2	2
Radioactive Facility Completions (Number of Facilities)	15	15	15	15	15
Remediation Complete (Number of Release Sites)	112	113	114	114	114
Transuranic Waste shipped for disposal (Cubic meters) - CH	16	81	81	81	1,449
Transuranic Waste shipped for disposal (Cubic meters) - RH	0	5	5	5	550

	Complete Through 2008	Complete Through 2009	Targeted Completion Through 2010	Targeted Completion Through 2011	Life-cycle Estimates
Weldon Spring Site					
Geographic Sites Eliminated (number of sites)	1	1	1	1	1
Y-12 Plant					
Industrial Facility Completions (Number of Facilities)	1	1	1	1	7
Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	16,252	16,252	16,252	16,252	59,290
Remediation Complete (Number of Release Sites)	28	28	28	28	138
<u>NNSA Sites</u>					
Kansas City Plant					
Geographic Sites Eliminated (number of sites)	1	1	1	1	1
Remediation Complete (Number of Release Sites)	43	43	43	43	43
Lawrence Livermore National Laboratory					
Geographic Sites Eliminated (number of sites)	1	1	1	1	2
Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	2,766	2,766	2,766	2,766	2,766
Remediation Complete (Number of Release Sites)	194	194	194	194	194
Transuranic Waste shipped for disposal (Cubic meters) - CH	125	125	125	125	125
Los Alamos National Laboratory					
Geographic Sites Eliminated (number of sites)	0	0	0	0	1
Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	5,993	7,308	7,533	8,810	10,247
Radioactive Facility Completions (Number of Facilities)	0	0	0	1	105
Remediation Complete (Number of Release Sites)	1,417	1,426	1,456	1,548	2,089
Transuranic Waste shipped for disposal (Cubic meters) - CH	2,095	2,350	3,309	6,472	12,866
Transuranic Waste shipped for disposal (Cubic meters) - RH	0	16	16	16	94
Nevada Test Site					
Geographic Sites Eliminated (number of sites)	0	0	0	0	1
Remediation Complete (Number of Release Sites)	1,017	1,061	1,062	1,065	2,037
Transuranic Waste shipped for disposal (Cubic meters) - CH	449	1,246	1,246	1,246	1,246
New Mexico Site Support					
Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	1,319	1,319	1,319	1,319	1,319
Remediation Complete (Number of Release Sites)	155	155	155	155	155
NNSA Service Center					
Geographic Sites Eliminated (number of sites)	0	0	0	0	1
Nuclear Facility Completions (Number of Facilities)	0	0	0	1	4
Remediation Complete (Number of Release Sites)	0	0	4	5	6
Transuranic Waste shipped for disposal (Cubic meters) - CH	0	0	0	50	50

	Complete Through 2008	Complete Through 2009	Targeted Completion Through 2010	Targeted Completion Through 2011	Life-cycle Estimates
Offsites					
Geographic Sites Eliminated (number of sites)	3	3	3	3	3
Remediation Complete (Number of Release Sites)	53	53	53	53	53
Pantex Plant					
Geographic Sites Eliminated (number of sites)	0	1	1	1	1
Industrial Facility Completions (Number of Facilities)	4	4	4	4	4
Remediation Complete (Number of Release Sites)	237	237	237	237	237
Sandia National Laboratory					
Geographic Sites Eliminated (number of sites)	1	1	1	1	2
Radioactive Facility Completions (Number of Facilities)	1	1	1	1	1
Remediation Complete (Number of Release Sites)	263	263	264	264	264
Idaho					
Argonne National Laboratory - West					
Remediation Complete (Number of Release Sites)	37	37	37	37	37
Argonne National Laboratory-West					
Geographic Sites Eliminated (number of sites)	1	1	1	1	1
Idaho National Laboratory					
Geographic Sites Eliminated (number of sites)	0	0	0	0	1
Enriched Uranium packaged for disposition (Number of Containers)	1,586	1,586	1,586	1,586	1,586
High-Level Waste packaged for final disposition (Number of Containers)	0	0	0	0	6,660
Industrial Facility Completions (Number of Facilities)	138	143	143	143	255
Liquid Waste in Inventory eliminated (Thousands of Gallons)	0	0	0	100	900
Liquid Waste Tanks closed (Number of Tanks)	7	7	7	7	11
Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	66,599	67,688	69,518	71,568	109,114
Material Access Areas eliminated (Number of Material Access Areas)	1	1	1	1	1
Nuclear Facility Completions (Number of Facilities)	24	28	28	28	92
Radioactive Facility Completions (Number of Facilities)	32	35	35	35	68
Remediation Complete (Number of Release Sites)	240	250	329	333	366
Spent Nuclear Fuel packaged for final disposition (Metric Tons of Heavy Metal)	0	0	0	0	253
Transuranic Waste shipped for disposal (Cubic meters) - CH	26,798	35,423	41,123	46,823	83,155
Transuranic Waste shipped for disposal (Cubic meters) - RH	72	92	92	92	117
Idaho Operations Office					
Remediation Complete (Number of Release Sites)	233	233	233	233	233

	Complete Through 2008	Complete Through 2009	Targeted Completion Through 2010	Targeted Completion Through 2011	Life-cycle Estimates
Maxey Flats					
Geographic Sites Eliminated (number of sites)	1	1	1	1	1
Monticello Remedial Action Project					
Geographic Sites Eliminated (number of sites)	1	1	1	1	1
Pinellas Plant					
Geographic Sites Eliminated (number of sites)	1	1	1	1	1
<u>Closure Sites</u>					
Ashtabula					
Geographic Sites Eliminated (number of sites)	1	1	1	1	1
Industrial Facility Completions (Number of Facilities)	7	7	7	7	7
Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	3,707	3,707	3,707	3,707	3,707
Radioactive Facility Completions (Number of Facilities)	28	28	28	28	28
Remediation Complete (Number of Release Sites)	3	3	3	3	3
Columbus					
Geographic Sites Eliminated (number of sites)	2	2	2	2	2
Nuclear Facility Completions (Number of Facilities)	1	1	1	1	1
Radioactive Facility Completions (Number of Facilities)	14	14	14	14	14
Remediation Complete (Number of Release Sites)	2	2	2	2	2
Fernald					
Geographic Sites Eliminated (number of sites)	1	1	1	1	1
Industrial Facility Completions (Number of Facilities)	1	1	1	1	1
Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	7,085	7,085	7,085	7,085	7,085
Radioactive Facility Completions (Number of Facilities)	29	29	29	29	29
Remediation Complete (Number of Release Sites)	6	6	6	6	6
Miamisburg					
Geographic Sites Eliminated (number of sites)	1	1	1	1	1
Depleted and Other Uranium packaged for disposition (Metric Tons)	0	0	0	0	0
Industrial Facility Completions (Number of Facilities)	116	116	116	116	116
Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	3,947	3,947	3,947	3,947	3,947
Nuclear Facility Completions (Number of Facilities)	8	8	8	8	8
Radioactive Facility Completions (Number of Facilities)	11	11	11	11	11
Remediation Complete (Number of Release Sites)	178	178	178	178	178
Rocky Flats Environmental Technology Site					
Geographic Sites Eliminated (number of sites)	1	1	1	1	1
Industrial Facility Completions (Number of	317	317	317	317	317

	Complete Through 2008	Complete Through 2009	Targeted Completion Through 2010	Targeted Completion Through 2011	Life-cycle Estimates
Facilities)					
Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	602,188	602,188	602,188	602,188	602,188
Material Access Areas eliminated (Number of Material Access Areas)	7	7	7	7	7
Nuclear Facility Completions (Number of Facilities)	6	6	6	6	6
Plutonium Metal or Oxide packaged for long-term storage (Number of Containers)	1,895	1,895	1,895	1,895	1,895
Plutonium or Uranium Residues packaged for disposition (Kilograms of Bulk)	103,901	103,901	103,901	103,901	103,901
Radioactive Facility Completions (Number of Facilities)	54	54	54	54	54
Remediation Complete (Number of Release Sites)	360	360	360	360	360
Transuranic Waste shipped for disposal (Cubic meters) - CH	15,036	15,036	15,036	15,036	15,036
<u>West Valley Demonstration Project</u>					
West Valley Demonstration Project					
Geographic Sites Eliminated (number of sites)	0	0	0	0	1
High-Level Waste packaged for final disposition (Number of Containers)	275	275	275	275	275
Industrial Facility Completions (Number of Facilities)	13	13	14	29	29
Liquid Waste in Inventory eliminated (Thousands of Gallons)	814	814	814	814	814
Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	26,931	27,986	27,986	29,899	29,899
Nuclear Facility Completions (Number of Facilities)	3	3	4	12	14
Radioactive Facility Completions (Number of Facilities)	4	4	4	6	13
Transuranic Waste shipped for disposal (Cubic meters) - CH	0	0	0	571	1,142
Transuranic Waste shipped for disposal (Cubic meters) - RH	0	0	0	277	555
<u>Portsmouth</u>					
Portsmouth Gaseous Diffusion Plant					
Geographic Sites Eliminated (number of sites)	0	0	0	0	1
Depleted and Other Uranium packaged for disposition (Metric Tons)	0	0	0	9,800	252,800
Industrial Facility Completions (Number of Facilities)	7	8	8	8	121
Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	31,907	35,754	35,754	35,754	35,754
Nuclear Facility Completions (Number of Facilities)	0	0	0	0	13
Radioactive Facility Completions (Number of Facilities)	7	7	7	7	27
Remediation Complete (Number of Release Sites)	150	150	150	150	151
<u>Paducah</u>					
Paducah Gaseous Diffusion Plant					
Geographic Sites Eliminated (number of sites)	0	0	0	0	1
Depleted and Other Uranium packaged for	0	0	0	7,750	457,750

	Complete Through 2008	Complete Through 2009	Targeted Completion Through 2010	Targeted Completion Through 2011	Life-cycle Estimates
disposition (Metric Tons)					
Enriched Uranium packaged for disposition (Number of Containers)	0	0	0	0	182
Industrial Facility Completions (Number of Facilities)	12	17	17	19	172
Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	15,642	19,150	19,896	20,642	26,608
Nuclear Facility Completions (Number of Facilities)	0	0	0	0	19
Radioactive Facility Completions (Number of Facilities)	2	2	2	3	22
Remediation Complete (Number of Release Sites)	94	94	109	125	217
<u>Savannah River</u>					
Savannah River Site					
Geographic Sites Eliminated (number of sites)	0	0	0	0	1
Depleted and Other Uranium packaged for disposition (Metric Tons)	9,974	11,536	11,536	11,536	23,182
Enriched Uranium packaged for disposition (Number of Containers)	3,004	3,085	3,184	3,184	3,184
High-Level Waste packaged for final disposition (Number of Containers)	2,599	2,795	2,981	3,278	6,300
Industrial Facility Completions (Number of Facilities)	232	232	232	232	759
Liquid Waste in Inventory eliminated (Thousands of Gallons)	1,174	2,110	2,810	3,510	33,100
Liquid Waste Tanks closed (Number of Tanks)	2	2	2	4	51
Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	100,620	105,564	105,564	105,564	137,579
Material Access Areas eliminated (Number of Material Access Areas)	2	2	2	2	3
Nuclear Facility Completions (Number of Facilities)	11	11	11	11	191
Plutonium Metal or Oxide packaged for long-term storage (Number of Containers)	919	919	919	919	919
Plutonium or Uranium Residues packaged for disposition (Kilograms of Bulk)	490	490	490	490	490
Radioactive Facility Completions (Number of Facilities)	8	8	8	8	40
Remediation Complete (Number of Release Sites)	361	369	369	369	515
Spent Nuclear Fuel packaged for final disposition (Metric Tons of Heavy Metal)	3	3	3	3	40
Transuranic Waste shipped for disposal (Cubic meters) - CH	5,691	6,165	6,165	6,165	15,590
Transuranic Waste shipped for disposal (Cubic meters) - RH	0	17	17	17	68
<u>Carlsbad</u>					
Waste Isolation Pilot Plant					
Geographic Sites Eliminated (number of sites)	0	0	0	0	1
<u>Richland</u>					
Hanford Site					
Geographic Sites Eliminated (number of sites)	0	0	0	0	1
Depleted and Other Uranium packaged for	3,100	3,100	3,100	3,100	3,100

	Complete Through 2008	Complete Through 2009	Targeted Completion Through 2010	Targeted Completion Through 2011	Life-cycle Estimates
disposition (Metric Tons)					
Enriched Uranium packaged for disposition (Number of Containers)	2,958	2,958	2,958	2,958	2,958
Industrial Facility Completions (Number of Facilities)	336	376	388	431	1,069
Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	47,213	48,572	48,572	48,572	51,450
Material Access Areas eliminated (Number of Material Access Areas)	1	16	20	20	20
Nuclear Facility Completions (Number of Facilities)	28	28	32	34	82
Plutonium Metal or Oxide packaged for long-term storage (Number of Containers)	2,275	2,275	2,275	2,275	2,275
Plutonium or Uranium Residues packaged for disposition (Kilograms of Bulk)	3,437	3,437	3,437	3,437	3,437
Radioactive Facility Completions (Number of Facilities)	49	52	55	72	346
Remediation Complete (Number of Release Sites)	468	479	498	558	1,702
Spent Nuclear Fuel packaged for final disposition (Metric Tons of Heavy Metal)	2,124	2,124	2,124	2,124	2,124
Transuranic Waste shipped for disposal (Cubic meters) - CH	3,030	3,030	3,030	3,030	24,580
Transuranic Waste shipped for disposal (Cubic meters) - RH	0	0	0	0	858
<u>River Protection</u>					
River Protection					
High-Level Waste packaged for final disposition (Number of Containers)	0	0	0	0	9,667
Industrial Facility Completions (Number of Facilities)	0	0	0	0	128
Liquid Waste in Inventory eliminated (Thousands of Gallons)	0	0	0	0	54,000
Liquid Waste Tanks closed (Number of Tanks)	0	0	0	0	177
Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	7,952	10,267	12,137	13,653	197,832
Nuclear Facility Completions (Number of Facilities)	0	0	0	0	18
Radioactive Facility Completions (Number of Facilities)	0	0	0	0	114
Remediation Complete (Number of Release Sites)	5	5	5	5	278
Transuranic Waste shipped for disposal (Cubic meters) - CH	0	0	0	0	1,555
Transuranic Waste shipped for disposal (Cubic meters) - RH	0	0	0	0	4,410

Corporate Measures Totals by Site (Funded by ARRA Only)

Complete Through 2009	Complete Through 2010	Targeted Completion Through 2011
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All Other Sites

Argonne National Laboratory-East

Radioactive Facility Completions (Number of Facilities)	0	0	2
Transuranic Waste shipped for disposal (Cubic meters) - CH	0	13	30
Transuranic Waste shipped for disposal (Cubic meters) - RH	0	10	22

Energy Technology Engineering Center

Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	0	10	25
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Brookhaven National Laboratory

Geographic Sites Eliminated (number of sites)	0	0	1
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Stanford Linear Accelerator Center

Geographic Sites Eliminated (number of sites)	0	0	1
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Oak Ridge

Oak Ridge National Laboratory

Industrial Facility Completions (Number of Facilities)	0	3	4
Radioactive Facility Completions (Number of Facilities)	0	4	5
Remediation Complete (Number of Release Sites)	0	0	1
Transuranic Waste shipped for disposal (Cubic meters) - CH	0	0	192

Oak Ridge Reservation

Transuranic Waste shipped for disposal (Cubic meters) - CH	0	822	1,277
Transuranic Waste shipped for disposal (Cubic meters) - RH	0	74	209

Y-12 Plant

Industrial Facility Completions (Number of Facilities)	0	0	5
Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	415	5,096	42,800
Remediation Complete (Number of Release Sites)	0	0	1

NNSA Sites

Los Alamos National Laboratory

Radioactive Facility Completions (Number of Facilities)	1	16	20
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	Complete Through 2009	Complete Through 2010	Targeted Completion Through 2011
Remediation Complete (Number of Release Sites)	0	0	1
Nevada Test Site			
Remediation Complete (Number of Release Sites)	0	0	1
NNSA Service Center			
Separations Process Research Unit			
Geographic Sites Eliminated (number of sites)	0	0	1
Nuclear Facility Completions (Number of Facilities)	0	0	3
Remediation Complete (Number of Release Sites)	0	0	1
<u>Idaho</u>			
Idaho National Laboratory			
Industrial Facility Completions (Number of Facilities)	11	23	35
Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	1,397	1,752	1,752
Nuclear Facility Completions (Number of Facilities)	8	18	31
Radioactive Facility Completions (Number of Facilities)	3	11	23
Transuranic Waste shipped for disposal (Cubic meters) - CH	0	750	1,500
Transuranic Waste shipped for disposal (Cubic meters) - RH	0	7	25
<u>West Valley Demonstration Project</u>			
West Valley Demonstration Project			
Radioactive Facility Completions (Number of Facilities)	0	0	1
<u>Portsmouth</u>			
Portsmouth Gaseous Diffusion Plant			
Industrial Facility Completions (Number of Facilities)	0	11	11
Radioactive Facility Completions (Number of Facilities)	0	1	1
<u>Paducah</u>			
Paducah Gaseous Diffusion Plant			
Nuclear Facility Completions (Number of Facilities)	0	0	1
Radioactive Facility Completions (Number of Facilities)	0	0	1
Remediation Complete (Number of Release Sites)	0	0	14
<u>Savannah River</u>			
Savannah River Site			
Depleted and Other Uranium packaged for disposition (Metric Tons)	0	11,646	11,646
Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	2,392	15,326	25,629
Transuranic Waste shipped for disposal (Cubic meters) - CH	180	919	2,756

	Complete Through 2009	Complete Through 2010	Targeted Completion Through 2011
Radioactive Facility Completions (Number of Facilities)	0	0	16
Transuranic Waste shipped for disposal (Cubic meters) - RH	17	22	39
Industrial Facility Completions (Number of Facilities)	0	1	2
Remediation Complete (Number of Release Sites)	0	0	9
<u>Richland</u>			
Hanford Site			
Industrial Facility Completions (Number of Facilities)	1	17	41
Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	264	1,102	1,874
Nuclear Facility Completions (Number of Facilities)	0	1	2
Radioactive Facility Completions (Number of Facilities)	2	11	18
Remediation Complete (Number of Release Sites)	3	33	65
Transuranic Waste shipped for disposal (Cubic meters) - CH	0	643	2,468

Lifecycle Costs by Program Baseline Summary (PBS)

Thousands of Dollars

Site	PBS Field Code	PBS Name	Prior Costs FY 97-2009	FY10 and Remaining Cost (Low Range)	FY10 and Remaining Cost (High Range)	Lifecycle Cost (Low Range)	Lifecycle Cost (High Range)
Argonne National Laboratory-East	CH-ANLE-0030	Soil and Water Remediation-Argonne National Laboratory-East	30,171	0	0	30,171	30,171
Argonne National Laboratory-East	CH-ANLE-0040	Nuclear Facility D&D-Argonne National Laboratory-East	47,809	0	0	47,809	47,809
Argonne National Laboratory-East Total			77,980	0	0	77,980	77,980
Ashtabula	OH-AB-0030	Soil and Water Remediation-Ashtabula	137,340	0	0	137,340	137,340
Ashtabula Total			137,340	0	0	137,340	137,340
Brookhaven National Laboratory	BRNL-0030	Soil and Water Remediation-Brookhaven National Laboratory	230,027	36,822	36,822	266,849	266,849
Brookhaven National Laboratory	BRNL-0040	Nuclear Facility D&D-Brookhaven Graphite Research Reactor	92,019	18,120	25,311	110,139	117,330
Brookhaven National Laboratory	BRNL-0041	Nuclear Facility D&D-High Flux Beam Reactor	33,316	21,846	48,454	55,162	81,770
Brookhaven National Laboratory	BRNL-0100	Brookhaven Community and Regulatory Support	2,595	0	0	2,595	2,595
Brookhaven National Laboratory Total			357,957	76,788	110,587	434,745	468,544
Columbus	OH-CL-0040	Nuclear Facility D&D-West Jefferson	171,771	0	0	171,771	171,771
Columbus Total			171,771	0	0	171,771	171,771
Energy Technology Engineering Center	CBC-ETEC-0040	Nuclear Facility D&D-Energy Technology Engineering Center	217,047	127,556	176,855	344,603	393,902
Energy Technology Engineering Center Total			217,047	127,556	176,855	344,603	393,902
Fernald	OH-FN-0013	Solid Waste Stabilization and Disposition- Fernald	1,626,711	0	0	1,626,711	1,626,711
Fernald	OH-FN-0020	Safeguards and Security-Fernald	15,509	0	0	15,509	15,509
Fernald	OH-FN-0030	Soil and Water Remediation-Fernald	1,326,767	25,989	25,989	1,352,756	1,352,756
Fernald	OH-FN-0050	Non-Nuclear Facility D&D-Fernald	226,037	0	0	226,037	226,037

Lifecycle Costs by Program Baseline Summary (PBS)

Thousands of Dollars

Site	PBS Field Code	PBS Name	Prior Costs FY 97-2009	FY10 and Remaining Cost (Low Range)	FY10 and Remaining Cost (High Range)	Lifecycle Cost (Low Range)	Lifecycle Cost (High Range)
Fernald	OH-FN-0100	Fernald Post-Closure Administration	0	260,536	260,536	260,536	260,536
Fernald	OH-FN-0101	Fernald Community and Regulatory Support	13,716	0	0	13,716	13,716
Fernald Total			3,208,740	286,525	286,525	3,495,265	3,495,265
Hanford Site	HQ-SNF-0012X-RL	SNF Stabilization and Disposition-Storage Operations Awaiting Geologic Repository	2,784	0	0	2,784	2,784
Hanford Site	RL-0011	NM Stabilization and Disposition-PFP	1,545,166	1,908,539	1,937,900	3,453,705	3,483,066
Hanford Site	RL-0012	SNF Stabilization and Disposition	2,171,395	802,467	829,085	2,973,862	3,000,480
Hanford Site	RL-0013C	Solid Waste Stabilization & Disposition	1,846,810	11,993,450	13,298,694	13,840,260	15,145,504
Hanford Site	RL-0020	Safeguards and Security	523,799	3,061,131	3,061,131	3,584,930	3,584,930
Hanford Site	RL-0030	Soil and Water Remediation-Groundwater/Vadose Zone	759,268	7,296,268	7,477,872	8,055,536	8,237,140
Hanford Site	RL-0040	Nuclear Facility D&D-Remainder of Hanford	1,163,064	17,888,338	18,881,900	19,051,402	20,044,964
Hanford Site	RL-0041	Nuclear Facility D&D-River Corridor Closure Project	2,023,942	2,876,300	3,034,900	4,900,242	5,058,842
Hanford Site	RL-0042	Nuclear Facility D&D-Fast Flux Test Facility Project	294,399	952,729	1,020,004	1,247,128	1,314,403
Hanford Site	RL-0043	HAMMER Facility	7,426	0	0	7,426	7,426
Hanford Site	RL-0044	B-Reactor Museum	1,876	0	0	1,876	1,876
Hanford Site	RL-0080	Operate Waste Disposal Facility	70,659	0	0	70,659	70,659
Hanford Site	RL-0100	Richland Community and Regulatory Support	180,302	1,023,906	1,023,906	1,204,208	1,204,208
Hanford Site	RL-0900	Pre-2004 Completions	128,842	0	0	128,842	128,842
Hanford Site Total			10,719,732	47,803,128	50,565,392	58,522,860	61,285,124
Headquarters	HQ-MS-0100	Policy, Management, and Technical Support	695,324	892,679	892,679	1,588,003	1,588,003
Headquarters	HQ-UR-0100	Reimbursements to Uranium/Thorium Licensees	411,849	291,398	291,398	703,247	703,247
Headquarters Total			1,107,173	1,184,077	1,184,077	2,291,250	2,291,250

Lifecycle Costs by Program Baseline Summary (PBS)

Thousands of Dollars

Site	PBS Field Code	PBS Name	Prior Costs FY 97-2009	FY10 and Remaining Cost (Low Range)	FY10 and Remaining Cost (High Range)	Lifecycle Cost (Low Range)	Lifecycle Cost (High Range)
Idaho National Laboratory	CH-ANLW-0030	Soil and Water Remediation-Argonne National Laboratory-West	8,245	0	0	8,245	8,245
Idaho National Laboratory	HQ-SNF-0012X	SNF Stabilization and Disposition-Storage Operations Awaiting Geologic Repository	60,089	0	0	60,089	60,089
Idaho National Laboratory	HQ-SNF-0012X-ID	SNF Stabilization and Disposition-Storage Operations Awaiting Geologic Repository	18,995	0	0	18,995	18,995
Idaho National Laboratory	HQ-SNF-0012Y	SNF Stabilization and Disposition- New/Upgraded Facilities Awaiting Geologic Repository	66,844	0	0	66,844	66,844
Idaho National Laboratory	ID-0011	NM Stabilization and Disposition	19,204	0	23,000	19,204	42,204
Idaho National Laboratory	ID-0012B-D	SNF Stabilization and Disposition-2012 (Defense)	453,824	67,800	227,530	521,624	681,354
Idaho National Laboratory	ID-0012B-N	SNF Stabilization and Disposition-2012 (Non-Defense)	23,507	0	0	23,507	23,507
Idaho National Laboratory	ID-0012C	SNF Stabilization and Disposition-2035	45,651	4,354,919	5,312,459	4,400,570	5,358,110
Idaho National Laboratory	ID-0013	Solid Waste Stabilization and Disposition	2,154,939	1,061,969	1,715,969	3,216,908	3,870,908
Idaho National Laboratory	ID-0014B	Radioactive Liquid Tank Waste Stabilization and Disposition-2012	1,544,934	297,300	469,300	1,842,234	2,014,234
Idaho National Laboratory	ID-0014B-T	Radioactive Liquid Tank Waste Stabilization and Disposition-2012 (T)	71,091	0	0	71,091	71,091
Idaho National Laboratory	ID-0014C	Radioactive Liquid Tank Waste Stabilization and Disposition-2035	35,498	6,679,752	9,450,958	6,715,250	9,486,456
Idaho National Laboratory	ID-0030B	Soil and Water Remediation-2012	1,249,311	297,265	338,205	1,546,576	1,587,516
Idaho National Laboratory	ID-0030C	Soil and Water Remediation-2035	7,198	4,446,501	6,111,071	4,453,699	6,118,269
Idaho National Laboratory	ID-0040B	Nuclear Facility D&D-2012	398,072	432,700	438,650	830,772	836,722
Idaho National Laboratory	ID-0040C	Nuclear Facility D&D-2035	0	1,783,127	1,967,681	1,783,127	1,967,681
Idaho National Laboratory	ID-0050B	Non-Nuclear Facility D&D-2012	114,910	31,700	31,700	146,610	146,610

Lifecycle Costs by Program Baseline Summary (PBS)							
Thousands of Dollars							
Site	PBS Field Code	PBS Name	Prior Costs FY 97-2009	FY10 and Remaining Cost (Low Range)	FY10 and Remaining Cost (High Range)	Lifecycle Cost (Low Range)	Lifecycle Cost (High Range)
Idaho National Laboratory	ID-0100	Idaho Community and Regulatory Support	62,279	149,940	149,940	212,219	212,219
Idaho National Laboratory	ID-0900	Pre-2004 Completions	310,261	0	0	310,261	310,261
Idaho National Laboratory Total			6,644,852	19,602,973	26,236,463	26,247,825	32,881,315
Inhalation Toxicology Laboratory	CBC-ITL-0030	Soil and Water Remediation-Inhalation Toxicology Laboratory	11,403	0	0	11,403	11,403
Inhalation Toxicology Laboratory	VL-ITL-0030	Soil and Water Remediation-Inhalation Toxicology Laboratory	13	0	0	13	13
Inhalation Toxicology Laboratory Total			11,416	0	0	11,416	11,416
Kansas City Plant	VL-KCP-0030	Soil and Water Remediation-Kansas City Plant	30,277	0	0	30,277	30,277
Kansas City Plant Total			30,277	0	0	30,277	30,277
Laboratory for Energy- Related Health Research	LEHR-0040	Nuclear Facility D&D-Laboratory for Energy-Related Health Research	39,549	0	0	39,549	39,549
Laboratory for Energy- Related Health Research	VL-LEHR-0040	Nuclear Facility D&D-Laboratory for Energy-Related Health Research	493	0	0	493	493
Laboratory for Energy-Related Health Research Total			40,042	0	0	40,042	40,042
Lawrence Berkeley National Laboratory	CBC-LBNL-0030	Soil and Water Remediation-Lawrence Berkeley National Laboratory	34,167	0	0	34,167	34,167
Lawrence Berkeley National Laboratory	VL-LBNL-0030	Soil and Water Remediation-Lawrence Berkeley National Laboratory	1,539	0	0	1,539	1,539
Lawrence Berkeley National Laboratory Total			35,706	0	0	35,706	35,706
Lawrence Livermore National Laboratory	VL-LLNL-0013	Solid Waste Stabilization and Disposition- Lawrence Livermore National Laboratory	71,822	0	0	71,822	71,822

Lifecycle Costs by Program Baseline Summary (PBS)

Thousands of Dollars

Site	PBS Field Code	PBS Name	Prior Costs FY 97-2009	FY10 and Remaining Cost (Low Range)	FY10 and Remaining Cost (High Range)	Lifecycle Cost (Low Range)	Lifecycle Cost (High Range)
Lawrence Livermore National Laboratory	VL-LLNL-0030	Soil and Water Remediation-Lawrence Livermore National Laboratory - Main Site	136,158	0	0	136,158	136,158
Lawrence Livermore National Laboratory	VL-LLNL-0031	Soil and Water Remediation-Lawrence Livermore National Laboratory - Site 300	122,482	0	0	122,482	122,482
Lawrence Livermore National Laboratory Total			330,462	0	0	330,462	330,462
Los Alamos National Laboratory	VL-LANL-0013	Solid Waste Stabilization and Disposition- LANL Legacy	586,208	214,454	263,454	800,662	849,662
Los Alamos National Laboratory	VL-LANL-0030	Soil and Water Remediation-LANL	1,059,768	570,602	1,429,085	1,630,370	2,488,853
Los Alamos National Laboratory	VL-LANL-0040-D	Nuclear Facility D&D-LANL (Defense)	92,036	106,143	145,143	198,179	237,179
Los Alamos National Laboratory	VL-LANL-0040-N	Nuclear Facility D&D-LANL (Non- Defense)	13,352	3,937	3,937	17,289	17,289
Los Alamos National Laboratory Total			1,751,364	895,136	1,841,619	2,646,500	3,592,983
Miamisburg	OH-MB-0013	Solid Waste Stabilization and Disposition- Miamisburg	264,692	0	0	264,692	264,692
Miamisburg	OH-MB-0020	Safeguards and Security-Miamisburg	28,284	0	0	28,284	28,284
Miamisburg	OH-MB-0030	Soil and Water Remediation-Miamisburg	252,228	6,610	6,610	258,838	258,838
Miamisburg	OH-MB-0031	Soil and Water Remediation - OU-1	43,000	0	0	43,000	43,000
Miamisburg	OH-MB-0040	Nuclear Facility D&D-Miamisburg	504,677	0	0	504,677	504,677
Miamisburg	OH-MB-0100	Miamisburg Post-Closure Administration	58,956	776,320	776,320	835,276	835,276
Miamisburg	OH-MB-0101	Miamisburg Community and Regulatory Support	9,831	0	0	9,831	9,831
Miamisburg Total			1,161,668	782,930	782,930	1,944,598	1,944,598
Moab	CBC-MOAB-0031	Soil and Water Remediation-Moab	130,029	869,629	909,564	999,658	1,039,593
Moab Total			130,029	869,629	909,564	999,658	1,039,593
Nevada Test Site	VL-NV-0013	Solid Waste Stabilization and Disposition- Nevada Test Site	101,022	0	0	101,022	101,022
Nevada Test Site	VL-NV-0030	Soil and Water Remediation-Nevada Test	757,679	912,308	1,194,036	1,669,987	1,951,715

Lifecycle Costs by Program Baseline Summary (PBS)							
Thousands of Dollars							
Site	PBS Field Code	PBS Name	Prior Costs FY 97-2009	FY10 and Remaining Cost (Low Range)	FY10 and Remaining Cost (High Range)	Lifecycle Cost (Low Range)	Lifecycle Cost (High Range)
		Site					
Nevada Test Site	VL-NV-0080	Operate Waste Disposal Facility-Nevada	103,569	466,251	490,632	569,820	594,201
Nevada Test Site	VL-NV-0100	Nevada Community and Regulatory Support	47,767	54,800	54,800	102,567	102,567
Nevada Test Site Total			1,010,037	1,433,359	1,739,468	2,443,396	2,749,505
Oak Ridge Reservation	HQ-SW-0013X-OR	Solid Waste Stabilization and Disposition- Science Current Generation	142,978	0	0	142,978	142,978
Oak Ridge Reservation	OR-0011Y	NM Stabilization and Disposition-ETTP Uranium Facilities Management	52,409	0	0	52,409	52,409
Oak Ridge Reservation	OR-0011Z	Downblend of U-233 in Building 3019	138,809	222,040	246,012	360,849	384,821
Oak Ridge Reservation	OR-0013A	Solid Waste Stabilization and Disposition- 2006	464,919	0	0	464,919	464,919
Oak Ridge Reservation	OR-0013B	Solid Waste Stabilization and Disposition- 2012	1,017,844	658,149	731,464	1,675,993	1,749,308
Oak Ridge Reservation	OR-0020	Safeguards and Security	144,101	138,469	143,930	282,570	288,031
Oak Ridge Reservation	OR-0030	Soil and Water Remediation-Melton Valley	350,609	0	0	350,609	350,609
Oak Ridge Reservation	OR-0031	Soil and Water Remediation-Offsites	60,234	1,758	1,831	61,992	62,065
Oak Ridge Reservation	OR-0040	Nuclear Facility D&D-East Tennessee Technology Park (D&D Fund)	1,991,854	1,077,844	1,210,922	3,069,698	3,202,776
Oak Ridge Reservation	OR-0041	Nuclear Facility D&D-Y-12	356,358	692,680	814,417	1,049,038	1,170,775
Oak Ridge Reservation	OR-0042	Nuclear Facility D&D-Oak Ridge National Laboratory	393,532	805,748	914,208	1,199,280	1,307,740
Oak Ridge Reservation	OR-0043	Nuclear Facility D&D-East Tennessee Technology Park (Defense)	84,987	43,625	45,773	128,612	130,760
Oak Ridge Reservation	OR-0100	Oak Ridge Reservation Community & Regulatory Support (Defense)	98,824	47,189	49,019	146,013	147,843
Oak Ridge Reservation	OR-0101	Oak Ridge Contract/Post-Closure Liabilities/Administration	105,139	0	0	105,139	105,139
Oak Ridge Reservation	OR-0102	East Tennessee Technology Park Contract/Post-Closure Liabilities/Administration	162,831	146,302	151,976	309,133	314,807

Lifecycle Costs by Program Baseline Summary (PBS)							
Thousands of Dollars							
Site	PBS Field Code	PBS Name	Prior Costs FY 97-2009	FY10 and Remaining Cost (Low Range)	FY10 and Remaining Cost (High Range)	Lifecycle Cost (Low Range)	Lifecycle Cost (High Range)
Oak Ridge Reservation	OR-0103	Oak Ridge Reservation Community & Regulatory Support (D&D Fund)	44,375	0	0	44,375	44,375
Oak Ridge Reservation	OR-0900-D	Pre-2004 Completions (Defense)	16,828	0	0	16,828	16,828
Oak Ridge Reservation	OR-0900-N	Pre-2004 Completions (Non-Defense)	617,253	0	0	617,253	617,253
Oak Ridge Reservation Total			6,243,884	3,833,804	4,309,552	10,077,688	10,553,436
Office of River Protection	HQ-HLW-0014X-RV	Radioactive Liquid Tank Waste Stabilization and Disposition-Storage Operations Awaiting Geologic Rep	0	122,239	122,239	122,239	122,239
Office of River Protection	ORP-0014	Radioactive Liquid Tank Waste Stabilization and Disposition	4,443,847	39,672,965	57,575,910	44,116,812	62,019,757
Office of River Protection	ORP-0060	Major Construction-Waste Treatment Plant	5,384,834	6,724,904	6,724,904	12,109,738	12,109,738
Office of River Protection	ORP-0061	pre-Waste Treatment Plan, Transition Activity	433,314	0	0	433,314	433,314
Office of River Protection	ORP-0100	Office of River Protection Community and Regulatory Support	1,458	0	0	1,458	1,458
Office of River Protection Total			10,263,453	46,520,108	64,423,053	56,783,561	74,686,506
Other	CBC-0100-FN	CBC Post Closure Administration - Fernald	53,477	2,635	2,635	56,112	56,112
Other	CBC-0100-MD	CBC Post Closure Administration - Mound	359	3,046	3,046	3,405	3,405
Other	CBC-0100-RF	CBC Post Closure Administration - Rocky Flats	6,137	14,370	14,370	20,507	20,507
Other	CBC-CA-0013B-N	Solid Waste Stabilization and Disposition-California Sites-2012 (Non-Defense)	6,118	357	357	6,475	6,475
Other	CBC-CA-0100-N	Community and Regulatory Support (Non-Defense)	2,594	0	0	2,594	2,594
Other	CH-OPS-0900	Pre-2004 Completions	98,850	0	0	98,850	98,850
Other	CH-PPPL-0030	Soil and Water Remediation-Princeton Site A/B	309	0	0	309	309
Other	NV-0030	Soil and Water Remediation - Offsites	84,993	0	0	84,993	84,993
Other	OH-OPS-0900-D	Pre-2004 Completions	57,659	0	0	57,659	57,659

Lifecycle Costs by Program Baseline Summary (PBS)							
Thousands of Dollars							
Site	PBS Field Code	PBS Name	Prior Costs FY 97-2009	FY10 and Remaining Cost (Low Range)	FY10 and Remaining Cost (High Range)	Lifecycle Cost (Low Range)	Lifecycle Cost (High Range)
Other	OH-OPS-0900-N	Pre-2004 Completions (Non-Defense)	396,924	0	0	396,924	396,924
Other	VL-FAO-0100-D	Nuclear Material Stewardship (Defense)	108,725	0	0	108,725	108,725
Other	VL-FAO-0100-N	Nuclear Material Stewardship (Non-Defense)	14,954	0	0	14,954	14,954
Other	VL-FAO-0101	Miscellaneous Programs and Agreements in Principle	85,877	18,122	18,122	103,999	103,999
Other	VL-FAO-0900	Pre-2004 Completions	232,740	0	0	232,740	232,740
Other	VL-FOO-0013B-D	Solid Waste Stabilization and Disposition Support-Lawrence Livermore National Laboratory	14,200	1,192	1,192	15,392	15,392
Other	VL-FOO-0013B-N	Solid Waste Stabilization and Disposition-Oakland Sites-2012 (Non-Defense)	68	0	0	68	68
Other	VL-FOO-0100-D	LLNL Community and Regulatory Support	5,516	0	0	5,516	5,516
Other	VL-FOO-0100-N	Oakland Community and Regulatory Support (Non-Defense)	79	0	0	79	79
Other	VL-FOO-0900-N	Pre-2004 Completions (Non-Defense)	20,896	0	0	20,896	20,896
Other	VL-GA-0012	SNF Stabilization and Disposition-General Atomics	15,108	0	0	15,108	15,108
Other	VL-SPRU-0040	Nuclear Facility D&D-Separations Process Research Unit	64,876	84,360	87,970	149,236	152,846
Other	VL-SV-0100	South Valley Superfund	6,061	0	0	6,061	6,061
Other Total			1,276,520	124,082	127,692	1,400,602	1,404,212
Paducah Gaseous Diffusion Plant	GDP D&D	Nuclear Facility D&D-Paducah	0	5,800,000	12,500,000	5,800,000	12,500,000
Paducah Gaseous Diffusion Plant	PA-0011	NM Stabilization and Disposition-Paducah Uranium Facilities Management	32,097	27,962	29,417	60,059	61,514
Paducah Gaseous Diffusion Plant	PA-0011X	NM Stabilization and Disposition-Depleted Uranium Hexafluoride Conversion	695,142	1,046,071	1,046,071	1,741,213	1,741,213
Paducah Gaseous Diffusion Plant	PA-0013	Solid Waste Stabilization and Disposition	245,396	85,142	102,428	330,538	347,824
Paducah Gaseous Diffusion Plant	PA-0020	Safeguards and Security	47,973	92,425	105,802	140,398	153,775

Lifecycle Costs by Program Baseline Summary (PBS)

Thousands of Dollars

Site	PBS Field Code	PBS Name	Prior Costs FY 97-2009	FY10 and Remaining Cost (Low Range)	FY10 and Remaining Cost (High Range)	Lifecycle Cost (Low Range)	Lifecycle Cost (High Range)
Paducah Gaseous Diffusion Plant	PA-0040	Nuclear Facility D&D-Paducah	801,521	1,267,738	1,349,014	2,069,259	2,150,535
Paducah Gaseous Diffusion Plant	PA-0100	Paducah Community and Regulatory Support (Non-Defense)	10,534	0	0	10,534	10,534
Paducah Gaseous Diffusion Plant	PA-0102	Paducah Contract/Post-Closure Liabilities/Administration (D&D Fund)	33,356	8,888	13,374	42,244	46,730
Paducah Gaseous Diffusion Plant	PA-0103	Paducah Community and Regulatory Support (D&D Fund)	19,195	27,660	30,914	46,855	50,109
Paducah Gaseous Diffusion Plant Total			1,885,214	8,355,886	15,177,020	10,241,100	17,062,234
Pantex Plant	VL-PX-0030	Soil and Water Remediation-Pantex	193,356	0	0	193,356	193,356
Pantex Plant	VL-PX-0040	Nuclear Facility D&D-Pantex	15,120	0	0	15,120	15,120
Pantex Plant Total			208,476	0	0	208,476	208,476
Portsmouth Gaseous Diffusion Plant	PO-0011	NM Stabilization and Disposition-Portsmouth Uranium Facilities Management	100,733	6	131	100,739	100,864
Portsmouth Gaseous Diffusion Plant	PO-0011X	NM Stabilization and Disposition-Depleted Uranium Hexafluoride Conversion	289,172	1,192,792	1,192,792	1,481,964	1,481,964
Portsmouth Gaseous Diffusion Plant	PO-0013	Solid Waste Stabilization and Disposition	439,377	96,658	97,138	536,035	536,515
Portsmouth Gaseous Diffusion Plant	PO-0020	Safeguards and Security	105,775	629,774	629,774	735,549	735,549
Portsmouth Gaseous Diffusion Plant	PO-0040	Nuclear Facility D&D-Portsmouth	842,213	5,001,370	11,894,438	5,843,583	12,736,651
Portsmouth Gaseous Diffusion Plant	PO-0041	Nuclear Facility D&D-Portsmouth GCEP	66,117	0	0	66,117	66,117
Portsmouth Gaseous Diffusion Plant	PO-0101	Portsmouth Cold Standby	372,408	0	0	372,408	372,408
Portsmouth Gaseous Diffusion Plant	PO-0103	Portsmouth Contract/Post-Closure Liabilities/Administration (D&D Fund)	5,366	36,087	36,087	41,453	41,453
Portsmouth Gaseous Diffusion Plant	PO-0104	Portsmouth Community and Regulatory Support (D&D Fund)	2,653	18,053	18,053	20,706	20,706
Portsmouth Gaseous Diffusion Plant Total			2,223,814	6,974,740	13,868,413	9,198,554	16,092,227

Lifecycle Costs by Program Baseline Summary (PBS)							
Thousands of Dollars							
Site	PBS Field Code	PBS Name	Prior Costs FY 97-2009	FY10 and Remaining Cost (Low Range)	FY10 and Remaining Cost (High Range)	Lifecycle Cost (Low Range)	Lifecycle Cost (High Range)
Program Direction	HQ-PD-0100	Program Direction	3,896,389	8,183,679	8,183,679	12,080,068	12,080,068
Program Direction Total			3,896,389	8,183,679	8,183,679	12,080,068	12,080,068
Rocky Flats Environmental Technology Site	CBC-RF-0102	Rocky Flats Future Use	3,061	0	0	3,061	3,061
Rocky Flats Environmental Technology Site	RF-0011	NM Stabilization and Disposition	471,415	0	0	471,415	471,415
Rocky Flats Environmental Technology Site	RF-0013	Solid Waste Stabilization and Disposition	871,899	0	0	871,899	871,899
Rocky Flats Environmental Technology Site	RF-0020	Safeguards and Security	299,404	0	0	299,404	299,404
Rocky Flats Environmental Technology Site	RF-0030	Soil and Water Remediation	2,055,578	0	0	2,055,578	2,055,578
Rocky Flats Environmental Technology Site	RF-0040	Nuclear Facility D&D-North Side Facility Closures	1,909,146	0	0	1,909,146	1,909,146
Rocky Flats Environmental Technology Site	RF-0041	Nuclear Facility D&D-South Side Facility Closures	748,973	0	0	748,973	748,973
Rocky Flats Environmental Technology Site	RF-0100	Rocky Flats Environmental Technology Site Contract Liabilities	100,008	2,550,959	2,550,959	2,650,967	2,650,967
Rocky Flats Environmental Technology Site	RF-0101	Rocky Flats Community and Regulatory Support	37,023	0	0	37,023	37,023
Rocky Flats Environmental Technology Site Total			6,496,507	2,550,959	2,550,959	9,047,466	9,047,466
Sandia National Laboratory	VL-SN-0030	Soil and Water Remediation-Sandia	235,249	0	0	235,249	235,249

Lifecycle Costs by Program Baseline Summary (PBS)

Thousands of Dollars

Site	PBS Field Code	PBS Name	Prior Costs FY 97-2009	FY10 and Remaining Cost (Low Range)	FY10 and Remaining Cost (High Range)	Lifecycle Cost (Low Range)	Lifecycle Cost (High Range)
Sandia National Laboratory Total			235,249	0	0	235,249	235,249
Savannah River Site	HQ-SNF-0012X-SR	SNF Stabilization and Disposition-Storage Operations Awaiting Geologic Repository	68,140	0	0	68,140	68,140
Savannah River Site	SR-0011A	NM Stabilization and Disposition-2006	134,009	0	0	134,009	134,009
Savannah River Site	SR-0011B	NM Stabilization and Disposition-2012	3,663,031	92,675	92,675	3,755,706	3,755,706
Savannah River Site	SR-0011C	NM Stabilization and Disposition-2035	1,316,140	6,036,912	6,666,915	7,353,052	7,983,055
Savannah River Site	SR-0012	SNF Stabilization and Disposition	315,804	733,365	755,365	1,049,169	1,071,169
Savannah River Site	SR-0013	Solid Waste Stabilization and Disposition	1,111,294	3,170,007	3,611,716	4,281,301	4,723,010
Savannah River Site	SR-0014C	Radioactive Liquid Tank Waste Stabilization and Disposition-2035	6,328,164	16,007,555	24,499,555	22,335,719	30,827,719
Savannah River Site	SR-0014C-T	Radioactive Liquid Tank Waste Stabilization and Disposition-2035 (T)	137,603	0	0	137,603	137,603
Savannah River Site	SR-0020	Safeguards and Security	1,326,240	2,287,265	2,287,265	3,613,505	3,613,505
Savannah River Site	SR-0030	Area Completion	1,186,052	2,850,833	3,337,833	4,036,885	4,523,885
Savannah River Site	SR-0040	Nuclear Facility D&D	490,106	5,148,883	5,909,877	5,638,989	6,399,983
Savannah River Site	SR-0040B	Nuclear Facility D&D-2012	778	0	0	778	778
Savannah River Site	SR-0100	Non-Closure Mission Support	199,954	145,000	145,000	344,954	344,954
Savannah River Site	SR-0101	Savannah River Community and Regulatory Support	120,375	217,500	217,500	337,875	337,875
Savannah River Site	SR-0900	Pre-2004 Completions	198,242	0	0	198,242	198,242
Savannah River Site Total			16,595,932	36,689,995	47,523,701	53,285,927	64,119,633
Stanford Linear Accelerator Center	CBC-SLAC-0030	Soil and Water Remediation-Stanford Linear Accelerator Center	37,679	13,858	16,326	51,537	54,005
Stanford Linear Accelerator Center Total			37,679	13,858	16,326	51,537	54,005
Technology Development and Deployment	HQ-TD-0100	Technology Development	1,683,888	1,388,695	1,388,695	3,072,583	3,072,583

Lifecycle Costs by Program Baseline Summary (PBS)							
Thousands of Dollars							
Site	PBS Field Code	PBS Name	Prior Costs FY 97-2009	FY10 and Remaining Cost (Low Range)	FY10 and Remaining Cost (High Range)	Lifecycle Cost (Low Range)	Lifecycle Cost (High Range)
Technology Development and Deployment Total			1,683,888	1,388,695	1,388,695	3,072,583	3,072,583
Waste Isolation Pilot Plant	CB-0020	Safeguards and Security	26,554	164,967	164,967	191,521	191,521
Waste Isolation Pilot Plant	CB-0080	Operate Waste Disposal Facility-WIPP	1,969,567	2,947,982	3,370,495	4,917,549	5,340,062
Waste Isolation Pilot Plant	CB-0081	Central Characterization Project	162,708	337,790	402,357	500,498	565,065
Waste Isolation Pilot Plant	CB-0090	Transportation-WIPP	336,984	606,668	681,339	943,652	1,018,323
Waste Isolation Pilot Plant	CB-0100	US/Mexico/Border/Material Partnership Initiative	11,329	0	0	11,329	11,329
Waste Isolation Pilot Plant	CB-0101	Economic Assistance to the State of New Mexico	203,270	56,682	56,682	259,952	259,952
Waste Isolation Pilot Plant	CB-0900	Pre-2004 Completions	7,137	0	0	7,137	7,137
Waste Isolation Pilot Plant Total			2,717,549	4,114,089	4,675,840	6,831,638	7,393,389
West Valley Demonstration Project	OH-WV-0012	SNF Stabilization and Disposition-West Valley	32,319	0	0	32,319	32,319
West Valley Demonstration Project	OH-WV-0013	Nuclear Facility D&D West Valley	263,856	85,014	99,214	348,870	363,070
West Valley Demonstration Project	OH-WV-0014	Radioactive Liquid Tank Waste Stabilization and Disposition-West Valley High-Level Waste Storage	0	366,000	407,000	366,000	407,000
West Valley Demonstration Project	OH-WV-0020	Safeguards and Security-West Valley	16,695	29,077	29,077	45,772	45,772
West Valley Demonstration Project	OH-WV-0040	Nuclear Facility D&D-West Valley	513,459	542,396	625,796	1,055,855	1,139,255
West Valley Demonstration Project Total			826,329	1,022,487	1,161,087	1,848,816	1,987,416
Grand Total			81,734,476	192,834,483	247,239,497	274,568,959	328,973,973

Corporate Performance Measure Quantities by Program Baseline Summary^{abc}

Office / Installation	Project Number	Project Name / Measure	Complete Through 2008	Complete Through 2009	Targeted Completion Through 2010	Targeted Completion Through 2011	Balance Remaining	Life-Cycle Quantity
<u>Closure Sites</u>								
Ashtabula	OH-AB-0030	Soil and Water Remediation-Ashtabula Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	3,707	3,707	3,707	3,707	0	3,707
		Radioactive Facility Completions (Number of Facilities)	28	28	28	28	0	28
		Industrial Facility Completions (Number of Facilities)	7	7	7	7	0	7
		Remediation Complete (Number of Release Sites)	3	3	3	3	0	3
Columbus	OH-CL-0040	Nuclear Facility D&D-West Jefferson Nuclear Facility Completions (Number of Facilities)	1	1	1	1	0	1
		Radioactive Facility Completions (Number of Facilities)	14	14	14	14	0	14
		Remediation Complete (Number of Release Sites)	2	2	2	2	0	2
Fernald	OH-FN-0013	Solid Waste Stabilization and Disposition-Fernald Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	7,085	7,085	7,085	7,085	0	7,085
		Remediation Complete (Number of Release Sites)	4	4	4	4	0	4
Fernald	OH-FN-0030	Soil and Water Remediation-Fernald						

^aLife-cycle estimates for release sites, facilities, and high-level waste canisters include pre-1997 actuals. Quantities for all other measures except low-level and mixed low-level waste disposal begin in 1997. Low-level and mixed low-level waste disposal begins in 1998.

^bThis chart provides a consistent set of performance measures for the EM program by PBS. The project-level justification provides a description of significant activities for each project including performance measures and project-specific budget milestones, as applicable.

^c FY 2003 – FY 2005 annual results and targets, as well as life-cycle numbers, are under configuration control. In enforcing the Assistant Secretary’s added emphasis on project management principles, EM’s Configuration Control Board maintains strict configuration control of these numbers to ensure performance and accountability is firmly established and reported.

Office / Installation	Project Number	Project Name / Measure	Complete Through 2008	Complete Through 2009	Targeted Completion Through 2010	Targeted Completion Through 2011	Balance Remaining	Life-Cycle Quantity
Fernald	OH-FN-0050	Remediation Complete (Number of Release Sites)	2	2	2	2	0	2
		Non-Nuclear Facility D&D-Fernald Radioactive Facility Completions (Number of Facilities)	29	29	29	29	0	29
		Industrial Facility Completions (Number of Facilities)	1	1	1	1	0	1
Miamisburg	OH-MB-0013	Solid Waste Stabilization and Disposition-Miamisburg						
		Depleted and Other Uranium packaged for disposition (Metric Tons)	0	0	0	0	0	0
Miamisburg	OH-MB-0030	Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	3,947	3,947	3,947	3,947	0	3,947
		Soil and Water Remediation-Miamisburg Depleted and Other Uranium packaged for disposition (Metric Tons)	0	0	0	0	0	0
Miamisburg	OH-MB-0040	Remediation Complete (Number of Release Sites)	178	178	178	178	0	178
		Nuclear Facility D&D-Miamisburg Nuclear Facility Completions (Number of Facilities)	8	8	8	8	0	8
		Radioactive Facility Completions (Number of Facilities)	11	11	11	11	0	11
		Industrial Facility Completions (Number of Facilities)	116	116	116	116	0	116
Rocky Flats Environmental Technology Site	RF-0011	NM Stabilization and Disposition Plutonium Metal or Oxide packaged for long-term storage (Number of Containers)	1,895	1,895	1,895	1,895	0	1,895
		Plutonium or Uranium Residues packaged for disposition (Kilograms of Bulk)	103,901	103,901	103,901	103,901	0	103,901
Rocky Flats Environmental Technology Site	RF-0013	Solid Waste Stabilization and Disposition Transuranic Waste shipped for disposal	15,036	15,036	15,036	15,036	0	15,036

Office / Installation	Project Number	Project Name / Measure	Complete Through 2008	Complete Through 2009	Targeted Completion Through 2010	Targeted Completion Through 2011	Balance Remaining	Life-Cycle Quantity
		(Cubic meters) - CH Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	602,188	602,188	602,188	602,188	0	602,188
Rocky Flats Environmental Technology Site	RF-0030	Soil and Water Remediation Remediation Complete (Number of Release Sites)	360	360	360	360	0	360
Rocky Flats Environmental Technology Site	RF-0040	Nuclear Facility D&D-North Side Facility Closures Material Access Areas eliminated (Number of Material Access Areas)	6	6	6	6	0	6
		Nuclear Facility Completions (Number of Facilities)	6	6	6	6	0	6
		Radioactive Facility Completions (Number of Facilities)	22	22	22	22	0	22
		Industrial Facility Completions (Number of Facilities)	141	141	141	141	0	141
Rocky Flats Environmental Technology Site	RF-0041	Nuclear Facility D&D-South Side Facility Closures Material Access Areas eliminated (Number of Material Access Areas)	1	1	1	1	0	1
		Radioactive Facility Completions (Number of Facilities)	32	32	32	32	0	32
		Industrial Facility Completions (Number of Facilities)	176	176	176	176	0	176
All Other Sites								
Brookhaven National Laboratory	BRNL-0030	Soil and Water Remediation-Brookhaven National Laboratory Radioactive Facility Completions (Number of Facilities)	3	3	3	3	0	3
		Remediation Complete (Number of Release Sites)	75	75	75	75	0	75
Brookhaven National	BRNL-0040	Nuclear Facility D&D-Brookhaven						

Office / Installation	Project Number	Project Name / Measure	Complete Through 2008	Complete Through 2009	Targeted Completion Through 2010	Targeted Completion Through 2011	Balance Remaining	Life-Cycle Quantity
Laboratory		Graphite Research Reactor Nuclear Facility Completions (Number of Facilities)	0	0	1	1	0	1
		Radioactive Facility Completions (Number of Facilities)	7	7	8	8	0	8
Brookhaven National Laboratory	BRNL-0041	Remediation Complete (Number of Release Sites)	1	1	1	1	0	1
		Nuclear Facility D&D-High Flux Beam Reactor Remediation Complete (Number of Release Sites)	1	1	1	1	0	1
California Site Support	CBC-CA-0013B-N	Solid Waste Stabilization and Disposition-Oakland Sites-2012 (Non-Defense) Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	83	83	83	83	0	83
Energy Technology Engineering Center	CBC-ETEC-0040	Nuclear Facility D&D-Energy Technology Engineering Center Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	1,055	1,055	1,055	1,055	25	1,080
		Radioactive Facility Completions (Number of Facilities)	4	4	4	4	2	6
		Industrial Facility Completions (Number of Facilities)	24	24	24	24	2	26
		Remediation Complete (Number of Release Sites)	4	4	4	4	10	14
Inhalation Toxicology Laboratory	CBC-ITL-0030	Soil and Water Remediation-Inhalation Toxicology Laboratory Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	359	359	359	359	0	359
		Remediation Complete (Number of Release Sites)	9	9	9	9	0	9
Lawrence Berkeley National Laboratory	CBC-LBNL-0030	Soil and Water Remediation-Lawrence Berkeley National Laboratory Remediation Complete (Number of Release Sites)	181	181	181	181	0	181
Stanford Linear	CBC-SLAC-	Soil and Water Remediation-Stanford						

Office / Installation	Project Number	Project Name / Measure	Complete Through 2008	Complete Through 2009	Targeted Completion Through 2010	Targeted Completion Through 2011	Balance Remaining	Life-Cycle Quantity
Accelerator Center	0030	Linear Accelerator Center Remediation Complete (Number of Release Sites)	17	17	32	51	0	51
Argonne National Laboratory-East	CH-ANLE-0030	Soil and Water Remediation-Argonne National Laboratory-East Remediation Complete (Number of Release Sites)	443	443	443	443	0	443
Argonne National Laboratory-East	CH-ANLE-0040	Nuclear Facility D&D-Argonne National Laboratory-East Transuranic Waste shipped for disposal (Cubic meters) - CH	0	0	0	0	30	30
		Transuranic Waste shipped for disposal (Cubic meters) - RH	0	0	0	0	22	22
		Radioactive Facility Completions (Number of Facilities)	69	78	78	78	2	80
Chicago Operations Office	CH-OPS-0900	Pre-2004 Completions Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	537	537	537	537	0	537
		Remediation Complete (Number of Release Sites)	30	30	30	30	0	30
Laboratory for Energy-Related Health Research	LEHR-0040	Nuclear Facility D&D-Laboratory for Energy-Related Health Research Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	944	944	944	944	0	944
		Industrial Facility Completions (Number of Facilities)	1	1	1	1	0	1
		Remediation Complete (Number of Release Sites)	16	16	16	16	0	16
California Site Support	VL-FOO-0900-N	Pre-2004 Completions (Non-Defense) Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	189	189	189	189	0	189
		Remediation Complete (Number of Release Sites)	3	3	3	3	0	3
General Atomics	VL-GA-0012	SNF Stabilization and Disposition-General Atomics						

Office / Installation	Project Number	Project Name / Measure	Complete Through 2008	Complete Through 2009	Targeted Completion Through 2010	Targeted Completion Through 2011	Balance Remaining	Life-Cycle Quantity
		Spent Nuclear Fuel packaged for final disposition (Metric Tons of Heavy Metal)	1	1	1	1	0	1
		Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	1,716	1,716	1,716	1,716	0	1,716
		Remediation Complete (Number of Release Sites)	2	2	2	2	0	2
Idaho								
Argonne National Laboratory - West	CH-ANLW-0030	Soil and Water Remediation-Argonne National Laboratory-West Remediation Complete (Number of Release Sites)	37	37	37	37	0	37
Idaho National Laboratory	ID-0011	NM Stabilization and Disposition Enriched Uranium packaged for disposition (Number of Containers)	1,586	1,586	1,586	1,586	0	1,586
		Material Access Areas eliminated (Number of Material Access Areas)	1	1	1	1	0	1
Idaho National Laboratory	ID-0012C	SNF Stabilization and Disposition-2035 Spent Nuclear Fuel packaged for final disposition (Metric Tons of Heavy Metal)	0	0	0	0	253	253
Idaho National Laboratory	ID-0013	Solid Waste Stabilization and Disposition Transuranic Waste shipped for disposal (Cubic meters) - CH	26,492	33,795	39,495	45,195	21,505	66,700
		Transuranic Waste shipped for disposal (Cubic meters) - RH	72	92	92	92	25	117
		Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	66,599	67,688	69,518	71,568	6,385	77,953
Idaho National Laboratory	ID-0014B	Radioactive Liquid Tank Waste Stabilization and Disposition-2012 Liquid Waste in Inventory eliminated (Thousands of Gallons)	0	0	0	100	800	900
		Liquid Waste Tanks closed (Number of Tanks)	7	7	7	7	4	11
Idaho National	ID-0014C	Radioactive Liquid Tank Waste						

Office / Installation	Project Number	Project Name / Measure	Complete Through 2008	Complete Through 2009	Targeted Completion Through 2010	Targeted Completion Through 2011	Balance Remaining	Life-Cycle Quantity
Laboratory		Stabilization and Disposition-2035 High-Level Waste packaged for final disposition (Number of Containers)	0	0	0	0	6,660	6,660
Idaho National Laboratory	ID-0030B	Soil and Water Remediation-2012 Transuranic Waste shipped for disposal (Cubic meters) - CH Remediation Complete (Number of Release Sites)	306	1,628	1,628	1,628	7,429	9,057
Idaho National Laboratory	ID-0030C	Soil and Water Remediation-2035 Transuranic Waste shipped for disposal (Cubic meters) - CH Low-Level and Mixed Low-Level Waste disposed (Cubic meters) Remediation Complete (Number of Release Sites)	240	250	329	333	10	343
Idaho National Laboratory	ID-0040B	Nuclear Facility D&D-2012 Nuclear Facility Completions (Number of Facilities) Radioactive Facility Completions (Number of Facilities) Industrial Facility Completions (Number of Facilities)	0	0	0	0	7,398	7,398
Idaho National Laboratory	ID-0040C	Nuclear Facility D&D-2035 Nuclear Facility Completions (Number of Facilities) Radioactive Facility Completions (Number of Facilities) Industrial Facility Completions (Number of Facilities)	0	0	0	0	31,161	31,161
Idaho National Laboratory	ID-0050B	Non-Nuclear Facility D&D-2012 Radioactive Facility Completions	0	0	0	0	23	23
Idaho National Laboratory	ID-0040B	Nuclear Facility D&D-2012 Nuclear Facility Completions (Number of Facilities) Radioactive Facility Completions (Number of Facilities) Industrial Facility Completions (Number of Facilities)	24	28	28	28	31	59
Idaho National Laboratory	ID-0040C	Nuclear Facility D&D-2035 Nuclear Facility Completions (Number of Facilities) Radioactive Facility Completions (Number of Facilities) Industrial Facility Completions (Number of Facilities)	0	0	0	0	23	23
Idaho National Laboratory	ID-0050B	Non-Nuclear Facility D&D-2012 Radioactive Facility Completions	0	0	0	0	35	35
Idaho National Laboratory	ID-0040C	Nuclear Facility D&D-2035 Nuclear Facility Completions (Number of Facilities) Radioactive Facility Completions (Number of Facilities) Industrial Facility Completions (Number of Facilities)	0	0	0	0	33	33
Idaho National Laboratory	ID-0050B	Non-Nuclear Facility D&D-2012 Radioactive Facility Completions	0	0	0	0	10	10
Idaho National Laboratory	ID-0050B	Non-Nuclear Facility D&D-2012 Radioactive Facility Completions	0	0	0	0	77	77
Idaho National Laboratory	ID-0050B	Non-Nuclear Facility D&D-2012 Radioactive Facility Completions	32	35	35	35	0	35

Office / Installation	Project Number	Project Name / Measure	Complete Through 2008	Complete Through 2009	Targeted Completion Through 2010	Targeted Completion Through 2011	Balance Remaining	Life-Cycle Quantity
		(Number of Facilities)						
Idaho Operations Office	ID-0900	Industrial Facility Completions (Number of Facilities)	138	143	143	143	0	143
		Pre-2004 Completions (Defense)						
		Remediation Complete (Number of Release Sites)	233	233	233	233	0	233
Oak Ridge								
East Tennessee Technology Park	OR-0011Z	Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	0	96	96	96	1,330	1,426
Oak Ridge National Laboratory Y-12 Plant	HQ-SW-0013X HQ-SW-0013Y	Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	16,252	16,252	16,252	16,252	0	16,252
East Tennessee Technology Park	OR-0011Y	NM Stabilization and Disposition-ETTP Uranium Facilities Management						
		Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	93	93	93	93	0	93
		Nuclear Facility Completions (Number of Facilities)	4	4	4	4	0	4
Oak Ridge Reservation	OR-0013A	Solid Waste Stabilization and Disposition-2006						
		Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	48,584	48,584	48,584	48,584	0	48,584
Oak Ridge Reservation	OR-0013B	Solid Waste Stabilization and Disposition-2012						
		Transuranic Waste shipped for disposal (Cubic meters) - CH	16	81	81	81	1,368	1,449
		Transuranic Waste shipped for disposal (Cubic meters) - RH	0	5	5	5	545	550
		Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	11,925	12,921	13,607	15,897	13,717	29,614
Oak Ridge Reservation	OR-0030	Soil and Water Remediation-Melton Valley						

Office / Installation	Project Number	Project Name / Measure	Complete Through 2008	Complete Through 2009	Targeted Completion Through 2010	Targeted Completion Through 2011	Balance Remaining	Life-Cycle Quantity
		Nuclear Facility Completions (Number of Facilities)	2	2	2	2	0	2
		Radioactive Facility Completions (Number of Facilities)	15	15	15	15	0	15
		Industrial Facility Completions (Number of Facilities)	2	2	2	2	0	2
		Remediation Complete (Number of Release Sites)	106	106	106	106	0	106
Oak Ridge Reservation	OR-0031	Soil and Water Remediation-Offsites Remediation Complete (Number of Release Sites)	6	7	8	8	0	8
East Tennessee Technology Park	OR-0040	Nuclear Facility D&D-East Tennessee Technology Park (D&D Fund)						
		Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	5,178	5,178	5,178	5,178	0	5,178
		Nuclear Facility Completions (Number of Facilities)	2	2	2	2	2	4
		Radioactive Facility Completions (Number of Facilities)	8	8	10	10	20	30
		Industrial Facility Completions (Number of Facilities)	282	310	331	348	210	558
		Remediation Complete (Number of Release Sites)	91	103	122	123	44	167
Y-12 Plant	OR-0041	Nuclear Facility D&D-Y-12						
		Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	0	0	0	0	43,038	43,038
		Industrial Facility Completions (Number of Facilities)	1	1	1	1	6	7
		Remediation Complete (Number of Release Sites)	28	28	28	28	110	138
Oak Ridge National Laboratory	OR-0042	Nuclear Facility D&D-Oak Ridge National Laboratory						
		Transuranic Waste shipped for disposal (Cubic meters) - CH	0	0	0	0	24	24
		Transuranic Waste shipped for disposal (Cubic meters) - RH	0	0	0	0	198	198

Office / Installation	Project Number	Project Name / Measure	Complete Through 2008	Complete Through 2009	Targeted Completion Through 2010	Targeted Completion Through 2011	Balance Remaining	Life-Cycle Quantity
		Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	366	811	1,160	1,487	3,031	4,518
		Nuclear Facility Completions (Number of Facilities)	0	0	0	0	15	15
		Radioactive Facility Completions (Number of Facilities)	3	3	3	3	28	31
		Industrial Facility Completions (Number of Facilities)	7	7	7	7	21	28
		Remediation Complete (Number of Release Sites)	80	80	80	80	97	177
East Tennessee Technology Park	OR-0043	Nuclear Facility D&D-East Tennessee Technology Park (Defense)						
		Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	32,979	32,979	32,979	32,979	0	32,979
		Industrial Facility Completions (Number of Facilities)	6	6	7	7	30	37
Oak Ridge Operations Office	OR-0900-D	Pre-2004 Completions (Defense) Remediation Complete (Number of Release Sites)	28	28	74	74	0	74
Oak Ridge Operations Office	OR-0900-N	Pre-2004 Completions (Non-Defense) Industrial Facility Completions (Number of Facilities)	3	3	3	3	0	3
		Remediation Complete (Number of Release Sites)	56	56	23	23	0	23
Paducah								
Paducah Gaseous Diffusion Plant	PA-0011	NM Stabilization and Disposition- Paducah Uranium Facilities Management Enriched Uranium packaged for disposition (Number of Containers)	0	0	0	0	182	182
Paducah Gaseous Diffusion Plant	PA-0011X	NM Stabilization and Disposition- Depleted Uranium Hexafluoride Conversion Depleted and Other Uranium packaged for disposition (Metric Tons)	0	0	0	7,750	450,000	457,750

Office / Installation	Project Number	Project Name / Measure	Complete Through 2008	Complete Through 2009	Targeted Completion Through 2010	Targeted Completion Through 2011	Balance Remaining	Life-Cycle Quantity
Paducah Gaseous Diffusion Plant	PA-0013	Solid Waste Stabilization and Disposition Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	15,642	19,150	19,896	20,642	5,966	26,608
Paducah Gaseous Diffusion Plant	PA-0040	Nuclear Facility D&D-Paducah Nuclear Facility Completions (Number of Facilities)	0	0	0	0	19	19
		Radioactive Facility Completions (Number of Facilities)	2	2	2	3	19	22
		Industrial Facility Completions (Number of Facilities)	12	17	17	19	153	172
		Remediation Complete (Number of Release Sites)	93	93	108	124	92	216
Paducah Gaseous Diffusion Plant	PA-0900	Pre-2004 Completions Remediation Complete (Number of Release Sites)	1	1	1	1	0	1
<u>Portsmouth</u>								
Portsmouth Gaseous Diffusion Plant	PO-0011X	NM Stabilization and Disposition- Depleted Uranium Hexafluoride Conversion Depleted and Other Uranium packaged for disposition (Metric Tons)	0	0	0	9,800	243,000	252,800
Portsmouth Gaseous Diffusion Plant	PO-0013	Solid Waste Stabilization and Disposition Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	31,907	35,754	35,754	35,754	0	35,754
Portsmouth Gaseous Diffusion Plant	PO-0040	Nuclear Facility D&D-Portsmouth Nuclear Facility Completions (Number of Facilities)	0	0	0	0	13	13
		Radioactive Facility Completions (Number of Facilities)	7	7	7	7	20	27
		Industrial Facility Completions (Number of Facilities)	7	8	8	8	113	121

Office / Installation	Project Number	Project Name / Measure	Complete Through 2008	Complete Through 2009	Targeted Completion Through 2010	Targeted Completion Through 2011	Balance Remaining	Life-Cycle Quantity
		Remediation Complete (Number of Release Sites)	20	20	20	20	1	21
Portsmouth Gaseous Diffusion Plant	PO-0900	Pre-2004 Completions Remediation Complete (Number of Release Sites)	130	130	130	130	0	130
Richland								
Hanford Site	RL-0011	NM Stabilization and Disposition-PFP Plutonium Metal or Oxide packaged for long-term storage (Number of Containers)	2,275	2,275	2,275	2,275	0	2,275
		Plutonium or Uranium Residues packaged for disposition (Kilograms of Bulk)	3,437	3,437	3,437	3,437	0	3,437
		Material Access Areas eliminated (Number of Material Access Areas)	1	16	20	20	0	20
		Nuclear Facility Completions (Number of Facilities)	21	21	21	23	8	31
		Radioactive Facility Completions (Number of Facilities)	0	0	0	1	25	26
Hanford Site	RL-0012	SNF Stabilization and Disposition Spent Nuclear Fuel packaged for final disposition (Metric Tons of Heavy Metal)	2,117	2,117	2,117	2,117	0	2,117
		Solid Waste Stabilization and Disposition-200 Area						
Hanford Site	RL-0013C	Transuranic Waste shipped for disposal (Cubic meters) - CH	3,030	3,030	3,030	3,030	21,550	24,580
		Transuranic Waste shipped for disposal (Cubic meters) - RH	0	0	0	0	858	858
		Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	47,213	48,572	48,572	48,572	2,878	51,450
Hanford Site	RL-0040	Nuclear Facility D&D-Remainder of Hanford						
		Nuclear Facility Completions (Number of Facilities)	4	4	4	4	35	39
		Radioactive Facility Completions (Number of Facilities)	12	12	12	12	168	180
		Industrial Facility Completions (Number	223	232	232	232	417	649

Office / Installation	Project Number	Project Name / Measure	Complete Through 2008	Complete Through 2009	Targeted Completion Through 2010	Targeted Completion Through 2011	Balance Remaining	Life-Cycle Quantity
		of Facilities)						
		Remediation Complete (Number of Release Sites)	39	39	39	39	818	857
Hanford Site	RL-0041	Nuclear Facility D&D-River Corridor Closure Project						
		Enriched Uranium packaged for disposition (Number of Containers)	2,958	2,958	2,958	2,958	0	2,958
		Depleted and Other Uranium packaged for disposition (Metric Tons)	3,100	3,100	3,100	3,100	0	3,100
		Nuclear Facility Completions (Number of Facilities)	3	3	7	7	1	8
		Radioactive Facility Completions (Number of Facilities)	37	40	43	59	72	131
		Industrial Facility Completions (Number of Facilities)	113	144	156	199	190	389
		Remediation Complete (Number of Release Sites)	429	440	459	519	326	845
Hanford Site	RL-0042	Nuclear Facility D&D-Fast Flux Test Facility Project						
		Spent Nuclear Fuel packaged for final disposition (Metric Tons of Heavy Metal)	7	7	7	7	0	7
		Nuclear Facility Completions (Number of Facilities)	0	0	0	0	4	4
		Radioactive Facility Completions (Number of Facilities)	0	0	0	0	9	9
		Industrial Facility Completions (Number of Facilities)	0	0	0	0	31	31
<u>River Protection</u>								
River Protection	ORP-0014	Radioactive Liquid Tank Waste Stabilization and Disposition						
		Liquid Waste in Inventory eliminated (Thousands of Gallons)	0	0	0	0	54,000	54,000
		Liquid Waste Tanks closed (Number of Tanks)	0	0	0	0	177	177
		High-Level Waste packaged for final disposition (Number of Containers)	0	0	0	0	9,667	9,667

Office / Installation	Project Number	Project Name / Measure	Complete Through 2008	Complete Through 2009	Targeted Completion Through 2010	Targeted Completion Through 2011	Balance Remaining	Life-Cycle Quantity
		Transuranic Waste shipped for disposal (Cubic meters) - CH	0	0	0	0	1,555	1,555
		Transuranic Waste shipped for disposal (Cubic meters) - RH	0	0	0	0	3,864	3,864
		Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	7,952	10,267	12,137	13,653	184,179	197,832
		Nuclear Facility Completions (Number of Facilities)	0	0	0	0	18	18
		Radioactive Facility Completions (Number of Facilities)	0	0	0	0	114	114
		Industrial Facility Completions (Number of Facilities)	0	0	0	0	128	128
		Remediation Complete (Number of Release Sites)	5	5	5	5	273	278
River Protection	ORP-0060	Major Construction-Waste Treatment Plant						
		Transuranic Waste shipped for disposal (Cubic meters) - RH	0	0	0	0	546	546
Savannah River								
Savannah River Site	SR-0040	Nuclear Facility Completions (Number of Facilities)	11	11	11	11	180	191
		Radioactive Facility Completions (Number of Facilities)	8	8	8	8	32	40
		Industrial Facility Completions (Number of Facilities)	232	232	232	232	527	759
Savannah River Site	SR-0011B	NM Stabilization and Disposition-2012 Plutonium Metal or Oxide packaged for long-term storage (Number of Containers)	919	919	919	919	0	919
		Plutonium or Uranium Residues packaged for disposition (Kilograms of Bulk)	490	490	490	490	0	490
Savannah River Site	SR-0011C	NM Stabilization and Disposition-2035 Enriched Uranium packaged for disposition (Number of Containers)	3,004	3,085	3,184	3,184	0	3,184
		Depleted and Other Uranium packaged for disposition (Metric Tons)	9,974	11,536	11,536	11,536	11,646	23,182

Office / Installation	Project Number	Project Name / Measure	Complete Through 2008	Complete Through 2009	Targeted Completion Through 2010	Targeted Completion Through 2011	Balance Remaining	Life-Cycle Quantity
Savannah River Site	SR-0012	SNF Stabilization and Disposition Spent Nuclear Fuel packaged for final disposition (Metric Tons of Heavy Metal)	3	3	3	3	37	40
Savannah River Site	SR-0013	Solid Waste Stabilization and Disposition Transuranic Waste shipped for disposal (Cubic meters) - CH	5,691	6,165	6,165	6,165	9,425	15,590
		Transuranic Waste shipped for disposal (Cubic meters) - RH	0	17	17	17	51	68
		Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	100,620	105,564	105,564	105,564	32,015	137,579
Savannah River Site	SR-0014C	Radioactive Liquid Tank Waste Stabilization and Disposition-2035 Liquid Waste in Inventory eliminated (Thousands of Gallons)	1,174	2,110	2,810	3,510	29,590	33,100
		Liquid Waste Tanks closed (Number of Tanks)	2	2	2	4	47	51
		High-Level Waste packaged for final disposition (Number of Containers)	2,599	2,795	2,981	3,278	3,022	6,300
Savannah River Site	SR-0020	Safeguards and Security Material Access Areas eliminated (Number of Material Access Areas)	2	2	2	2	1	3
Savannah River Site	SR-0030	Soil and Water Remediation Remediation Complete (Number of Release Sites)	361	369	369	369	146	515
<u>NNSA Sites</u>								
Offsites	NV-0030	Soil and Water Remediation-Nevada Test Site and Offsites Remediation Complete (Number of Release Sites)	53	53	53	53	0	53
New Mexico Site Support	VL-FAO-0900	Pre-2004 Completions Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	1,319	1,319	1,319	1,319	0	1,319
		Remediation Complete (Number of Release Sites)	155	155	155	155	0	155
Kansas City Plant	VL-KCP-0030	Soil and Water Remediation-Kansas City						

Office / Installation	Project Number	Project Name / Measure	Complete Through 2008	Complete Through 2009	Targeted Completion Through 2010	Targeted Completion Through 2011	Balance Remaining	Life-Cycle Quantity
Los Alamos National Laboratory	VL-LANL-0013	Plant Remediation Complete (Number of Release Sites)	43	43	43	43	0	43
		Solid Waste Stabilization and Disposition-LANL Legacy						
		Transuranic Waste shipped for disposal (Cubic meters) - CH	2,095	2,350	3,309	6,472	6,394	12,866
		Transuranic Waste shipped for disposal (Cubic meters) - RH	0	16	16	16	78	94
Los Alamos National Laboratory	VL-LANL-0030	Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	567	1,882	2,107	3,384	1,437	4,821
		Soil and Water Remediation-LANL Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	5,426	5,426	5,426	5,426	0	5,426
Los Alamos National Laboratory	VL-LANL-0040-D	Remediation Complete (Number of Release Sites)	1,417	1,426	1,456	1,548	541	2,089
		Nuclear Facility D&D-LANL (Defense) Radioactive Facility Completions (Number of Facilities)	0	0	0	0	99	99
Lawrence Livermore National Laboratory	VL-LLNL-0013	Nuclear Facility D&D-LANL (Non-Defense) Radioactive Facility Completions (Number of Facilities)	0	0	0	1	5	6
		Solid Waste Stabilization and Disposition-Lawrence Livermore National Laboratory Transuranic Waste shipped for disposal (Cubic meters) - CH	125	125	125	125	0	125
Lawrence Livermore National Laboratory	VL-LLNL-0030	Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	2,766	2,766	2,766	2,766	0	2,766
		Soil and Water Remediation-Lawrence Livermore National Laboratory - Main Site Remediation Complete (Number of Release Sites)	120	120	120	120	0	120

Office / Installation	Project Number	Project Name / Measure	Complete Through 2008	Complete Through 2009	Targeted Completion Through 2010	Targeted Completion Through 2011	Balance Remaining	Life-Cycle Quantity
Lawrence Livermore National Laboratory	VL-LLNL-0031	Soil and Water Remediation-Lawrence Livermore National Laboratory - Site 300 Remediation Complete (Number of Release Sites)	74	74	74	74	0	74
Nevada Test Site	VL-NV-0013	Solid Waste Stabilization and Disposition-Nevada Test Site						
		Transuranic Waste shipped for disposal (Cubic meters) - CH	449	1,246	1,246	1,246	0	1,246
Nevada Test Site	VL-NV-0030	Soil and Water Remediation-Nevada Test Site						
		Remediation Complete (Number of Release Sites)	1,016	1,060	1,061	1,064	972	2,036
Pantex Plant	VL-PX-0030	Soil and Water Remediation-Pantex Remediation Complete (Number of Release Sites)	237	237	237	237	0	237
Pantex Plant	VL-PX-0040	Nuclear Facility D&D-Pantex Industrial Facility Completions (Number of Facilities)	4	4	4	4	0	4
Sandia National Laboratory	VL-SN-0030	Soil and Water Remediation-Sandia Radioactive Facility Completions (Number of Facilities)	1	1	1	1	0	1
		Remediation Complete (Number of Release Sites)	263	263	264	264	0	264
NNSA Service Center	VL-SPRU-0040	Nuclear Facility D&D-Separations Process Research Unit						
		Transuranic Waste shipped for disposal (Cubic meters) - CH	0	0	0	50	0	50
		Nuclear Facility Completions (Number of Facilities)	0	0	0	1	3	4
		Remediation Complete (Number of Release Sites)	0	0	4	5	1	6
Nevada Test Site	VL-SV-0100	South Valley Superfund Remediation Complete (Number of Release Sites)	1	1	1	1	0	1

West Valley

Office / Installation	Project Number	Project Name / Measure	Complete Through 2008	Complete Through 2009	Targeted Completion Through 2010	Targeted Completion Through 2011	Balance Remaining	Life-Cycle Quantity
Demonstration Project								
West Valley Demonstration Project	OH-WV-0013	Solid Waste Stabilization and Disposition- West Valley						
		Liquid Waste in Inventory eliminated (Thousands of Gallons)	814	814	814	814	0	814
		High-Level Waste packaged for final disposition (Number of Containers)	275	275	275	275	0	275
		Transuranic Waste shipped for disposal (Cubic meters) - CH	0	0	0	571	571	1,142
		Transuranic Waste shipped for disposal (Cubic meters) - RH	0	0	0	277	278	555
		Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	26,931	27,986	27,986	29,899	0	29,899
West Valley Demonstration Project	OH-WV-0040	Nuclear Facility D&D-West Valley Nuclear Facility Completions (Number of Facilities)	3	3	4	12	2	14
		Radioactive Facility Completions (Number of Facilities)	4	4	4	6	7	13
		Industrial Facility Completions (Number of Facilities)	13	13	14	29	0	29

Carlsbad

Funding by Site

(dollars in thousands)

	FY 2009 Current Appropriation	FY 2009 Current Recovery Act Appropriation	FY 2010 Current Appropriation	FY 2011 Request
Carlsbad Field Office	26,909	0	27,854	28,771
Waste Isolation Pilot Plant	204,752	172,375	202,483	191,474
Total, Carlsbad	231,661	172,375	230,337	220,245

Site Overview

The Carlsbad Field Office, located in Carlsbad, New Mexico, has the responsibility for management of the National Transuranic Waste Program and the Waste Isolation Pilot Plant, the Nation's only mined geologic repository for the permanent disposal of defense-generated transuranic waste. The waste disposal area is 2,150 feet (almost one-half mile) below the surface located in 200-million year old stable salt beds. The transuranic waste that is eligible for disposal at the Waste Isolation Pilot Plant must ultimately be transported from all the generator sites to this repository for receipt, handling, and disposal.

American Recovery and Reinvestment Act Planned Activities

The Carlsbad Field Office American Recovery and Reinvestment Act (ARRA) activities are funded at \$172,375,000. Specifically, this funding will support transuranic waste disposal and facility/equipment modifications, waste characterization, and waste transportation for both contact-handled and remote-handled transuranic waste from around the country to the Waste Isolation Pilot Plant for permanent disposal. The Carlsbad Field Office will accelerate legacy transuranic waste characterization and shipment preparation as well as increase transuranic shipments to the Waste Isolation Pilot Plant repository from five large quantity sites (Hanford, Idaho National Laboratory, Los Alamos National Laboratory, Oak Ridge National Laboratory, and Savannah River Site) and several small quantity sites including, Lawrence Livermore National Laboratory (California); Argonne National Laboratory (Illinois); Nevada Test Site (Nevada); and Sandia National Laboratories (New Mexico).

Site Description

The Waste Isolation Pilot Plant is the world's first permitted deep geologic repository for the permanent disposal of radioactive waste. It is located in Eddy County in southeastern New Mexico, 26 miles southeast of Carlsbad. The Waste Isolation Pilot Plant's total land area consists of 10,240 acres (16 square miles) with the fenced surface portion of the active site being about 35 acres in size. It is located in an area of low population density, and the area surrounding the facility is used primarily for grazing and development of potash, oil, salt, and natural gas resources.

Site Cleanup Strategy/Scope of Cleanup

The Waste Isolation Pilot Plant is an operating facility, supporting the disposal of transuranic waste from waste generator and storage sites. It is not a cleanup site.

Site Completion (End State)

EM's end state for the Waste Isolation Pilot Plant is the cessation of disposal activities for legacy and newly generated transuranic waste from the DOE complex. The life-cycle planning estimate range is 2035 to 2039 for decommissioning of the surface facilities and permanent closure of the underground. This range is subject to change based on changes to DOE site cleanup schedules and transuranic waste inventories.

Regulatory Framework

The Waste Isolation Pilot Plant has four primary regulators: 1) the Environmental Protection Agency, which regulates the radioactive constituents of waste and repository certification; 2) the New Mexico Environment Department, which regulates the hazardous constituents of waste; 3) the Nuclear Regulatory Commission, which certifies Type B shipping containers; and 4) the Department of Transportation, which regulates highway transportation and Type A payload containers.

In the Waste Isolation Pilot Plant Land Withdrawal Act of 1992, as amended, (Public Law 102-579), Congress established regulatory conditions and standards covering limits on the types and quantities of waste that DOE could place in the repository. The Waste Isolation Pilot Plant operates under a Resource Conservation and Recovery Act, Part B, Hazardous Waste Facility Permit issued by the New Mexico Environment Department in October 1999. The Environmental Protection Agency regulates the Waste Isolation Pilot Plant under specific criteria established in 40 Code of Federal Regulations 194 that require DOE to demonstrate that the Waste Isolation Pilot Plant would meet containment standards. The Environmental Protection Agency initially certified the Waste Isolation Pilot Plant's compliance with these regulations on May 18, 1998. The Department submitted its second Compliance Recertification Application to the Environmental Protection Agency in March 2009.

Agreements with States at the Waste Isolation Pilot Plant's generator sites may impact the Waste Isolation Pilot Plant. For instance, the *Idaho Settlement Agreement* contains transuranic waste shipment milestones for the Idaho National Laboratory.

Critical Project Uncertainties and Assumptions

The ability of generator sites to supply sufficient certifiable waste to support the full utilization of the Waste Isolation Pilot Plant (for emplacement of both remote-handled and contact-handled transuranic waste) is a concern. To address this issue, the DOE Headquarters Office of Environmental Management is working with the generator sites to modify their current site contracts and to improve incentives for transuranic waste retrieval and remediation to increase transuranic waste certification. Through the use of Recovery Act and base program funds, the Carlsbad Field Office is taking action to assist sites' efforts to build a backlog of certified waste to increase waste characterization, shipment, and disposal efficiencies.

Interdependencies

The Waste Isolation Pilot Plant is dependent on the waste generator/storage sites to provide waste for certification, shipment, and disposal. The Waste Isolation Pilot Plant is also dependent on its regulators and their decisions that impact operations, certification of the Waste Isolation Pilot Plant, permit modifications, licenses, shipping, and transportation.

Contract Synopsis

The Carlsbad Field Office currently has four major contracts in place: 1) the Management and Operating Contract for the Waste Isolation Pilot Plant, extended through September 2012 (specific performance incentives were included in the negotiated extension); 2) a technical assistance contract for implementing the independent DOE quality assurance program for the National Transuranic Waste Program through August 2010, awarded on August 11, 2005; 3) a transportation carrier contract, awarded on March 16, 2007; and 4) another carrier contract, awarded on September 27, 2007.

Cleanup Benefits

The Waste Isolation Pilot Plant is crucial to DOE completing its cleanup/closure mission for transuranic waste. It is the only authorized disposal site for transuranic defense waste. The Waste Isolation Pilot Plant is an essential element in reducing the risks to public health, workers, and the environment.

Direct maintenance and repair at the Carlsbad Field Office is estimated to be \$14,465,000.

Funding Schedule by Activity

	(dollars in thousands)		
	FY 2009	FY 2010	FY 2011
Defense Environmental Cleanup			
Waste Isolation Pilot Plant			
CB-0080 / Operate Waste Disposal Facility-WIPP	138,389	154,902	134,999
CB-0081 / Central Characterization Project	34,255	13,730	25,797
CB-0090 / Transportation-WIPP	32,108	33,851	30,678
CB-0101 / Economic Assistance to the State of New Mexico	26,909	27,854	28,771
Subtotal, Waste Isolation Pilot Plant	231,661	230,337	220,245

Performance Measure Summary

	Complete through FY 2009	Complete through FY 2010	Complete through FY 2011	Life-Cycle	FY 2011 % Complete
Carlsbad					
Geographic Sites Eliminated (number of sites)	0	0	0	1	0%

Detailed Justification

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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CB-0080 / Operate Waste Disposal Facility-WIPP **138,389** **154,902** **134,999**

This PBS can be found within the Defense Environmental Cleanup appropriation.

This project supports activities related to the disposal of contact-handled and remote-handled transuranic waste at the Waste Isolation Pilot Plant. Key elements of this system are: 1) operation of the disposal facility—including mining, waste handling, and the infrastructure to safely maintain the 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 systems sensitive parameters; and 3) National Transuranic Waste Integration Program—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. All legacy transuranic waste has been removed from 14 sites.

Although the volume of waste emplaced each year is somewhat dependent upon the specific waste streams shipped and payload constraints, the target shipping rate is expected to result in approximately 7,400 cubic meters in both FY 2010 and FY 2011. The table below shows the cumulative actual volumes of transuranic waste (in cubic meters) emplaced at the Waste Isolation Pilot Plant Repository by site and by fiscal year. Contact-handled transuranic waste disposal began in 1999; remote-handled transuranic waste disposal began in 2007.

Contact Handled (CH) Transuranic Waste Emplaced in the WIPP Repository, Cumulative Volume by Site (cubic meters)											
Fiscal Year	LANL	INL	RFETS	Hanford	SRS	ANL-E	NTS	LLNL	ORNL	WIPP	Cumulative Total
FY 1999	190	15	62		0	0	0	0	0	0	267
FY 2000	0	87	252	13	0	0	0	0	0	0	619
FY 2001	74	717	1,044	68	62	0	0	0	0	0	2,584
FY 2002	8	2,065	2,903	18	141	0	0	0	0	1	7,720
FY 2003	327	567	4,017	250	2,285	97	0	0	0	0	15,263
FY 2004	0	342	4,650	448	3,240	24	106	0	0	0	24,073
FY 2005	171	2,564	2,134	853	1,554	0	235	146	0	0	31,730
FY 2006	546	7,890	0	715	1,340	0	64	0	0	0	42,285
FY 2007	823	5,390	0	765	1,548	0	0	0	0	0	50,811
FY 2008	689	3,304	0	622	1,267	0	0	0	12	0	56,705
FY 2009	727	4,621	0	9	719	0	0	0	37	3	62,821
Site Totals:	3,555	27,562	15,062	3,761	12,156	121	405	146	49	4	62,821

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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Remote Handled (RH) Transuranic Waste Emplaced in the WIPP Repository, Cumulative Volume by Site (cubic meters)							
Fiscal Year	LANL	INL	SRS	ANL-E	ORNL	GEVNC	Cumulative Total
FY 2007	0.0	22.7	0.0	0.0	0.0	0.0	22.7
FY 2008	0.0	47.4	0.0	2.5	0.0	0.0	72.6
FY 2009	14.2	15.7	18.4	7.4	5.0	0.6	133.9
Site Totals:	14.2	85.8	18.4	9.9	5.0	0.6	133.9

Site Completion (End-State)

All legacy transuranic waste across the DOE complex will be disposed of at the Waste Isolation Pilot Plant. The statutory limit for transuranic waste to be disposed there is 175,600 cubic meters, which includes 7,080 cubic meters for remote-handled transuranic waste. The surface area will remain under institutional controls for 100 years after the disposal phase ends.

In FY 2011, the following activities are planned:

- Maintain safety and personnel health programs, surface and underground operations and maintenance, program administration, generator site interface, public affairs programs, payments to the National Institute of Standards and Technology and other organizations for independent oversight, environmental oversight, and right-of-ways.
- Provide funding for 40 Code of Federal Regulations compliance, site environmental compliance, Resource Conservation and Recovery Act permit compliance, Quality Assurance, and payments to regulatory agencies.
- Provide funding for materials required for storage of contact-handled transuranic waste including slip sheets, and MgO (Magnesium Oxide), as well as engineering services and contact-handled transuranic waste handling. These are required for operations per the Environmental Protection Agency and the New Mexico Environment Department.
- Support handling of remote-handled waste, borehole drilling, and shield plugs required at the Waste Isolation Pilot Plant to receive and dispose of remote-handled transuranic waste.
- Support site maintenance items such as removing exhaust shaft surface duct salt build-up and several other similar projects.
- A portion of the scope of work typically covered in this project is being executed with American

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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Recovery and Reinvestment Act funding.

Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
No metrics associated with this PBS					
Key Accomplishments (FY 2009)/Planned Milestones (FY 2010/FY 2011)					
<ul style="list-style-type: none"> ▪ Provided large box characterization equipment to Savannah River (FY 2009) ▪ Submitted Compliance Recertification Application to EPA (FY 2009) ▪ Submitted Hazardous Waste Facility Permit Renewable Application (FY 2009) 					

CB-0081 / Central Characterization Project	34,255	13,730	25,797
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This PBS can be found within the Defense Environmental Cleanup appropriation.

This project scope includes labor, materials, and supplies for operation of mobile waste characterization systems deployed to Department of Energy generator sites for characterization of transuranic waste to be disposed at the Waste Isolation Pilot Plant, as well as centralized transuranic waste analytical services at Idaho and the Carlsbad Environmental Monitoring and Research Center. It also includes generator site services at selected sites to characterize transuranic waste for transportation to Waste Isolation Pilot Plant or to another site for final certification, when cost-effective. The use of mobile systems provides host sites with a highly regulated program that has already been certified for use. DOE reviews have concluded that the Central Characterization Project provides the most cost-effective and reliable characterization capabilities. This project also provides a DOE-wide single certification program for remote-handled transuranic waste shipments to Waste Isolation Pilot Plant at the generator/shipping sites and a DOE-wide transuranic waste shipping confirmation process required by the Waste Isolation Pilot Plant Hazardous Waste Facility Permit issued by the New Mexico Environment Department.

Site Completion (End-State)

All eligible transuranic waste requiring use of the Central Characterization Project across the DOE complex will be disposed of at the Waste Isolation Pilot Plant. The surface area will remain under institutional controls for 100 years after the disposal phase ends.

In FY 2011, the following activities are planned:

- Provide funding for Acceptable Knowledge and procedural support, mobile waste loading support at select generator sites, waste certification support, headspace gas analysis, and soils and solids analysis required for characterization activities.
- Support generator site interface for the Central Characterization Project activities, Central

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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Characterization Project administration, and Performance Demonstration Program for Resource Conservation and Recovery Act constituents.

- Support Central Characterization Project waste certification for transportation of waste consolidated at Idaho National Laboratory. The Central Characterization Project is the transportation certification program for all transuranic waste shipments from Idaho National Laboratory. (The Carlsbad Field Office will be dependent on Idaho National Laboratory to provide the waste.)
- Support Central Characterization Project for contact-handled and remote-handled transuranic waste at Los Alamos National Laboratory for disposal at the Waste Isolation Pilot Plant.
- Support Central Characterization Project for contact-handled and remote-handled transuranic waste at Oak Ridge National Laboratory for disposal at the Waste Isolation Pilot Plant.
- A portion of the scope of work typically covered in this project is being executed with American Recovery and Reinvestment Act funding.

Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
No metrics associated with this PBS					
Key Accomplishments (FY 2009)/Planned Milestones (FY 2010/FY 2011)					
<ul style="list-style-type: none"> ▪ Initiated Oak Ridge National Laboratory remote-handled shipments (FY 2009) ▪ Started standard waste box characterization at the Los Alamos National Laboratory. (FY 2009) ▪ Initiated Savannah River Site remote-handled shipments (FY 2009) ▪ Completed Los Alamos National Laboratory remote-handled shipments from existing remote-handled inventory (FY 2009) ▪ Complete 28 Argonne National Laboratory remote-handled shipments (December 2009) 					

CB-0090 / Transportation-WIPP

32,108

33,851

30,678

This PBS can be found within the Defense Environmental Cleanup appropriation.

It includes all transportation activities required to support the disposal of both contact-handled and remote-handled transuranic waste to the Waste Isolation Pilot Plant, or other designated sites. This includes carrier services, transportation packaging, shipping coordination, and stakeholder interfaces related to transportation. As required in the Waste Isolation Pilot Plant Land Withdrawal Act, this project provides for technical assistance for the purpose of training public safety officials and other

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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emergency responders in any State or Indian tribal lands through which DOE plans to transport transuranic waste to or from the Waste Isolation Pilot Plant.

In FY 2011, the following activities are planned:

- Supports fixed-price portion of the carrier contracts and contact-handled packaging (TRUPACT-II) maintenance.
- Supports shipping corridor readiness, remote-handled waste packaging, and shipping services, including Nuclear Regulatory Commission fees.
- Supports the cost-reimbursable portion of the carrier contracts: fuel, state use fees and permits, New Mexico Gross Receipts Tax, driver per diem, and safe driving bonus.
- A portion of the scope of work typically covered in this project is being executed with American Recovery and Reinvestment Act funding.

Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
No metrics associated with this PBS					
Key Accomplishments (FY 2009)/Planned Milestones (FY 2010/FY 2011)					
<ul style="list-style-type: none"> ▪ Projected Nuclear Regulatory Commission Approval of TRUPACT-III. (March 2010) ▪ Maintain shipping capability at 25 contact-handled shipments per week (September 2010) ▪ Maintain shipping capability at 21 contact-handled shipments per week (September 2011) ▪ Remote-handling shipping capability goal is 5 per week (September 2011) 					

CB-0101 / Economic Assistance to the State of New Mexico

26,909 27,854 28,771

This PBS can be found within the Defense Environmental Cleanup appropriation.

This project fulfills a requirement of the Waste Isolation Pilot Plant Land Withdrawal Act, as amended, (Public Law 102-579) which authorizes payments to the State of New Mexico in the amount of \$20,000,000 (adjusted for inflation) for each of the 14 fiscal years beginning with FY 1998. Annual payments to the State of New Mexico as required by Public Law 102-579 will be completed in FY 2011.

In FY 2011, the following activity is planned:

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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- Provides economic assistance payments to the State of New Mexico required by the Waste Isolation Pilot Plant Land Withdrawal Act, as amended, which is a Federal Law.
- Provides funds for state and local governments for road improvements, as needed, in connection with waste shipments to the Waste Isolation Pilot Plant.
- Provide funds to units of local government in Lea and Eddy counties.
- Provide for independent Environment Assessments and Economic Studies associated with the Waste Isolation Pilot Plant.

Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
No metrics associated with this PBS					
Key Accomplishments (FY 2009)/Planned Milestones (FY 2010/FY 2011)					
<ul style="list-style-type: none"> ▪ Provide funding to the State of New Mexico as required by the WIPP Land Withdrawal Act. (FY 2009/September 2010/September 2011) 					

Total, Carlsbad	231,661	230,337	220,245
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Explanation of Funding Changes

FY 2011 vs. FY 2010 (\$000)

Defense Environmental Cleanup

Waste Isolation Pilot Plant

CB-0080 / Operate Waste Disposal Facility-WIPP

- Decrease reflects the reallocation of WIPP resources necessary to optimize complex-wide TRU waste efforts. Funding for operations and site infrastructure is reduced from FY 2010 levels in order to augment waste characterization and certification activities necessary to increase the inventories of TRU waste available for shipment. This reallocation supports a steady-state shipping rate in FY 2011. -19,903

CB-0081 / Central Characterization Project

- Increase reflects greater level of characterization in this project over FY 2010 levels, where American Recovery and Reinvestment Act funds supplied majority 12,067

FY 2011 vs. FY 2010 (\$000)

of characterization activities at generator sites.

CB-0090 / Transportation-WIPP

- Decrease reflects reduced number of new shipping corridors required to be established in FY 2011.

-3,173

CB-0101 / Economic Assistance to the State of New Mexico

- No significant change.

917

Total, Carlsbad

-10,092

Idaho

Funding by Site

(dollars in thousands)

	FY 2009 Current Appropriation	FY 2009 Current Recovery Act Appropriation	FY 2010 Current Appropriation	FY 2011 Request
Idaho National Laboratory	489,239	467,875	469,168	412,000
Total, Idaho	489,239	467,875	469,168	412,000

Site Overview

Since its establishment in 1949, the Idaho Site has fulfilled numerous Department of Energy (DOE) missions including the design and testing of 52 nuclear reactors and reprocessing spent nuclear fuel to recover fissile materials. These activities resulted in an inventory of high-level, transuranic, mixed low-level and low-level wastes, which are being disposed in accordance with applicable laws and regulations. The Idaho Cleanup Project includes treating, storing and disposing of a variety of radioactive and hazardous waste streams, cleaning up the environment, removing or deactivating unneeded facilities, and removal of DOE's inventory of spent nuclear fuel and high level waste from Idaho. The Idaho Cleanup Project is also responsible for storing and dispositioning approximately 284 metric tons of spent nuclear fuel from a number of sources, including the Navy, foreign and domestic research reactors, and some commercial reactors, along with DOE-owned fuel. In addition the Idaho Cleanup Project manages spent nuclear fuel at the Fort Saint Vrain Independent Spent Fuel Storage Installation in Colorado. The site is on the United States Environmental Protection Agency's National Priorities (Superfund) List, and environmental remediation activities are required at ten Waste Area Groups encompassing 100 operable units, including Naval Reactors Facility Waste Area Group 8, and Material Fuels Complex-West Waste Area Group 9.

American Recovery and Reinvestment Act Activities

The Idaho National Laboratory American Recovery and Reinvestment Act activities are funded at \$467,875,000. Specifically, this funding will accelerate demolition of 89 excess nuclear and radiological facilities resulting in a footprint reduction of more than 812,000 square feet. With the American Recovery and Reinvestment Act funding, targeted waste retrieval per the July 2008 Agreement to Implement U. S. District Court Order dated May 25, 2006 will be accelerated; shipment of waste off-site for disposal will be accelerated; demolition of the excess nuclear and radiological facilities will also be accelerated. In addition, American Recovery and Reinvestment Act funding will also be used to treat and dispose of remote-handled transuranic waste and mixed low-level waste. Idaho National Laboratory will treat and ship off-site contact-handled transuranic waste received from other small sites from around the DOE complex greatly assisting these sites in their cleanup and closure.

Site Description

The Idaho Site is located in southeast Idaho, near the northeast end of Idaho's Snake River Plain, which extends in a broad arc from the Idaho-Oregon border on the west to the Yellowstone Plateau on the east. In 1991, the Environmental Protection Agency designated the Snake River Plain Aquifer a sole-source aquifer.

Although the total land area is 890 square miles, most of the cleanup work at the Idaho Site is performed within the site's primary facility areas: Idaho Nuclear Technology and Engineering Center, Radioactive Waste Management Complex, Advanced Test Reactor Complex (formerly the Test Reactor Area), and Materials and Fuels Complex (formerly Argonne National Laboratory-West).

The Idaho Nuclear Technology and Engineering Center is situated on 210 acres within a perimeter fence and approximately 55 acres located outside the fence. High-level waste (calcine) in bin sets, sodium-bearing waste within tanks and spent nuclear fuel in wet and dry storage represent the major cleanup activities, in addition to remediation of two active Comprehensive Environmental Response, Compensation, and Liability Act Operable Units.

The Radioactive Waste Management Complex consists of 86 facilities and is a controlled area for management and disposal of solid radioactive wastes. It includes a 97-acre Subsurface Disposal Area within a security fence, buildings for Resource Conservation and Recovery Act compliant storage of hazardous transuranic waste, and administration and support buildings. The Subsurface Disposal Area will be remediated under the WAG 7 OU 7-13/14 Comprehensive Environmental Response, Compensation, and Liability Act Record of Decision. The above-ground, stored transuranic waste is being treated at the Advanced Mixed Waste Treatment Facility and shipped to the Waste Isolation Pilot Plant for disposal.

The Test Area North was 220 acres at the north end of the Idaho National Laboratory Site. Test Area North was established in the 1950s by the United States Air Force and the Atomic Energy Commission Aircraft Nuclear Propulsion Program to support nuclear-powered aircraft research. One building remains and is used by the Department of Defense. Active Comprehensive Environmental Response, Compensation, and Liability Act remedial actions remain, such as groundwater bioremediation and pump-and-treat actions.

The Advanced Test Reactor Complex covers about 102 acres in the southwest portion of the Idaho Site. The major mission of the Reactor Technology Complex is to conduct scientific and engineering experiments for both nuclear and non-nuclear programs. The Reactor Technology Complex was established in the early 1950s. Demolition of the Materials Test Reactor and Engineering Test Reactor is complete. The Advanced Test Reactor continues to operate today.

Site Cleanup Strategy/Scope of Cleanup

Over the past decade, considerable progress has been made toward addressing legacy waste and contamination at the Idaho Site:

- Over 1,300,000 square feet of facilities have been deactivated and decommissioned to date;

- Of the 689 Comprehensive Environmental Response, Compensation, and Liability Act sites identified as being potentially contaminated, 89 percent (612 sites) have been cleaned up and have been determined not to pose any risk to a current or future resident, or resides within an Industrial Use Area under future governmental control;
- Over eight million gallons of high-level liquid waste were calcined (dried into a powdered form) into about 4,400 m³ of calcine. Reduced the volume of liquid waste remaining in the tank farm to approximately one million gallons of sodium-bearing waste;
- Eleven of 15 High Level Waste Tanks have been emptied, cleaned and grouted; (Seven—300,000 gallon tanks and Four—30,000 gallon tanks);
- At the end of FY 2009, approximately 30,000 m³ of contact-handled transuranic waste had been shipped offsite for disposal;
- Over 55,000 m³ of low-level waste has been disposed;
- By the end of 2010 all EM-assigned spent nuclear fuel will have been consolidated into dry storage;
- Substantial quantities of volatile organic compounds have been extracted and destroyed from the vadose zone beneath the Radioactive Waste Management Complex and Test Area North;
- Voluntary Consent Order activities at the Idaho Nuclear Technology and Engineering Center include closing 41 tank systems under the Resource Conservation and Recovery Act guidelines.

Site Completion (End-State)

The EM end-state vision is as follows:

- By 2012, the Idaho Site will have achieved significant risk reduction and will have placed materials in safe storage ready for disposal.
- By 2035, all spent nuclear fuel must be shipped offsite and high-level waste (calcine) must be ready to ship, to comply with the Idaho Settlement Agreement.
- The lifecycle planning estimate range is 2035 to 2044.

Idaho Nuclear Technology and Engineering Center

- Demolish or disposition all EM excess facilities and Nuclear Facilities transferred to EM;
- Treat for transportation out of Idaho liquid sodium-bearing waste stored in underground tanks;
- Empty and disposition all Tank Farm Facility tanks;
- Ship all EM spent nuclear fuel out of the state;
- Disposition all excess special nuclear material (completed);
- Complete implementation of the Waste Area Group 3 Comprehensive Environmental Response, Compensation, and Liability Act Record of Decision for Operable Unit 3-13 and Operable Unit 3-14;
- Place calcine (4,400 m³) in a condition that is road-ready for shipment out of the state by 2035.

Radioactive Waste Management Complex

- Complete shipments of stored contact-handled transuranic waste to the Waste Isolation Pilot Plant;
- Demolish and remove facilities no longer needed;
- Complete implementation of the Waste Area Group 7 Record of Decision for Operable Unit 7-13/14 through the Phase I Remedial Design Remedial Action Work Plan by remediating buried transuranic waste.

Test Area North

- Demolish all remaining EM facilities (facilities required for groundwater remediation remain) (completed);
- Complete Comprehensive Environmental Response, Compensation, and Liability Act groundwater remedial actions including in-situ bioremediation, pump and treat, and natural attenuation (Operable Unit 1-07B);
- Complete all activities in the future Comprehensive Environmental Response, Compensation, and Liability Act actions, covered under the site-wide Record of Decision 10-08.

Site-wide

- Complete implementation of the Waste Area Group 10 Record of Decision for Operable Unit OU-10-08 for site-wide groundwater, miscellaneous sites at the Idaho National Laboratory;
- Complete implementation of the Waste Area Group 10 Record of Decision for Operable Unit OU-10-04 for unexploded ordinance.

Advanced Test Reactor Complex

- Demolish all EM-owned facilities and any Nuclear Energy liabilities transferred to EM (completed);
- Disposition the Engineering Test Reactor and the Power Burst Facility Reactor under the Comprehensive Environmental Response, Compensation, and Liability Act and complete all voluntary Consent Order actions (completed).

Regulatory Framework

There are three primary regulators of the Idaho Site: the United States Environmental Protection Agency, the United States Nuclear Regulatory Commission, and the State of Idaho Department of Environmental Quality. The International Atomic Energy Agency also regulates/monitors via treaty. Several compliance agreements, amendments and consent orders executed between 1991 and 2000 govern cleanup work at the Idaho National Laboratory Site. Those agreements encompass the majority of the cleanup requirements and commitments. The five primary agreements are:

Federal Facility Agreement and Consent Order (1991): The *Federal Facility Agreement and Consent Order for the Idaho National Engineering Laboratory* between the DOE, the United States Environmental Protection Agency, and Idaho Department of Environmental Quality established a strategy and plan for cleanup at the Idaho Site. The agreement divides the Idaho Site into 10 waste area groups based on similar characteristics or geographic boundaries. Nine groups generally correspond to the Site's major facility areas. The tenth group assesses overall risk to the aquifer beneath the Site, addresses sites outside the boundaries of the Idaho Site's primary facility areas, and allows for inclusion of newly identified release sites.

Notice of Non-Compliance Consent Order (1992): This consent order (between DOE, the State of Idaho Department of Environmental Quality, and the United States Environmental Protection Agency) establishes actions and milestones to resolve Resource Conservation and Recovery Act inspection issues including configuration of stored transuranic waste and high-level waste in the Idaho Nuclear Technology and Engineering Center tank farm.

Idaho Settlement Agreement (1995): This agreement (between DOE, State of Idaho, and United States Navy) resolved a lawsuit regarding the receipt of spent nuclear fuel at the Idaho National Laboratory. The agreement specifies milestones such as the removal of all spent nuclear fuel from Idaho Site by 2035 and treatment of liquid high level radioactive waste by December 31, 2012.

Voluntary Consent Order (2000): The *Consent Order* (Idaho Department of Environmental Quality 2000) is an enforceable agreement with the Idaho Department of Environmental Quality that governs resolution of self-disclosed Resource Conservation and Recovery Act issues, most of which were related to the closure of 912 tanks and tank systems.

Site Treatment Plan: To fulfill requirements in the 1992 Federal Facility Compliance Act, the Idaho National Engineering Laboratory prepared the *Idaho National Engineering Laboratory Site Treatment Plan* to address the treatment and long-term storage of mixed low-level waste (radioactive waste mixed with hazardous chemicals). The plan also has prescriptive schedules and requirements on processing of mixed waste. This enforceable plan was approved by the State of Idaho and is updated annually.

Section 3116 of the Ronald W. Reagan National Defense Authorization Act: The Federal Facility Agreement defines the enforceable commitments for completing the closure of non-compliant tanks at Idaho. Originally all tanks were to be closed in accordance with the waste incidental to reprocessing methodology in DOE Order 435.1. In October 2004, Congress passed the Ronald W. Reagan National Defense Authorization Act of FY 2005 (Public Law 108-375,). Section 3116 of the National Defense Authorization Act allows the Secretary of Energy, in consultation with the Nuclear Regulatory Commission, to determine when waste from reprocessing of spent nuclear fuel is appropriate for onsite disposition as other than high level waste when certain criteria are met. To meet criteria established in the statute, DOE must remove waste to the maximum extent practical and submit waste determinations to Nuclear Regulatory Commission for review.

Critical Project Uncertainties and Assumptions

Current disposal pathways and schedules for spent nuclear fuel and calcined high-level waste are dependent on the new strategy for nuclear waste management and disposal. In the interim, the calcine and spent nuclear fuel is being stored safely.

Interdependencies

The Idaho Site's current interdependencies are: availability of shipping assets (containers, tractors, trailers and drivers) for the shipment of transuranic waste to the Waste Isolation Pilot Plant; availability of acceptable knowledge documentation; delivery of the remote-handled transuranic waste acceptance criteria; availability of spent nuclear fuel data, and inter-site coordination for foreign and domestic research reactor receipts. Off-site disposition of the high-level waste and spent nuclear fuel is required.

Contract Synopsis

The Idaho Site EM Program focuses on cleaning up historic contamination at the site. The primary EM site contractors are Bechtel BWXT Idaho, LLC, for operation of the Advanced Mixed Waste Treatment Project through September 30, 2009, with options for extension through March 2010, which supports transuranic waste shipments to the Waste Isolation Pilot Plant, and the CH2M Hill Washington Group, whose contract extends through September 30, 2012. A final Advanced Mixed Waste Treatment Project contract is scheduled to be issued in FY 2010.

Cleanup Benefits

Cleanup of the Idaho Site will reduce the risk of contamination of the Snake River Plain Aquifer from nuclear and hazardous waste and will eliminate infrastructure, surveillance and maintenance costs by aggressively reducing the footprint through consolidation of cleanup operations, (primarily to the Idaho Nuclear Technology and Engineering Center), and deactivation and decommissioning of facilities at several other Idaho Site areas.

The Idaho Site has packaged and shipped all nuclear material off-site and all EM-owned spent nuclear fuel will be stabilized in interim dry storage. By 2012, the west side of the Tank Farm Facility will be closed, and most facilities demolished at three facility areas (Power Burst Facility, Test Area North, and Reactor Technology Complex). The remaining facilities will be in a cold, dark, and dry status, awaiting final disposition.

The targeted transuranic waste identified in the current Idaho Cleanup Project contract, that is buried in the Subsurface Disposal Area will be retrieved and shipped out of Idaho, the stored remote-handled transuranic waste, including the remote-handled transuranic waste that was transferred from the Office of Nuclear Energy to EM in 2009 (located at the Materials and Fuels Complex) will be packaged and shipped to the Waste Isolation Pilot Plant; the liquid sodium bearing waste will have been retrieved and stabilized; the remaining Tank Farm Facility tanks closed; and the EM footprint will have been consolidated to two facility areas.

Direct maintenance and repair at the Idaho National Laboratory is estimated to be \$28,598,000.

Funding Schedule by Activity

(dollars in thousands)

	FY 2009	FY 2010	FY 2011
Defense Environmental Cleanup			
Idaho National Laboratory			
Idaho National Laboratory			
ID-0012B-D / SNF Stabilization and Disposition-2012 (Defense)	16,000	34,268	43,337
ID-0013 / Solid Waste Stabilization and Disposition	175,000	143,500	172,631
ID-0014B / Radioactive Liquid Tank Waste Stabilization and Disposition-2012	156,600	185,550	118,273
ID-0030B / Soil and Water Remediation-2012	95,000	91,500	68,959
ID-0040B / Nuclear Facility D&D-2012	29,294	5,450	0
ID-0100 / Idaho Community and Regulatory Support	3,867	3,900	3,900
Subtotal, Idaho National Laboratory	475,761	464,168	407,100
Non-Defense Environmental Cleanup			
Small Sites			
Idaho National Laboratory			
ID-0012B-N / SNF Stabilization and Disposition-2012 (Non-Defense)	13,478	5,000	4,900
Total, Idaho	489,239	469,168	412,000

Performance Measure Summary

	Complete through FY 2009	Complete through FY 2010	Complete through FY 2011	Life-Cycle	FY 2011 % Complete
Idaho					
Geographic Sites Eliminated (number of sites)	4	4	4	5	80.0%
Enriched Uranium packaged for disposition (Number of Containers)	1,586	1,586	1,586	1,586	100.0%
High-Level Waste packaged for final disposition (Number of Containers)	0	0	0	6,660	0%
Industrial Facility Completions (Number of Facilities)	143	143	143	255	56.1%
Liquid Waste in Inventory eliminated (Thousands of Gallons)	0	0	100	900	11.1%
Liquid Waste Tanks closed (Number of Tanks)	7	7	7	11	63.6%
Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	67,688	69,518	71,568	109,114	65.6%
Material Access Areas eliminated (Number of Material Access Areas)	1	1	1	1	100.0%
Nuclear Facility Completions (Number of Facilities)	28	28	28	92	30.4%
Radioactive Facility Completions (Number of Facilities)	35	35	35	68	51.5%
Remediation Complete (Number of Release Sites)	520	599	603	636	94.8%
Spent Nuclear Fuel packaged for final	0	0	0	253	0%

disposition (Metric Tons of Heavy Metal)					
Transuranic Waste shipped for disposal (Cubic meters) - CH	35,423	41,123	46,823	83,155	56.3%
Transuranic Waste shipped for disposal (Cubic meters) - RH	92	92	92	117	78.6%

Detailed Justification

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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ID-0012B-D / SNF Stabilization and Disposition-2012 (Defense)

16,000 34,268 43,337

This PBS can be found within the Defense Environmental Cleanup appropriation.

The scope of this project includes stabilizing legacy spent nuclear fuel through 2012 and managing the receipt of off-site spent nuclear fuel shipments. EM currently manages and stores approximately 262 metric tons of spent nuclear fuel at the Idaho Site. The EM plan includes the receipt of approximately 22 metric tons of spent nuclear fuel from off-site locations, including Foreign and Domestic Research Reactor spent nuclear fuel from FY 2005 through FY 2027. The plan also includes the receipt of approximately 0.5 metric tons of spent nuclear fuel through FY 2012 from the on-site operating Advanced Test Reactor. This project includes support costs for the National Spent Nuclear Fuel Program.

This project includes costs to accelerate the transfer of 3,186 fuel handling units of legacy spent nuclear fuel from wet to dry storage ahead of the Idaho Settlement Agreement date of FY 2023.

In FY 2011, the following activities are planned:

- Maintain the Chemical Processing Plant building-666 and wet stored fuel assigned to Navy or Nuclear Energy.
- Maintain all dry fuel storage facilities and upgrade the Chemical Processing Plant building-603.
- Evaluate nuclear fuel storage requirements, perform facility aging analyses, and perform facility maintenance upgrades.
- Receive and unload Domestic and Foreign Research Reactor spent nuclear fuel.

Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
No metrics associated with this PBS					
Key Accomplishments (FY 2009)/Planned Milestones (FY 2010/FY 2011)					
<ul style="list-style-type: none"> ▪ Receive Foreign Research Reactor and Domestic Spent Nuclear Fuel shipments. (FY 2009/September 2010/September 2011) 					

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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- Receive up to 31 Advanced Test Reactor fuel shipments (September 2010/September 2011)
- Complete transfer of all EM-owned SNF to dry storage. (September 2010)

ID-0013 / Solid Waste Stabilization and Disposition **175,000** **143,500** **172,631**

This PBS can be found within the Defense Environmental Cleanup appropriation.

This waste treatment and disposal activity accelerates the disposition of stored transuranic waste, 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 to reduce operating costs. The various waste inventories to be disposed by this project were generated primarily by other DOE sites and also by active operations at the Idaho Site. Approximately 65,000 m³ of stored transuranic waste and alpha mixed low-level waste (comprised of both contact-handled and remote-handled waste) will be characterized, treated, and shipped to the Waste Isolation Pilot Plant or another suitable disposition site. A backlog of legacy mixed low-level waste (approximately 2,250 m³) has been eliminated. In 2009, 34 cubic meters of remote-handled mixed low-level waste was transferred from the Office of Nuclear Energy to EM.

Contact-handled transuranic waste will be processed in the Advanced Mixed Waste Treatment Facility and shipped to the Waste Isolation Pilot Plant for disposal. On-site low-level waste disposal at the Radioactive Waste Management Complex will continue for remote-handled low-level waste. The scope of this project includes environmental monitoring and compliance activities for air, water, waste, soils, and biota surveillance; and supports the Environmental Oversight and Monitoring Agreement within the State of Idaho.

Disposal of contact handled low-level waste at the Radioactive Waste Management Complex has ceased, but disposal of remote-handled low-level waste in the Subsurface Disposal Area will continue for several more years. Mixed low-level waste is disposed off site at either the Nevada Test Site or Energy Solutions in Utah.

In FY 2011, the following activities are planned:

- Provide for site-wide environmental compliance.
- Maintenance and operation of the Radioactive Waste Management Complex infrastructure including utility systems, project management, engineering, training, environmental safety and health and quality assurance. This project also includes monitoring of air, water, soils, and biota surveillance.
- Meet requirements of the Idaho Settlement Agreement by disposing of remote-handled low-level

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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waste at the Radioactive Waste Management Complex disposal pit; disposing of mixed low-level waste at appropriate off-site disposal facilities; characterize and certify remote-handled transuranic waste at the Idaho Nuclear Technology and Engineering Center in preparation for shipment to the Waste Isolation Pilot Plant; prepare facilities and equipment for transfer and treatment of sodium contaminated remote-handled transuranic and mixed low-level waste; ship stored contact-handled transuranic waste to the Waste Isolation Pilot Plant using the Advanced Mixed Waste Treatment Facility; and receive, characterize, certify, transuranic waste from other DOE sites in preparation for shipment to the Waste Isolation Pilot Plant.

- Address issues and challenges related to higher risk activities and more difficult stored contact handled transuranic waste containers.
- A portion of the scope of work typically covered in this project is being executed with American Recovery and Reinvestment Act funding.

Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
Transuranic Waste shipped for disposal (Cubic meters) - CH	33,795	39,495	45,195	66,700	68.0%
Transuranic Waste shipped for disposal (Cubic meters) - RH	92	92	92	117	79.0%
Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	67,688	69,518	71,568	77,953	92.0%
Key Accomplishments (FY 2009)/Planned Milestones (FY 2010/FY 2011)					
<ul style="list-style-type: none"> ▪ Ship 5,700 cubic meters of contact-handled transuranic waste to the Waste Isolation Pilot Plant (FY 2009/September 2010/September 2011) ▪ Disposed of 3,805 cubic meters of low-level waste and mixed low-level waste (FY 2009) ▪ Dispose of 1,400 cubic meters of low-level waste and mixed low-level waste (September 2010) ▪ Ship 7 cubic meters of remote-handled-transuranic waste to the Waste Isolation Pilot Plant (September 2010) ▪ Ship 2,050 cubic meters of mixed/low-level waste (September 2011) 					

ID-0014B / Radioactive Liquid Tank Waste Stabilization and Disposition-2012

156,600 185,550 118,273

This PBS can be found within the Defense Environmental Cleanup appropriation.

The overall objectives of this project are to treat and dispose of the sodium-bearing tank wastes, close

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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the tank farm tanks, and maintain Idaho Nuclear Technology and Engineering Center. The primary focus is the design, construction, and operation of a facility that will retrieve and treat the sodium bearing liquids and associated tank solids for disposal off-site.

This project also includes activities to support the preparation of stored high-level waste calcine for final disposition. These activities include: 1) development of bin set retrieval technology; 2) Resource Conservation and Recovery Act regulatory initiatives to allow disposal of calcine; 3) issuance of a Record of Decision in 2009 and calcine treatment technology and development; 4) conceptual and preliminary design; and 5) submission of a Resource Conservation and Recovery Act Part B Permit in 2012.

This project includes design and construction of the Sodium Bearing Waste Treatment Facility. \$86,700,000 was appropriated in FY 2009 for construction of the facility (06-D-401), \$93,700,000 was appropriated in FY 2010, and \$6,500,000 is requested in FY 2011.

In FY 2011, the following activities are planned:

- Complete the sodium-bearing waste treatment facility testing and readiness verification in preparation of a hot startup in FY 2011.
- Continue providing acceptable Idaho Nuclear Technology and Engineering Center utilities, maintenance and operations for the process waste system, support labs, and existing process facilities.
- Continue Liquid Waste Facility closure activities, and provide safe Resource Conservation and Recovery Act compliant operations.

Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
Liquid Waste in Inventory eliminated (Thousands of Gallons)	0	0	100	900	11.0%
Liquid Waste Tanks closed (Number of Tanks)	7	7	7	11	64.0%
Transuranic Waste shipped for disposal (Cubic meters) - RH	0	0	0	0	100.0%
Key Accomplishments (FY 2009)/Planned Milestones (FY 2010/FY 2011)					
<ul style="list-style-type: none"> ▪ Issued Record of Decision (ROD) for the Environmental Impact Statement for path forward to treat calcine waste (December 2009) ▪ Continue Liquid Waste Facility closure activities (December 2010) ▪ Continue construction of the Sodium Bearing Waste Project (December 2010) 					

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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- Commence Sodium Bearing Waste operations (August 2011)
- Complete construction of the Sodium Bearing Waste Project (August 2011)

ID-0030B / Soil and Water Remediation-2012

95,000

91,500

68,959

This PBS can be found within the Defense Environmental Cleanup appropriation.

The objective of this project is remediation of contaminated soil and groundwater and closure of legacy Resource Conservation and Recovery Act issues at the Idaho National Laboratory Site via a Voluntary Consent Order, to reduce risk to the Snake River Plain Aquifer.

This project scope also includes all environmental monitoring to confirm effectiveness of selected record of decision remedies for protection of the Snake River Plain Aquifer and maintenance of institutional controls. In addition, assessment of the contamination present, the risk of aquifer contamination, and the technical removal and disposal of chemical contamination, stabilization of short-lived radioactive contamination, controlling access through institutional controls, consolidation of mixed waste in the Idaho Comprehensive Environmental Response, Compensation, and Liability Act Disposal Facility, implementation of groundwater bioremediation, and implementation of long-term monitoring of the aquifer and ecosystem.

In FY 2011, the following activities are planned:

- Continue risk reduction through implementation of the Comprehensive Environmental Response, Compensation, and Liability Act Record of Decision for buried transuranic waste at the Waste Area Group 7 (Radioactive Waste Management Complex) subsurface disposal area.
- Continue shipping retrieved Waste Area Group 7 contact-handled targeted waste out of Idaho for disposal.
- Continue groundwater treatment and monitoring at Waste Area Group 1 (Test Area North).
- Continue maintenance of remedies at Waste Area Group 2 (Test Reactor Area); Waste Area Group 4 (Central Facility Area); Waste Area Group 5 (Power Burst Facility/Auxiliary Reactor Area); and Waste Area Group 6 (Experimental Breeder Reactor/BORAX).
- Continue implementation of the Comprehensive Environmental Response, Compensation, and Liability Act Record of Decision for the Waste Area Group 3 (Idaho Nuclear Technology and Engineering Center) tank farm soils and groundwater.
- Continue implementation of the Comprehensive Environmental Response, Compensation, and Liability Act Record of Decision for Waste Area Group (OU 10-08 (Site wide) site wide ground

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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water, miscellaneous sites, and future sites.

- Continue implementation of the Comprehensive Environmental Response, Compensation, and Liability Act Record of Decision for Waste Area Group 10 (OU 10-04) unexploded ordinance.

Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
Transuranic Waste shipped for disposal (Cubic meters) - CH	1,628	1,628	1,628	9,057	18.0%
Remediation Complete (Number of Release Sites)	250	329	333	343	97.0%
Key Accomplishments (FY 2009)/Planned Milestones (FY 2010/FY 2011)					
<ul style="list-style-type: none"> Completed retrieval operational period for Accelerated Retrieval Project II for Pits 4 & 6 (FY 2009) Continued buried waste retrievals ~850 cubic meters. (FY 2009) Complete Waste Area Group 3 Operable Unit 3-13 Group 3 Surface Sites Remediation (FY 2009) Submit for review the Remedial Design Remedial Action Work Plan for review for Waste Area Group 10 Operable Unit 10-08 (June 2010) Continue buried waste retrievals ~1800 cubic meters per year (September 2010/September 2011) Continue buried waste retrievals ~650 cubic meters per agreement with the Carlsbad Field Office. (September 2010) Plan to dispose of 4718 cubic meters of low-level and mixed low-level wastes generated from ER & D&D Activities (October 2010) Conduct five-year Comprehensive Environmental Response, Compensation, and Liability Act review. (October 2010) Submit Draft Operable Unit 10-04 Phase III Remedial Action Report for gunrange lead contamination (March 2011) Projected to complete Phase IV of the Waste Area Group 10 Operable Unit 10-04 Remedial Action (September 2011) Projected to complete Phase I of the Waste Area Group 3 Operable Unit 3-14 Remedial Action (September 2011) 					

ID-0040B / Nuclear Facility D&D-2012

29,294

5,450

0

This PBS can be found within the Defense Environmental Cleanup appropriation.

This project scope includes deactivation and final disposition of EM-owned, high-risk radiologically contaminated Idaho National Laboratory buildings, deactivation of four spent fuel storage pools

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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In FY 2011, the following activities are planned:

- Continue the United States Geological Survey groundwater monitoring and subsurface investigation with analysis of contaminants and transport mechanisms affecting the Snake River Aquifer, both on-site and off-site.
- Payment of fees for the Title V Air Permit and technical assistance for air quality compliance.
- Continue support for the Idaho Site Citizen Advisory Board.

Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
No metrics associated with this PBS					
Key Accomplishments (FY 2009)/Planned Milestones (FY 2010/FY 2011)					
<ul style="list-style-type: none"> ▪ DEQ Grants enable obtaining closure plans, permits/permit mods; Comprehensive Response, Compensation, and Liability Act (FY 2009/September 2010) ▪ DEQ grants will enable obtaining hazardous waste management closure plans, permits or permit mods; Comprehensive Response, Compensation, and Liability Act (September 2010/September 2011) 					

ID-0012B-N / SNF Stabilization and Disposition-2012 (Non-Defense)

13,478 5,000 4,900

This PBS can be found within the Non-Defense Environmental Cleanup appropriation.

The purpose of this project is to maintain and operate the Nuclear Regulatory Commission licensed facilities. This includes the management of approximately 15 metric tons of spent nuclear fuel presently stored at Fort St. Vrain in Colorado and approximately 82 metric tons of spent nuclear fuel presently stored on-site in the Three Mile Island Independent Spent Nuclear Fuel Storage Installations. Currently, the two facilities continue to operate within their license.

In FY 2011, the following activities are planned:

- Provide payments to the Nuclear Regulatory Commission for licensing-related activities related to both Fort St. Vrain and Three Mile Island-2 Spent Nuclear Fuel.
- Provide security for Fort St. Vrain Spent Nuclear Fuel.
- Monitor Three Mile Island-2 Spent Nuclear Fuel.

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
No metrics associated with this PBS					

Total, Idaho	489,239	469,168	412,000
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Explanation of Funding Changes

FY 2011 vs. FY 2010 (\$000)

Defense Environmental Cleanup
Idaho National Laboratory

ID-0012B-D / SNF Stabilization and Disposition-2012 (Defense)

- Increase is attributable to the Building 603 infrastructure upgrades to permit additional wet to dry storage of spent nuclear fuel. 9,069

ID-0013 / Solid Waste Stabilization and Disposition

- Increase will permit greater volumes of stored contact-handled transuranic waste to be shipped to the Waste Isolation Pilot Plant. It will also allow for more time consuming and riskier work to be completed in preparation for disposal. In addition, more mixed low-level and low-level waste can be disposed. 29,131

ID-0014B / Radioactive Liquid Tank Waste Stabilization and Disposition-2012

- Decrease is due to the completion of fabrication and procurement activities; construction and construction turnover activities at the Sodium Bearing Waste Treatment Facility with hot start up expected in FY 2011. -67,277

ID-0030B / Soil and Water Remediation-2012

- Decrease is due to increased exhumations of buried contact-handled transuranic waste in FY 2010 using uncosted carryover of the American Recovery and Reinvestment Act funding. -22,541

ID-0040B / Nuclear Facility D&D-2012

- Decrease reflects decontamination and decommissioning near term work-scope being completed using uncosted carryover from the American Recovery and Reinvestment Act funding. -5,450

FY 2011 vs. FY 2010 (\$000)

Non-Defense Environmental Cleanup

Small Sites

ID-0012B-N / SNF Stabilization and Disposition-2012 (Non-Defense)

- No significant change.

-100

Total, Idaho

-57,168

**06-D-401, Sodium Bearing Waste Treatment Project,
Idaho National Laboratory (INL) Idaho
Project Data Sheet (PDS) is for PED/Construction**

1. Significant Changes

The most recent DOE Order 413.3A approved critical decision is Critical Decision-3c, start of construction, approved on August 28, 2007 with a Total Project Cost of \$461,608K. The latest approved baseline change was on December 8, 2008 with a Total Project Cost of \$570,893K. A Federal Project Director with certification level II has been assigned to this project.

2. Design, Construction, and D&D Schedule

(fiscal quarter or date)

	CD-0	CD-1	PED Complete	CD-2	CD-3	CD-4	D&D Start	D&D Complete
FY 2006	2Q FY2005	N/A	4Q FY2006	N/A	1Q FY2008	3Q FY2009	TBD	TBD
FY 2007	4Q FY2005	N/A	1Q FY2007	N/A	1Q FY2007	3Q FY2008	N/A	N/A
FY 2006 Reprogram	4Q FY2005	N/A	2Q FY2007	N/A	3Q FY2007	2Q FY2009	N/A	N/A
FY 2008	4Q FY2005	N/A	3Q FY2007	N/A	3Q FY2007	4Q FY2010	N/A	N/A
FY 2009	4Q FY2005	4Q FY2005	4Q FY2007	1Q FY2007	4Q FY2007	4Q FY2010	N/A	N/A
FY 2009 Notification	4Q FY2005	4Q FY2005	4Q FY2007	1Q FY2007	4Q FY2007	4Q FY2011	N/A	N/A
FY 2010	4Q FY2005	4Q FY2005	4Q FY2007	1Q FY2007	4Q FY2007	4Q FY2011	N/A	N/A
FY 2011	4Q FY2005	4Q FY2005	4Q FY2007	1Q FY2007	4Q FY2007	4Q FY2011	N/A	N/A

CD-0 – Approve Mission Need

CD-1 – Approve Alternative Selection and Cost Range

CD-2 – Approve Performance Baseline

CD-3 – Approve Start of Construction

CD-4 – Approve Start of Operations or Project Closeout

D&D Start – Start of Demolition & Decontamination (D&D) work

D&D Complete – Completion of D&D work

Note (D&D): The "one-for-one" requirement is planned to be offset with D&D "banked excess".

(fiscal quarter or date)

Performance Baseline Validation	CD-2/3A (Start of Construction for long lead items)	CD-3B (Early Site Preparation)	CD-3C (Start Balance of Construction)	CD-4			
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FY 2006					
FY 2007					
FY 2006 Reprogram					
FY 2008					
FY 2009	1Q FY2007	4Q FY2006	1Q FY2007	TBD	TBD
FY 2009 Notification	1Q FY2007	4Q FY2006	1Q FY2007	4Q FY2007	4Q FY2011
FY 2010	1Q FY2007	4Q FY2006	1Q FY2007	4Q FY2007	4Q FY2011
FY 2011	1Q FY2007	4Q FY2006	1Q FY2007	4Q FY2007	4Q FY2011

CD-2A/3A/3B: Long Lead for Equipment, Early Site Preparation
 CD-3C: Start Balance of Construction
 CD-4: Approve Start of Operations or Project Closeout

3. Baseline and Validation Status

(Fiscal Quarter)

	TEC, PED	TEC, Construction	TEC, Total	OPC Except D&D	OPC, D&D	OPC, Total	TPC
FY 2006	54,280	250,230	304,510	74,700	0	74,700	379,210
FY 2007	54,188	249,992	304,180	74,700	0	74,700	378,880
FY 2008	86,188	257,520	343,708	117,900	0	117,900	461,608
FY 2009	86,188	269,620	355,808	105,800	0	105,800	461,608
FY 2009 Notification	86,188	351,170	437,358	133,535	0	133,535	570,893
FY 2010	86,188	351,170	437,358	133,535	0	133,535	570,893
FY 2011	86,188	360,229 ⁽¹⁾	446,417 ⁽¹⁾	124,476 ⁽¹⁾	0	124,476 ⁽¹⁾	570,893

Note (D&D): The "one-for-one" requirement is planned to be offset with D&D "banked excess".

The FY 2008 and FY 2009 values in this table include \$37,500,000 of pre Critical Decision-0 Other Project Costs for this project, which was not explicitly identified in the previous data sheet values.

(1) – The FY 2010 Budget included a plus up in TEC, Construction which is offset by corresponding decrease to OPC.

The Total Estimated Cost includes design funds requested under Project Engineering and Design 04-D-414. Other Project Costs except D&D total includes contractor fee.

4. Project Description, Justification, and Scope

This project supports the equipment procurement, construction, construction management, quality assurance, and project management for the Sodium Bearing Waste Treatment Project. The design effort will develop the final detailed design of the treatment facility and establish the scope, schedule, and cost baselines for the project. Design funding has been appropriated on a separate Project Engineering and Design line item project (04-D-414). The Sodium Bearing Waste Treatment Project is one of several projects that are managed under Idaho National Laboratory's Idaho Cleanup Project and are part of the process to close the Idaho Nuclear Technology and Engineering Center's Tank Farm Facility. In order for these projects to meet the cleanup schedule, they will be managed together and their activities coordinated under the Idaho Cleanup Project.

The Sodium Bearing Waste Treatment Project supports the Department of Energy's EM mission of safely storing/treating liquid radioactive wastes. The Sodium Bearing Waste Treatment Project, as planned, supports the EM cleanup initiative and reduces risk to the environment. In addition, it supports several Federal Facilities Compliance Act commitments made with the State of Idaho.

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 is liquid mixed transuranic waste, which is stored in three of the eleven tanks. 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 on-going waste management and decontamination activities at Idaho Nuclear Technology and Engineering Center. The present inventory of approximately 900,000 gallons of sodium bearing waste is stored in three 300,000 gallon, underground tanks in the Tank Farm Facility with one 300,000 gallon spare tank. These tanks are between 35 and 45 years old and were constructed prior to the establishment of the Resource Conservation and Recovery Act regulations. These four tanks are located in concrete vaults of a design that do not meet present structural safety requirements (the "pillar and panel vaults"), and none of the tanks have secondary containment capabilities that meet current Resource Conservation and Recovery Act regulations. The waste management/storage systems at 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.

A series of disputes over waste management and treatment, new waste, and spent nuclear fuel shipments into the State of Idaho resulted in a court-ordered Settlement Agreement between Idaho, the DOE and the U.S. Navy in October 1995. Among other things, the Settlement Agreement requires DOE to "cease-use" of the Tank Farm Facility tanks by December 31, 2012, because of their age, Resource Conservation and Recovery Act non-compliant configuration, and the seismic risk of potential release of their contents to the underlying Snake River Plain Aquifer. The evacuation of the tank contents by "calcination" (or other treatment) is also required. The 1998 Notice of Noncompliance-Consent Order Modification also requires cease-use of the Tank Farm Facility by December 31, 2012.

The scope and primary goal of the project is to design and construct a treatment process system using the steam reforming process to treat the sodium bearing waste (including solids) currently stored in the Tank Farm Facility tanks, along with any newly generated liquid waste produced through 2012.

The Sodium Bearing Waste Treatment Project has unique political, technical, cost, and schedule risks. The facility will mitigate two major technical risks by being designed and constructed so that it can treat sodium

bearing waste and could be converted to allow processing of the calcine high level waste suitable for transport outside Idaho. These design features include increased cell shielding and seismic protection. Further facility and equipment upgrades would be needed to develop these additional capabilities if they become necessary.

The FY 2011 budget request will accomplish the following:

- Completion of Fabrication and Procurements Activities
- Completion of Construction Activities
- Completion of Construction Turnover Activities

The project is being conducted in accordance with the project management requirements in DOE O 413.3A and DOE M 413.3-1, Program and Project Management for the Acquisition of Capital Assets, and all appropriate project management requirements have been met.

5. Financial Schedule

(dollars in thousands)

Appropriations	Obligations	Costs
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Total Estimated Cost (TEC)

PED

FY 2004	20,379	0	0
FY 2005	24,701	45,080	4,000
FY 2006	41,108	41,108	50,088
FY 2007	0	0	28,831
FY 2008	0	0	3,269
FY 2009	0	0	0
FY 2010	0	0	0
FY 2011	0	0	0
Total, PED	86,188	86,188	86,188

Construction

FY 2006	30,729	30,729	1,418
FY 2007	31,000	31,000	43,932
FY 2008	111,600	111,600	76,837
FY 2009	86,700	86,700	123,806
FY 2010	93,700	93,700	107,000
FY 2011	6,500	6,500	7,236
Total, Construction	360,229	360,229	360,229

TEC

FY 2004	20,379	0	0
FY 2005	24,701	45,080	4,000
FY 2006	71,837	71,837	51,506
FY 2007	31,000	31,000	72,763
FY 2008	111,600	111,600	80,106
FY 2009	86,700	86,700	123,806
FY 2010	93,700	93,700	107,000
FY 2011	6,500	6,500	7,236
Total, TEC	446,417	446,417	446,417

(dollars in thousands)

	Appropriations	Obligations	Costs
Other Project Cost (OPC)			
OPC except D&D			
FY 2004	37,500	37,500	37,500
FY 2005	2,842	2,842	2,842
FY 2006	4,561	4,561	4,561
FY 2007	12,611	12,611	12,611
FY 2008	3,343	3,343	3,343
FY 2009	9,640	9,640	4,156
FY 2010	19,902	19,902	21,150
FY 2011	34,077	34,077	47,313
	<hr/>	<hr/>	<hr/>
Total, OPC except D&D	124,476	124,476	124,476
OPC			
FY 2004	37,500	37,500	37,500
FY 2005	2,842	2,842	2,842
FY 2006	4,561	4,561	4,561
FY 2007	12,611	12,611	12,611
FY 2008	3,343	3,343	3,343
FY 2009	9,640	9,640	4,156
FY 2010	19,902	19,902	21,150
FY 2011	34,077	34,077	47,313
	<hr/>	<hr/>	<hr/>
Total, OPC	124,476	124,476	124,476
Total Project Cost (TPC)			
FY 2004	57,879	37,500	37,500
FY 2005	27,543	47,922	6,842
FY 2006	76,398	76,398	56,067
FY 2007	43,611	43,611	85,374
FY 2008	114,943	114,943	83,449
FY 2009	96,340	96,340	127,962
FY 2010	113,602	113,602	128,150
FY 2011	40,577	40,577	54,549
	<hr/>	<hr/>	<hr/>
Total, TPC	570,893	570,893	570,893

Note (D&D): The "one-for-one" requirement is planned to be offset with D&D "banked excess".

General Note: \$37,500,000 of pre-Critical Decision-0 costs for the Sodium Bearing Waste Treatment Facility is included in FY 2004 Other Project Costs (OPC).

Note (OPC and Construction): History updated based on actual costs through FY 2009.

6. Details of Project Cost Estimate

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design (PED)			
Design	86,188	86,188	86,188
Contingency	0	0	0
Total, PED	86,188	86,188	86,188
Construction			
Site Preparation	24,850	24,850	24,850
Equipment	94,887	94,887	94,887
Other Construction	200,533	200,533	115,383
Contingency	39,959 ⁽¹⁾	30,900	34,500
Total, Construction	360,229	351,170	269,620
Total, TEC	446,417	437,358	355,808
Contingency, TEC	39,959 ⁽¹⁾	30,900	34,500
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning	37,500	37,500	37,500
Conceptual Design	44,330	44,330	56,865
Start-Up	30,505	30,505	6,935
Contingency	12,141 ⁽¹⁾	21,200	4,500
Total, OPC except D&D	124,476	133,535	105,800
D&D			
D&D	N/A	N/A	N/A
Contingency	N/A	N/A	N/A
Total, OPC	124,476	133,535	105,800
Contingency, OPC	12,141 ⁽¹⁾	21,200	4,500
Total, TPC	570,893	570,893	461,608
Total, Contingency	52,100 ⁽¹⁾	52,100	39,000

General Note: Other Project Costs Other than D&D total includes contractor fee and \$37,500,000 of pre Critical Decision-0 costs.

Note (D&D): The "one-for-one" requirement is planned to be offset with D&D "banked excess".

(1)- Total, Contingency includes \$32,100K of management reserve for the project which is being controlled as DOE-held contingency.

7. Funding Profile History

(\$K)

Request		Prior Years	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	Out-years	Total
FY 2004*	TEC	20,500	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
	OPC	45,400	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
	TPC	69,900	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
FY 2005	TEC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	OPC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TPC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FY 2006*	TEC	291,310	13,200	0	0	0	0	0	0	304,510
	OPC	74,700	0	0	0	0	0	0	0	74,700
	TPC	366,010	13,200	0	0	0	0	0	0	379,210
FY 2007 Performance Baseline	TEC	281,147	23,033	0	0	0	0	0	0	304,180
	OPC	74,700	0	0	0	0	0	0	0	74,700
	TPC	355,847	23,033	0	0	0	0	0	0	378,880
FY 2008	TEC	335,317	8,391	0	0	0	0	0	0	343,708
	OPC	104,800	13,100	0	0	0	0	0	0	117,900
	TPC	440,117	21,491	0	0	0	0	0	0	461,608
FY 2009	TEC	346,391	9,417	0	0	0	0	0	0	355,808
	OPC	92,700	13,100	0	0	0	0	0	0	105,800
	TPC	439,091	22,517	0	0	0	0	0	0	461,608
FY 2010	TEC	346,217	83,700	7,441	0	0	0	0	0	437,358
	OPC	66,128	19,902	47,505	0	0	0	0	0	133,535
	TPC	412,345	103,602	54,946	0	0	0	0	0	570,893
FY 2011	TEC	346,217	93,700 ⁽¹⁾	6,500 ⁽¹⁾	0	0	0	0	0	446,417
	OPC	66,128	19,902	38,446 ⁽¹⁾	0	0	0	0	0	124,476
	TPC	412,345	113,602	44,946	0	0	0	0	0	570,893

* For prior years both Conceptual Design and Project Engineering and Design are included.

(1) – The FY 2010 Budget included a \$10,000K plus up in TEC which is offset by corresponding decreases to FY 2011 TEC and FY 2011 OPC.

8. Related Operations and Maintenance Funding Requirements

Start of Operation or Beneficial Occupancy (fiscal year)	4Q FY2011
Expected Useful Life (number of years)	TBD
Expected Future Start of D&D (fiscal year)	TBD

(Related Funding requirements)

(Dollars in Thousands)

Annual Costs		Life Cycle Costs	
Current Total Estimate	Previous Total Estimate	Current Total Estimate	Previous Total Estimate

(Dollars in Thousands)

	Annual Costs		Life Cycle Costs	
	Current Total Estimate	Previous Total Estimate	Current Total Estimate	Previous Total Estimate
Operations	43,100	32,000	61,000	46,645
Maintenance	4,200	4,372	6,000	7,913
Total, Operations & Maintenance	47,300	36,372	67,000	54,558

General Note: The "one-for-one" requirement is planned to be offset with D&D "banked excess".

9. Required D&D Information

Area	Square Feet
Area of new construction	58,000
Area of existing facility(s) being replaced	TBD
Area of additional D&D space to meet the "one-for-one" requirement	TBD

General Note: The "one-for-one" requirement is planned to be offset with D&D "banked excess".

10. Acquisition Approach

Design and construction services will be obtained through the new Idaho Cleanup Project Contractor and that contractor will manage the overall design and construction effort and interfaces with the existing operating plant.

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

Oak Ridge

Funding by Site

(dollars in thousands)

	FY 2009 Current Appropriation	FY 2009 Current Recovery Act Appropriation	FY 2010 Current Appropriation	FY 2011 Request
East Tennessee Technology Park	208,938	118,200	225,100	230,489
Oak Ridge National Laboratory	129,125	229,910	83,300	108,102
Oak Ridge Reservation	95,513	80,000	41,868	30,334
Y-12 Plant	38,092	327,000	53,500	63,775
Total, Oak Ridge	471,668	755,110	403,768	432,700

Site Overview

The cleanup program mission in Oak Ridge will be complete when cleanup has safely reduced risks to the public, workers, and the environment at the East Tennessee Technology Park, Oak Ridge National Laboratory (Bethel Valley and Melton Valley watersheds), Y-12 National Security Complex, and Off-site Areas. These risks include potential exposure to contamination and industrial hazards resulting from decades of uranium enrichment, research, and nuclear weapons-related operations.

American Recovery and Reinvestment Act activities:

The Oak Ridge American Recovery and Reinvestment Act activities are funded at \$558,110,000 for Defense, \$78,800,000 for Non-Defense, and \$118,200,000 for the Uranium Enrichment Decontamination and Decommissioning Fund, for a total of \$755,110,000.

Specifically, this funding will provide the Oak Ridge National Laboratory and Y-12 sites the ability to accelerate demolition of high risk surplus contaminated facilities, and remediate the most significant source of mercury contamination to surface water, demolish surplus contaminated facilities and perform soil remediation. Under the American Recovery and Reinvestment Act, the Transuranic Waste Processing Center scope will include receipt, processing, and repackaging of contact-handled and remote-handled transuranic waste for subsequent disposal at an approved repository. Transuranic waste will be disposed of at the Waste Isolation Pilot Plant in Carlsbad, New Mexico. Low-level and mixed low-level originating from transuranic waste will be disposed at the Nevada Test Site or other approved disposal sites. Legacy transuranic waste disposition is expected to be accelerated by at least one year.

The following specific projects will take place at the Oak Ridge National Laboratory: Cap Bethel Valley Burial Grounds; Install Melton Valley Sentinel Wells; demolition and disposition of Buildings 3026 C&D; Oak Ridge National Laboratory Small Facilities demolition (11 facilities); and remove Tank W1A and remediate surrounding soils and Building 3038 Clean-Out. The following projects will take place at the Y-12 National Security Complex as follows: storm sewers in the West End Mercury Area; Y-12 Salvage Yard; Biology Complex (4 facilities); Building 9735; Building 9206 Filter House; and removal of legacy material from the Alpha-5 and Beta-4 buildings. In addition, work will include

expansion of the Industrial Landfill V located at the Y-12 National Security Complex and the Environmental Management Waste Management Facility in order to provide necessary capacity for on-site waste disposal.

In addition, the American Recovery and Reinvestment Act Non-Defense funding will be used to complete legacy material removal and disposition from four buildings at Oak Ridge National Laboratory. The activities to be performed are part of the scope to cleanup the Oak Ridge National Laboratory but were not scheduled to begin until 2017; the soil remediation, waste cleanup, and building demolition to be performed under this project will now be complete by 2011 and represents a six year acceleration in the schedule. The ARRA activities include the following projects: demolition and disposition of facilities in the 2000 Complex, General Maintenance Facilities Complex, Southeast Lab Complex, and legacy material removal and disposition from four buildings in Central Campus Complex and Building 2026.

At the East Tennessee Technology Park, American Recovery Reinvestment Act funding will allow for the demolition of the K-33 former Gaseous Diffusion building and completion of some pre-demolition activities in the K-27 building.

Site Description

The Oak Ridge Reservation is in east Tennessee and is comprised of three facilities: the East Tennessee Technology Park; the Oak Ridge National Laboratory; and the Y-12 National Security Complex. In addition, there are some private properties that are not located on the Oak Ridge Reservation (the Atomic City Auto Parts Site and the David Witherspoon Sites) that are being cleaned up under the auspices of the Oak Ridge program.

Oak Ridge - East Tennessee Technology Park

The East Tennessee Technology Park site occupies approximately 5,000 administrative acres adjacent to the Clinch River and located approximately 13 miles west of Oak Ridge, Tennessee. Approximately 2,200 of these acres are to be addressed under the Comprehensive Environmental Response, Compensation, and Liability Act. It was originally built as a uranium enrichment facility for defense programs. The majority of the 125 major buildings on the site have been inactive since uranium enrichment production ceased in 1985.

Oak Ridge National Laboratory

Activities carried out at the 3,300-acre Oak Ridge National Laboratory historically have supported both the defense production operations and civilian energy research effort. Significant waste management activities took place within the Melton Valley area of the Laboratory. The Oak Ridge National Laboratory currently conducts applied and basic research in energy technologies and the physical and life sciences. Cleanup includes environmental remediation, decontamination, decommissioning and demolition of hazardous and radioactively contaminated facilities, and disposition of legacy low, mixed low-level, and transuranic waste.

Oak Ridge - Y-12 National Security Complex

The Y-12 National Security Complex (Y-12) site is approximately 811 acres and is located about two miles southwest of Oak Ridge, Tennessee. Y-12 was originally a uranium processing facility and now dismantles nuclear weapons components, produces nuclear weapon secondaries, serves as one of the nation's storehouses for special nuclear materials, and reduces the global threat of weapons of mass destruction. The types of contamination found within the Y-12 site include radioactive, hazardous, and mixed wastes. The sanitary landfills for the entire Oak Ridge Reservation are located at Y-12. The Environmental Management Waste Management Facility (a Comprehensive Environmental Response, Compensation, and Liability Act disposal facility supporting the cleanup) is also located at Y-12.

Site Cleanup Strategy/Scope of Cleanup

The Oak Ridge cleanup strategy is a risk-based approach that focuses first on those contaminant sources that are the greatest contributors to risk. The overall strategy is based on surface and groundwater considerations, encompassing watersheds that feed the Clinch River and that are impacted by the DOE sites. Key Records of Decision have been signed for these watersheds. Final Records of Decision will be necessary for all watersheds to deal with the remaining ecological and groundwater concerns.

While risk reduction is the major cleanup driver, other factors that must be considered to achieve risk reduction are execution logic and mortgage reduction, which will ultimately reduce the cost and schedule to complete cleanup.

Site Completion (End State)

Planned completion of the East Tennessee Technology Park is scheduled no earlier than FY 2017. A significant number of additional contaminated facilities at the Oak Ridge National Laboratory and Y-12 are expected to be transferred to EM from the Office of Science and the National Nuclear Security Administration over the next few years. After cleanup is complete, the Oak Ridge National Laboratory will continue to operate as a world-class research facility and Y-12 will continue to operate, fulfilling its national security mission. The planned lifecycle completion date is 2021 to 2022.

Short-Term Projects:

Oak Ridge National Laboratory: The short-term scope at this site includes performing surveillance and maintenance of surplus facilities; operating waste treatment facilities; and conducting high-risk reduction cleanup projects

Bethel Valley at Oak Ridge National Laboratory: Specific high-risk reduction actions planned include preparing Building 3019 for U-233 downblending operations; excavation of Tank W-1A (Corehole 8) and associated transuranic soils; and remediating radiological and chemically contaminated soils and sediments.

Melton Valley at Oak Ridge National Laboratory: The Comprehensive Environmental Response, Compensation, and Liability Act remedial action project was completed in FY 2006. A significant amount of waste remains in situ. A final Record of Decision is required to address potential residual groundwater, sediment and ecological concerns within the watershed. In addition, pyrophoric material remains in one burial trench pending a decision with the regulators on any future remedial actions that may be required.

East Tennessee Technology Park: This project addresses decommissioning of facilities and remedial actions for contaminated sites at the former gaseous diffusion plant used to enrich uranium. Approximately 2,200 acres of the 5,000 administrative acres that comprise the East Tennessee Technology Park contain 167 known release sites that need to be remediated to mitigate contamination from plumes originated by contaminated soils and burial grounds from migrating off-site. In addition there are approximately 500 facilities, including 125 major buildings that require decommissioning and in most cases, demolition. The highest priority at the site is the decommissioning and decontamination of the K-25 and K-27 gaseous diffusion process buildings due to the deteriorating condition of the buildings affecting worker safety. A final Site-Wide Record of Decision is being prepared to address all groundwater, surface water, sediments, and ecological and long-term stewardship concerns at the site. Site closure will not occur earlier than FY 2017 and assumes the demolition of the K-25, K-27, K-31, and K-33 buildings.

Y-12: The short-term scope at this site includes performing surveillance and maintenance of surplus facilities; operating the on-site Environmental Management Waste Management Facility and sanitary landfills; and conducting high risk reduction cleanup projects at the Y-12 National Security Complex.

Offsite Areas: This project reduces risk and cleans up three privately owned properties that were contaminated due to the sale of contaminated materials from the DOE to private companies. DOE 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 work at these sites has been completed and State approval of Records of Completion is pending. The state of Tennessee recently requested a re-verification survey of a one acre parcel adjacent to the 1630 site. The survey revealed the presence of minor radiological contamination. Future characterization is required to determine any necessary remedial actions.

Longer Term Projects:

Y-12: Surveillance and maintenance of surplus facilities and the operation of waste disposal facilities will continue at this site. A significant number of additional contaminated facilities at this site are expected to be transferred to EM from the National Nuclear Security Administration over the next several years as described in the Critical Decision 1 for the Integrated Facilities Disposition Program.

Oak Ridge National Laboratory: Surveillance and maintenance of surplus facilities, removal of Molten Salt Reactor Experiment fuel salts and the operation of waste treatment facilities will continue at this site. U-233 material stored in Building 3019 will be downblended and dispositioned. A significant number of additional contaminated legacy and demolished facilities at this site are expected to be transferred to EM from the Office of Science over the next several years as described in the Critical Decision 1 for the Integrated Facilities Disposition Program.

Long-Term Stewardship: The Comprehensive Environmental Response, Compensation, and Liability Act process will determine any necessary final actions for groundwater in the five watersheds subsequent to completion of the actions described above. Since most of the contaminated sites, media, and facilities left standing will not permit unrestricted use of the soil, groundwater, and surface water, extensive monitoring and long-term stewardship actions will be required.

Regulatory Framework

Cleanup of the Oak Ridge Reservation is primarily governed by three regulatory agreements/compliance orders. The first, the *Federal Facility Agreement for the Oak Ridge Reservation*, between DOE, the United States Environmental Protection Agency, and the Tennessee Department of Environment and Conservation implemented in (January 1992), establishes a procedure framework and schedule for developing, implementing, and monitoring appropriate site response actions under the Comprehensive Environmental Response, Compensation, and Liability Act.

The second, the *Oak Ridge Reservation Compliance Order*, between DOE and the Tennessee Department of Environment and Conservation (September 1995), enforces treatment of mixed low-level wastes under the Resource Conservation and Recovery Act. This order establishes milestones to complete treatment of all Oak Ridge mixed low-level wastes by 2012.

The third, the *Oak Ridge Reservation Polychlorinated Biphenyl Federal Facilities Compliance Agreement*, between DOE and the Environmental Protection Agency (October 1996), establishes a framework for treatment of polychlorinated biphenyl-contaminated wastes under the Toxic Substances Control Act.

Critical Site Uncertainties and Assumptions

Major uncertainties include: final agreement with the regulators on the extent of remediation to be accomplished under future Records of Decision; the reindustrialization of the decontaminated K-31 gaseous diffusion plant building at East Tennessee Technology Park which will eliminate the need for demolition; and the nature and amount of cleanup that will be required for the additional contaminated facilities that are expected to be transferred from the National Nuclear Security Administration (Y-12 site) and the Office of Science (Oak Ridge National Laboratory) to EM over the next few years.

Interdependencies

The success of the Oak Ridge Environmental Management Program requires effective project interfaces with the following:

National Nuclear Security Administration: Certain material recovered during the high risk equipment removal from the gaseous diffusion plant buildings at East Tennessee Technology Park will be shipped to Y-12 for storage.

United States Enrichment Corporation: United States Enrichment Corporation has a lease with DOE to access the K-1600 building at East Tennessee Technology Park and its centrifuge technology.

Office of Science: Close coordination with this office is critical to maintain the security posture for Building 3019 at the Oak Ridge National Laboratory.

Contract Synopsis

Oak Ridge Reservation currently utilizes three different prime contracts to implement its cleanup strategy: (1) Oak Ridge Environmental Management Cleanup Contract; (2) the Transuranic Waste Treatment Contract and (3) the U-233 Downblend Contract.

Oak Ridge Environmental Management Cleanup Contract: The Oak Ridge Closure Contract with Bechtel Jacobs Company, LLC was signed September 2003 with the singular focus of achieving specified milestones in the safest, most cost effective manner. This contract was restructured in 2008, as a cost-plus-fixed-fee contract with schedule incentives to focus efforts on the demolition of the K-25 Building. Planning efforts have started for the follow-on contract. Award is scheduled for 2011.

Transuranic Waste Treatment Contract: A privatization contract was signed with Foster Wheeler Environmental Corporation in August 1998 for the construction of a transuranic waste treatment facility and the treatment of remote-handled alpha low-level waste, and contact- and remote-handled transuranic waste. The original fixed-price contract with Foster Wheeler was converted to a cost-plus-fixed-fee contract in September 2006 and novated to EnergX, on January 15, 2008. The contract has been re-competed and awarded to a small business, Wastern Advantage Incorporated.

U-233 Downblend Contract: The contract for U-233 downblending and Building 3019 shutdown was awarded to Isotek Systems, LLC in October 2003, originally managed by the Office of Nuclear Energy Congress directed the Department in the FY 2006 Energy and Water Appropriations Act to transfer the management of this project to the Office of Environmental Management and to terminate the medical isotope production. The contract has been revised accordingly. Phase I covered planning and design, which was completed in July of 2007. The current contracting schedule is for enhanced 90% design, in which a detailed cost proposal will be provided with a revised baseline and data sheet.

Cleanup Benefits

Longer Term:

Closure of the East Tennessee Technology Park site is the next complex-wide opportunity for the EM Program to divest itself of a major liability. Remedial actions and decommissioning and decontamination of surplus facilities will be initiated at the Y-12 National Security Complex and Oak Ridge National Laboratory to reduce contamination which will protect on-site workers; mitigate off-site releases; and provide strategic real estate for modernization strategies.

Direct maintenance and repair at Oak Ridge is estimated to be \$ 6,172,000.

Funding Schedule by Activity

	(dollars in thousands)		
	FY 2009	FY 2010	FY 2011
Defense Environmental Cleanup			
Oak Ridge			
Oak Ridge			
OR-0011Z / Downblend of U-233 in Building 3019	58,000	38,900	50,001
OR-0013B / Solid Waste Stabilization and Disposition-2012	88,183	35,615	23,925
OR-0031 / Soil and Water Remediation-Offsites	1,230	0	0
OR-0041 / Nuclear Facility D&D-Y-12	38,092	53,500	63,775
OR-0042 / Nuclear Facility D&D-Oak Ridge National Laboratory	71,125	44,400	58,101
OR-0043 / Nuclear Facility D&D-East Tennessee	105	100	87

(dollars in thousands)

	FY 2009	FY 2010	FY 2011
Technology Park (Defense) OR-0100 / Oak Ridge Reservation Community & Regulatory Support (Defense)	6,100	6,253	6,409
Subtotal, Oak Ridge	262,835	178,768	202,298
Uranium Enrichment Decontamination and Decommissioning Fund			
D&D Activities			
Oak Ridge			
OR-0040 / Nuclear Facility D&D-East Tennessee Technology Park (D&D Fund)	190,663	207,800	211,651
OR-0102 / East Tennessee Technology Park Contract/Post-Closure Liabilities/Administration	18,170	17,200	18,751
Subtotal, Oak Ridge	208,833	225,000	230,402
Total, Oak Ridge	471,668	403,768	432,700

Performance Measure Summary

	Complete through FY 2009	Complete through FY 2010	Complete through FY 2011	Life-Cycle	FY 2011 % Complete
Oak Ridge					
Geographic Sites Eliminated (number of sites)	28	28	28	29	96.6%
Industrial Facility Completions (Number of Facilities)	329	351	368	635	58.0%
Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	116,914	117,949	120,566	181,682	66.4%
Nuclear Facility Completions (Number of Facilities)	8	8	8	25	32.0%
Radioactive Facility Completions (Number of Facilities)	26	28	28	76	36.8%
Remediation Complete (Number of Release Sites)	408	441	442	693	63.8%
Transuranic Waste shipped for disposal (Cubic meters) - CH	81	81	81	1,473	5.5%
Transuranic Waste shipped for disposal (Cubic meters) - RH	5	5	5	748	0.7%

Detailed Justification

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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OR-0011Z / Downblend of U-233 in Building 3019 **58,000** **38,900** **50,001**

This PBS is within the Defense Environmental Cleanup appropriation.

Oak Ridge maintains DOE inventory of Uranium-233 (U-233) currently stored in Building 3019 at the Oak Ridge National Laboratory. U-233 is a special nuclear material which requires strict safeguards and security controls to protect against access. The primary objectives of this project are to: 1) eliminate safety and nuclear criticality concerns; and 2) place the material for disposal. Treating the U-233 inventory as expeditiously as possible will reduce the substantial annual costs associated with safeguards and security requirements, which are funded by the Office of Science. Further, the risk of a nuclear criticality event will be eliminated as well as the need for future facility upgrades to Building 3019 to ensure safe storage of the inventory.

In addition, the Defense Nuclear Facilities Safety Board issued Recommendation 97-1, *Safe Storage of Uranium-233*, that identified concerns related to long-term storage of the inventory in Building 3019. The U-233 Project received approval of the performance baseline (Critical Decision 2) and limited construction/dismantling (Critical Decision 3A) on May 25, 2007. A datasheet for the operating expense-funded project is provided after the Explanation of Funding Changes.

In FY 2011, the following activities are planned:

- Maintain compliance with requirements at the appropriate waste disposal site for U-233, which requires Category 1 Security and compliance with 10 Code of Federal Regulations 830 and 835.
- Complete the 90% Design for construction of annex and building 3019 modifications
- Complete dismantlement of Cell 1, Cell 2, Building 3136, and Building 3074 and to support the construction of the downblending process.

Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
Transuranic Waste shipped for disposal (Cubic meters) - CH	0	0	0	0	100.0%
Transuranic Waste shipped for disposal (Cubic meters) - RH	0	0	0	0	100.0%
Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	96	96	96	1,426	7.0%
Key Accomplishments (FY 2009)/Planned Milestones (FY 2010/FY 2011)					
<ul style="list-style-type: none"> ▪ Finalize 60% design of U-233 down-blending equipment and Building 3019 modifications (FY 2009) 					

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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- Continue Design for construction of annex and building 3019 modifications (September 2010)
- Continue surveillance and maintenance at U-233 to maintain a safe condition (September 2010/September 2011)
- Complete 90% Design for construction of annex and building 3019 modifications (September 2011)
- Obtain Critical Decision-3B from EM-1 to allow construction of the downblending process (September 2011)

OR-0013B / Solid Waste Stabilization and Disposition-2012

88,183 35,615 23,925

This PBS is within the Defense Environmental Cleanup appropriation.

This project funds storage and Resource Conservation and Recovery Act closure, treatment and disposal of low-level, mixed low-level, hazardous, industrial, and sanitary waste from the East Tennessee Technology Park, Oak Ridge National Laboratory, and Polychlorinated Biphenyl Federal Facility Compliance Agreement mixed waste from Y-12. It also includes the operation of the Toxic Substances Control Act Incinerator and the Central Neutralization Facility. In addition, this project funds the management of the reservations of transuranic waste and the management of waste stored at East Tennessee Technology Park.

Contact-handled transuranic debris processing was initiated in FY 2006 and processing of remote-handled transuranic debris started in FY 2008 at the Transuranic Waste Processing Center. Processed waste is shipped to the Waste Isolation Pilot Plant or the Nevada Test Site for disposal.

In FY 2011, the following activities are planned:

- Manage and store mixed low-level waste in compliance with regulations.
- Continue to process, store and transfer remote-handled and contact-handled transuranic waste at the Transuranic Waste Processing Center.
- Maintain regulatory safety basis documents and permits for, and operate, waste storage facilities.
- Continue shipment of Polychlorinated biphenyls contaminated waste in accordance with the Federal Facility Compliance Agreement.
- A portion of the scope of work typically covered in this project is being executed with ARRA funding.

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
Transuranic Waste shipped for disposal (Cubic meters) - CH	81	81	81	1,449	6.0%
Transuranic Waste shipped for disposal (Cubic meters) - RH	5	5	5	550	1.0%
Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	12,921	13,607	15,897	29,614	54.0%
Key Accomplishments (FY 2009)/Planned Milestones (FY 2010/FY 2011)					
<ul style="list-style-type: none"> ▪ Manage and store mixed low-level waste in compliance with regulations. (FY 2009/FY 2009/September 2010/September 2011) ▪ Continue disposition of the East Tennessee Technology Park legacy Polychlorinated Biphenyl Federal Facility Compliance Agreement waste. (FY 2009/FY 2009/September 2010) ▪ Complete processing of 280 cubic meters of contact-handled waste (FY 2009) ▪ Toxic Substances Control Act Incinerator (September 2010) 					

OR-0031 / Soil and Water Remediation-Offsites **1,230** **0** **0**

This PBS is within the Defense Environmental Cleanup appropriation.

The properties, which cover 64 acres combined, are in residential and commercial areas and are accessible to the public. As of March 2009, remediation has been completed at the David Witherspoon, Inc. 901 site and the Atomic City Auto Parts Site. In addition, fieldwork is complete at the David Witherspoon, Inc. 1630 site. If associated paperwork is not complete in FY 2009, work will continue with the State in FY 2010 to achieve Records of Decision. The state of Tennessee recently requested a re-verification survey of a one acre parcel adjacent to the 1630 site. The survey revealed the presence of minor radiological contamination. Further characterization is required to determine any necessary remedial actions.

In FY 2011, the following activities are planned:

- No activities are planned.

Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
Remediation Complete (Number of Release Sites)	7	8	8	8	100.0%
Key Accomplishments (FY 2009)/Planned Milestones (FY 2010/FY 2011)					
<ul style="list-style-type: none"> ▪ Complete Field Work on David Witherspoon 1630 (FY 2009) 					

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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OR-0041 / Nuclear Facility D&D-Y-12

38,092

53,500

63,775

This PBS is within the Defense Environmental Cleanup appropriation.

This project funds the cleanup at the Y-12 National Security Complex, focusing on high-risk reduction projects in the near-term; cost-effective cleanup of the Oak Ridge Reservation through the construction and operation of the Environmental Management Waste Management Facility and the Oak Ridge Reservation Landfills; surveillance and maintenance of currently surplus facilities awaiting future decontamination and decommissioning; and groundwater and surface water monitoring to assess the effectiveness of completed cleanup actions and support future remediation decisions.

Located in a water-rich environment, Y-12 National Security Complex is a significant contributor of mercury, radionuclides, and volatile organic compounds, and polychlorinated biphenyls to the Upper East Fork of 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. To date, several high-risk reduction projects have been completed, including construction and operation of a water treatment system to reduce mercury contamination in surface water leaving the site, initial phases of remediation of the East End Volatile Organic Compound Plume to prevent further off-site migration of contaminated groundwater, and excavation of the Boneyard/Burnyard burial ground in Bear Creek Valley to reduce uranium contamination migration into surface water leaving the site. In FY 2009 and beyond, the remaining cleanup activities include demolition of contaminated EM facilities, additional sediment and soils removal to address mercury and polychlorinated biphenyls contamination and completion of the remaining records of Decision.

This PBS scope also includes incremental construction, operation, and final closure of the Environmental Management Waste Management Facility disposal facility. The facility currently has a capacity of 2.2 million cubic yards, with a final proposed build out capacity of 1.7 million cubic yards. A total of \$14,000,000 in payments to a State of Tennessee trust fund will provide funding for the perpetual care of the Environmental Management Waste Management Facility after final closure. This project also includes the incremental construction and operation of the Oak Ridge Reservation Landfills for disposition of waste from all on-site DOE program offices. In addition, the coordination of surveillance and maintenance activities for the Y-12 National Security Complex, which include environmental monitoring of soils, sediments, surface water, and groundwater throughout the Oak Ridge Reservation, in order to effectively perform cleanup actions included in the PBS scope.

Additional scope has been identified that needs to be added to the Oak Ridge lifecycle cost and schedule to address Department environmental liabilities consisting of facilities, structures, and contaminated legacy areas excess to the Y-12 National Security Complex, including soils under facilities, groundwater, and surface water. Critical Decision-1 was approved on November 17, 2008.

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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In FY 2011, the following activities are planned:

- Continue operations of Environmental Management Waste Management Facility and other Oak Ridge Reservation Landfills in accordance with Department of Energy Order requirements for groundwater and surface water monitoring, including Environmental Management Waste Management Facility waste acceptance criteria attainment activities.
- Continue surveillance and maintenance of waste sites, inactive facilities, and annual remediation effectiveness report for compliance with legal agreements between DOE, U.S. Environmental Protection Agency Region 4, the State of Tennessee, and environmental laws and regulations.
- Complete characterization of 81-10 Mercury Area.
- A portion of the scope of work typically covered in this project is being executed with ARRA funding.

Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	0	0	0	43,038	0%
Industrial Facility Completions (Number of Facilities)	1	1	1	7	14.0%
Remediation Complete (Number of Release Sites)	28	28	28	138	20.0%
Key Accomplishments (FY 2009)/Planned Milestones (FY 2010/FY 2011)					
<ul style="list-style-type: none"> ▪ Submit Water Resources Restoration Program RER to Regulators for Approval (March 2010/March 2011) ▪ Submit Environmental Management Waste Management Facility WAC Arraignment Capacity Assurance Report (CARAR) to the regulators for approval (April 2010/April 2011) ▪ Fund the Perpetual Care Fee for the Environmental Management Waste Management Facility (September 2010/September 2011) ▪ Continue operation of the Environmental Management Waste Management Facility to support EM cleanup (September 2010/September 2011) ▪ Continue management, surveillance, and maintenance of EM Facilities. (September 2010/September 2011) ▪ Continue operation of the Oak Ridge Reservation landfills to support Oak Ridge Operations (September 2010/September 2011) ▪ Submit Upper East Fork Poplar Creek Phase 1 record of decision for Source Control Actions amendment to the regulators (September 2011) 					

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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OR-0042 / Nuclear Facility D&D-Oak Ridge National Laboratory

71,125 44,400 58,101

This PBS is within the Defense Environmental Cleanup appropriation.

Areas requiring remediation include more than 50 inactive facilities (including six inactive research reactors), three significant plumes of contaminated groundwater, contaminated surface water, and numerous areas of soil and sediment contamination. These projects include 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.

Additional scope has been identified that needs to be added to the Oak Ridge lifecycle cost and schedule to address Department environmental liabilities consisting of facilities, structures, outdated waste treatment facilities and contaminated legacy materials excess to the Oak Ridge National Laboratory, including soils under facilities, groundwater, and surface water. Critical Decision-1 was approved on November 17, 2008.

This project also includes surveillance and maintenance activities to maintain contaminated sites in accordance with safety basis documents until final decommissioning, decontamination and remedial actions are undertaken.

In FY 2011, the following activities are planned:

- Monitor groundwater and surface water in accordance with the Melton Valley and Bethel Valley Records of Decision.
- Perform surveillance and maintenance for Environmental Management inactive facilities and reactors at the Oak Ridge National Laboratory to maintain a safe and compliant condition.
- Maintain liquid, gaseous and process waste operations systems in support of the missions of the Office of Science and the Office of Environmental Management.
- Continue Acquisition Planning and Baseline development to support Critical Decision 2/3A for Integrated Facilities Disposition Program.
- Continue Data Quality Objective sessions and initiate soil characterization activities and soil excavation for Oak Ridge National laboratory Soils and Sediments Project
- Initiate fuel salt removal at Molten Salt Reactor Experiment.
- A portion of the scope of work typically covered in this project is being executed with ARRA funding.

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
Transuranic Waste shipped for disposal (Cubic meters) - CH	0	0	0	24	0%
Transuranic Waste shipped for disposal (Cubic meters) - RH	0	0	0	198	0%
Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	811	1,160	1,487	4,518	33.0%
Nuclear Facility Completions (Number of Facilities)	0	0	0	15	0%
Radioactive Facility Completions (Number of Facilities)	3	3	3	31	10.0%
Industrial Facility Completions (Number of Facilities)	7	7	7	28	25.0%
Remediation Complete (Number of Release Sites)	80	80	80	177	45.0%
Key Accomplishments (FY 2009)/Planned Milestones (FY 2010/FY 2011)					
<ul style="list-style-type: none">▪ Provide regulatory compliant operation of the Oak Ridge National Laboratory Process waste Collection/Transfer System (September 2010)▪ Continue management, surveillance, and maintenance of EM Facilities. (September 2010/September 2011)▪ Provide regulatory compliance operation of the Oak Ridge National Laboratory Process waste Collection/Transfer System (September 2011)▪ Bethel Valley Soils and Sediments (September 2011)▪ Molten Salt Reactor Experiment Fuel Salt Removal Activities (September 2011)					

OR-0043 / Nuclear Facility D&D-East Tennessee Technology Park (Defense)

105 100 87

This PBS is within the Defense Environmental Cleanup appropriation.

This project, in combination with PBS OR-0040, Nuclear Facility D&D East Tennessee Technology Park (Uranium Enrichment Decontamination and Decommissioning Fund) will accomplish the closure of East Tennessee Technology Park. This project funds decontamination, decommissioning, and demolition 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 also provides for the surveillance and maintenance required to maintain the facilities in accordance with safety basis documents while they await decontamination and decommissioning.

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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In FY 2011, the following activities are planned:

- Perform surveillance and maintenance of the Centrifuge Facilities complex, to maintain in a safe and secure condition.

Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	32,979	32,979	32,979	32,979	100.0%
Radioactive Facility Completions (Number of Facilities)	0	0	0	0	100.0%
Industrial Facility Completions (Number of Facilities)	6	7	7	37	19.0%
Key Accomplishments (FY 2009)/Planned Milestones (FY 2010/FY 2011)					
<ul style="list-style-type: none"> Continue surveillance and maintenance on East Tennessee Technology Park defense facilities to ensure safety. (September 2010/September 2011) 					

OR-0100 / Oak Ridge Reservation Community & Regulatory Support (Defense)

6,100 6,253 6,409

This PBS is within the Defense Environmental Cleanup appropriation.

This project funds two Tennessee non-regulatory Agreement-In-Principle grants, one Tennessee regulatory Federal Facility Agreement grant, and the activities of the Oak Ridge Site Specific Advisory Board. The first Agreement-In-Principle supports the Tennessee Department of Environment and Conservation's independent environmental oversight and monitoring of DOE activities taking place both on-site and off-site associated with the Oak Ridge Reservation. The second Agreement-In-Principle supports the Tennessee Emergency Management Agency in emergency response planning initiatives, including cooperative planning, conducting joint training exercises and developing public information regarding preparedness activities. The Federal Facility Agreement grant supports the Tennessee Department of Environment and Conservation, provides oversight of the requirements of the interagency agreement under the Comprehensive Environmental Response, Compensation, and Liability Act. The support for the Site Specific Advisory Board is chartered under the Federal Advisory Committee Act.

In FY 2011, the following activities are planned:

- Continue support to the State of Tennessee for conducting annual oversight, monitoring, and reporting. This includes: annual reports to the public; independent monitoring program of all environmental media; off reservation monitoring program of wells owned by private citizens adjacent to DOE land; establishment of background levels; DOE facility surveillance walkthroughs: Federal Facility Agreement activities; and emergency management exercises.
- Continue activities by the Site Specific Advisory Board sponsored by DOE-EM to assist in public participation activities.

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
No metrics associated with this PBS					
Key Accomplishments (FY 2009)/Planned Milestones (FY 2010/FY 2011)					
<ul style="list-style-type: none">Continue activities by the Site-Specific Advisory Board sponsored by DOE-EM to assist in public participation activities. (September 2010/September 2011)Provide financial support to the State of Tennessee for conducting annual oversight, monitoring, and reporting. (September 2010/September 2011)					

**OR-0040 / Nuclear Facility D&D-East Tennessee
Technology Park (D&D Fund)**

190,663 207,800 211,651

This PBS is within the Uranium Enrichment Decontamination and Decommissioning Fund appropriation.

This project funds decommissioning and decontamination of facilities and remedial actions for contaminated sites at the East Tennessee Technology Park. It also funds the site infrastructure services. Approximately 2,200 acres of the 5,000 administrative acres at the site contain potential contamination, including known groundwater contaminant plumes from former burial grounds and contaminated soils. This project includes approximately 167 release sites requiring remediation and 500 facilities (125 major buildings) requiring decommissioning and decontamination. The FY 2005 decommissioning of the K-29, 31 and 33 gaseous diffusion process buildings (covering 110 acres) completed the largest decommissioning project ever undertaken by DOE. The decommissioning and demolition of the K-25 gaseous diffusion process-building is the top priority because of worker safety concerns stemming from the continuing deteriorating condition of the building. The scope of the K-25 building subproject is to abate the hazardous materials, remove the process equipment and excess materials stored in the buildings, demolish the building structures, and appropriately characterize, package, transport and dispose of all the associated wastes. The decontamination and decommissioning of these other facilities include the planning, deactivation of utilities, asbestos and other hazardous material abatement, equipment dismantlement and disposal, structure demolition and waste disposal. Site infrastructure services include fire protection, utility services, environmental, safety, and health programs, real property management, power operations and maintenance, and capital improvements and repairs.

The end state of the site will be appropriate for non-federal industrial park for all areas of land down to a grade of ten feet below the surface.

In FY 2011, the following activities are planned:

- Maintain East Tennessee Technology Park in a safe and secure condition.

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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- Continue demolition in preparation for demolition of the East Wing and North End of the K-25 Building.
- Begin demolition of K-33 to meet associated milestones with ARRA funding.
- Provide infrastructure support for decontamination and decommissioning and remedial action projects.

Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	5,178	5,178	5,178	5,178	100.0%
Nuclear Facility Completions (Number of Facilities)	2	2	2	4	50.0%
Radioactive Facility Completions (Number of Facilities)	8	10	10	30	33.0%
Industrial Facility Completions (Number of Facilities)	310	331	348	558	62.0%
Remediation Complete (Number of Release Sites)	103	122	123	167	74.0%

Key Accomplishments (FY 2009)/Planned Milestones (FY 2010/FY 2011)

- Declaration of criticality incredibility and readiness for demolition on K-25 process building. (FY 2009)
- Complete Power House Area Soils Remediation. (FY 2009)
- Predominately Uncontaminated Facilities Phase Construction Completion Report (October 2009)
- Submit the FY 2009 Earned Value Phase Construction Completion Report to the regulators (November 2009)
- Continue base operations activities at the East Tennessee Technology Park to provide infrastructure and support to the cleanup project. (September 2010/September 2011)
- Continue surveillance and maintenance on the East Tennessee Technology Park facilities including the K-25 and K-27 buildings to maintain a safe condition. (September 2010)
- Submit the FY 2010 Earned Value Phase Construction Completion Report to the Regulators (November 2010)
- Submit the East Tennessee Technology Park Sitewide Record-of-Decision TS report to the regulators (March 2011)
- Continue surveillance and maintenance on the East Tennessee Technology Park facilities to maintain a safe condition. (September 2011)

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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**OR-0102 / East Tennessee Technology Park
Contract/Post-Closure Liabilities/Administration** **18,170** **17,200** **18,751**

This PBS is within the Uranium Enrichment Decontamination and Decommissioning Fund appropriation.

This project funds on-going, long-term contractor obligations including post-retirement life and medical, long-term disability and pension benefits for pre-April 1998 retirees, who supported Oak Ridge enrichment facility programs.

In FY 2011, the following activities are planned:

- Continue funding of contractor liabilities associated with post-retirement life, medical benefits and pensions.

Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
No metrics associated with this PBS					
Key Accomplishments (FY 2009)/Planned Milestones (FY 2010/FY 2011)					
<ul style="list-style-type: none"> ▪ Continue support for Contractor Post Retirement Life and Medical and Pension (September 2011) 					

Total, Oak Ridge **471,668** **403,768** **432,700**

Explanation of Funding Changes

FY 2011 vs. FY 2010 (\$000)

Defense Environmental Cleanup

Oak Ridge

OR-0011Z / Downblend of U-233 in Building 3019

- Increase funds scope of work to support construction activities of downblending process. 11,101

OR-0013B / Solid Waste Stabilization and Disposition-2012

- Decrease reflects completion of RCRA closure activities at the Toxic Substances Control Act Incinerator. -11,690

OR-0041 / Nuclear Facility D&D-Y-12

- Increase supports expansion of risk reduction activities at the Y-12 Site. 10,275

FY 2011 vs. FY 2010 (\$000)

OR-0042 / Nuclear Facility D&D-Oak Ridge National Laboratory	
▪ Increase reflects funding to support the regulatory compliance operations for Federal Facility Agreement milestones.	13,701
OR-0043 / Nuclear Facility D&D-East Tennessee Technology Park (Defense)	
▪ No significant change.	-13
OR-0100 / Oak Ridge Reservation Community & Regulatory Support (Defense)	
▪ No significant change.	156
Uranium Enrichment Decontamination and Decommissioning Fund	
D&D Activities	
OR-0040 / Nuclear Facility D&D-East Tennessee Technology Park (D&D Fund)	
▪ Increase supports focus of D&D activities at the East Tennessee Technology Park on the K-25 Process Building.	3,851
OR-0102 / East Tennessee Technology Park Contract/Post-Closure Liabilities/Administration	
▪ Increase reflects additional costs associated with long-term contractor obligations.	1,551
Total, Oak Ridge	28,932

**OR-0011Z Uranium-233 Down Blending and Disposition Project
Oak Ridge National Laboratory, Oak Ridge, Tennessee
Project Data Sheet is for Construction (Operating Expense Data Sheet)**

1. Significant Changes

The most recent DOE O 413.3A approved Critical Decision (CD) is CD2/3A, approval of performance baseline and limited construction/dismantling, approved on May 25, 2007. The Total Project Cost is \$240,821,000 (related operations and maintenance funding is \$120,028,000 and DOE contingency is \$23,972,000 for an approved baseline of \$384,821,000).

A Federal Project Director with certification level III has been assigned to this project.

This Project Data Sheet is an update of the FY 2010 Project Data Sheet.

This Data Sheet is a resubmission of the FY 2010 data sheet. The ^{233}U project is currently in the design phase and is also maintaining the safe and secure operations of Building 3019. During a recent design review of the project (^{233}U), building 3019 was found to have structural integrity issues that prohibit its use for a portion of the processing. This resulted in the necessary addition of an Annex to facilitate the back end processing (drying). Also, it was recently discovered during the Waste Isolation Pilot Plant's (WIPP) Acceptable Knowledge Review, that a large percent of the ^{233}U inventory, the Consolidated Edison Uranium Solidification Project (CEUSP) material does not have sufficient Transuranic content for disposal at the Waste Isolation Pilot Plant (WIPP). This finding resulted in the need to revise the design to account for the presence of Resource Conservation and Recovery Act (RCRA) metals. This finding will require the waste to be disposed of at the Nevada Test Site (NTS) in lieu of the planned disposal at WIPP. Both of the discoveries listed above require significant design changes to the facility; however, these currently appear to decrease the construction and operational risk associated with the planned facility. The Department of Energy (DOE) plans to continue the design effort through 90% design before requesting a new baseline for construction and operations, in order to ensure that the construction estimate will have the accuracy necessary to complete the project on schedule and within budget. Following completion of 90% project design, DOE will make appropriate Congressional notifications. In the meantime, Project Engineering and Design (PED) costs have increased, and will continue to increase, based on additional design-related activities. Updates to the financial schedule will occur upon the completion of 90% project design.

2. Design, Construction, and D&D Schedule

(fiscal quarter or date)

	CD-0	CD-1 (Design Start)	(Design/P ED Complete)	CD-2	CD-3 (Constructi on Start)	CD-4 (Project Complete)	D&D Start	D&D Complete
FY 2008	1Q FY 2006	1Q FY 2004	3Q FY 2009	4Q FY 2007	3Q FY 2009	3Q FY 2012		
FY2009	4Q FY03 (reconfirmed by EM 1Q FY 2007)	3Q FY04 (approved by EM 1Q FY 2007)		3Q FY 2007	3Q FY07 (CD-3A)	4Q FY 2012 (CD-4A)		
					2Q FY09 (CD-3B)	4Q FY 2015 (CD-4B)		

CD-0 – Approve Mission Need

CD-1 – Approve Alternative Selection and Cost Range

CD-2 – Approve Performance Baseline

CD-3 – Approve Start of Construction

CD-4 – Approve Start of Operations or Project Closeout

D&D Start – Start of Demolition & Decontamination (D&D) work

D&D Complete –Completion of D&D work

3. Baseline and Validation Status

(dollars in thousands)

	TEC, PED	TEC, Constructi on	TEC, Total	OPC Except D&D	OPC, D&D	OPC, Total	TPC
FY08	N/A	N/A	218,686	14,756	N/A	14,756	233,442
FY09a	N/A	N/A	226,643	14,178	N/A	14,178	240 ,821

4. Project Description, Justification, and Scope

The Defense Nuclear Facilities Safety Board (DNFSB) in a report to the Department of Energy (DOE) (DNFSB 97-1) has determined that the long-term storage of Uranium-233 (²³³U) in Building 3019 at the Oak Ridge National Laboratory (ORNL) poses potential nuclear criticality accident and worker exposure concerns. The scope of this project addresses safeguards and security requirements, eliminates long-term worker safety and criticality concerns, and places the ²³³U material in interim storage in preparation for future disposal. ²³³U is a special nuclear material which requires extensive safeguard and security measures to protect against access. In addition, treating the ²³³U inventory as quickly as possible would reduce the substantial annual costs associated with safeguards and security.

The Department developed a three-phased approach to allow for systematic decision-making and to increase the Department's flexibility. The base contract award consisted only of Phase I/Planning and Design. On October 9, 2003, a contract was awarded to Isotek Systems, LLC (Isotek), a limited-liability

a The costs of facility operations and facility shutdown (\$120,028,000) are not included here; they are reported in Section 8 – Related Operations and Maintenance Funding Requirements. Also, DOE project contingency (\$23,972,000) is not included in this estimate.

corporation formed by Duratek Federal Services, Inc., Nuclear Fuel Services, Inc., and Burns and Roe Enterprises, Inc., to perform Phase I of the work. Phase II/Project Implementation and Phase III/ Building 3019 Complex Shutdown are contract options that may be unilaterally exercised by the Department.

In FY 2006, this project transferred from the Office of Nuclear Energy to the Office of Environmental Management. In the Conference Report (109-275) accompanying the Energy and Water Development Appropriations Act for 2006, the conferees directed, “the Department to provide a report within 60 days of enactment of this Act that details the Department’s path forward in managing this material.” The Department delivered a report to Congress in February 2006 that discusses alternatives to safely disposition the Building 3019 inventory. After delivery of the report to Congress, DOE directed Isotek to begin a re-baselining effort to reflect the change in approach from long-term storage to final disposition of the material, address all material in the inventory, and to delete thorium extraction from the baseline. The baseline was further revised in FY 2007 to address newly identified safety concerns. Approval of Critical Decision 2/3A, performance baseline and limited construction/dismantling, for the U233 Disposition Project, Building 3019 was received on May 25, 2007. The approved baseline of \$384,821,000 includes unfunded DOE contingency of \$23,972,000 and related operations and maintenance funding requirements of \$120,028,000

Phase I - Planning and Design:

Phase I consists of detailed project planning, process and facility modification designs, development of safety documentation, and development of detailed Phase II cost estimates. Phase I is being conducted on a cost-plus-fixed-fee basis.

The criteria used to determine whether to proceed with Phase II/Project Implementation and current status is provided below.

- The acceptability of the safety analysis, security plan, management plans and final design;
Status - Redesign progressed under EM and was reviewed by an External Independent Review Team which validated that the project design and risks were adequately bounded by cost and schedule in November 2006. The team concluded that the design adequately supports the preliminary documented safety analysis. In addition, the requirement to receive a DOE approved Safety Evaluation Report prior to fabrication of long-lead procurement items ensures safety is integrated through construction. The Project management plans (e.g. Project Execution Plan and Risk Management Plan) have been updated to capture changes to the project scope and were approved as part of the CD-2/3A package. The project is operating under an approved Documented Safety Analysis and interim security plan.
- The acceptability of the detailed cost estimate to complete the project, as determined by an independent cost analysis (“should cost analysis”) by DOE using the contractor’s design and processing approach;
Status - EM conducted an independent cost evaluation in preparation to proceed with Phases II and III of the project.
- The overall performance of the contractor in meeting the DOE cost, schedule, and safety requirements; and
Status - The overall performance of the contractor is evaluated consistent with the terms of the contract. Cost and schedule progress are tracked and monitored through weekly progress meetings, review of

monthly progress reports, and the evaluation of contractor invoices. Contractor performance issues have been identified that may affect DOE's decision to proceed with the next phase of the contract. A detailed earned value system will be established consistent with DOE Order 413.3A now that EM has received CD-2 approval.

- The confirmation of existing National Environmental Policy Act (NEPA) documentation supporting the planned activities.

Status – The Department prepared a revised Environmental Assessment to confirm adequate National Environmental Policy Act documentation for the project. The draft Environmental Assessment considered nine alternatives to the current preferred alternative. The draft was published in December 2006 and issued for public comment. After a 60 day comment period a final Environmental Assessment and Finding of No Significant Impact were published in March 2007.

Phase II - Project Implementation

During Phase II, the contractor will begin the necessary facility modifications and processing equipment installation. Total estimated cost and total project cost data reflect estimates for Phase I design costs and Phase II modifications to the Building 3019 Complex costs and are consistent with the validated baseline. Included in Phase II, the contractor would down-blend the enriched ²³³U with depleted uranium, and transfer containers of down-blended material to an on-site storage facility. Execution of the project activities during Phase II would satisfy all of the project objectives including resolution of Defense Nuclear Facilities Safety Board Recommendation 97-1.

During Phase II, the contractor would also be responsible for operation of the Building 3019 Complex, including the characterization, packaging, transportation and disposal of secondary wastes (*e.g.*, personal protection equipment, construction debris, liquid residues, etc.)

During Phase II, the contractor is required to develop transition plans to place Building 3019 Complex in a safe and stable shutdown configuration and transfer to the DOE decommissioning program. The contractor would also be required to develop a post-transition surveillance and maintenance plan. These plans would ensure that any contamination present is adequately contained, and that potential hazards to workers, the public, and the environment are minimized and controlled.

Upon completion of Phase II/Project Implementation processing activities, the contractor would be required to purge all processing systems and equipment of residual process materials in accordance with criteria specified by DOE. After clean-up has been completed, the contractor would characterize these systems and equipment and provide the characterization data to DOE.

Phase III - Building 3019 Complex Shutdown

Phase III will consist of performance of facility stabilization to ready the facility for decommissioning. The estimated duration of Phase III is 6 months.

The project is being conducted in accordance with the project management requirements in DOE O 413.3A and DOE M 413.3-1, Program and Project Management for the Acquisition of Capital Assets, and all appropriate project management requirements have been met.

5. Financial Schedule

(dollars in thousands)

	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
PED			
Prior Years	22,694	22,694	19,852
FY06	17,821	17,821	11,530
FY07	13,706	13,706	14,388
FY08	0	0	8,304
FY 09	0	0	TBD
Total, PED	54,221	54,221	TBD
Construction			
FY07	21,794	21,794	0
FY08	30,000	30,000	36,963
FY09	57,500	57,500	TBD
FY10	37,400	37,400	TBD
FY11	46,992	46,992	TBD
FY12	52,847	52,847	TBD
Total, Construction	246,533	246,533	TBD
TEC			
Prior Years	22,694	22,694	19,852
FY06	17,821	17,821	11,530
FY07	35,500	35,500	14,388
FY08	30,000	30,000	45,267
FY09	57,500	57,500	TBD
FY10	37,400	37,400	TBD
FY11	46,992	46,992	TBD
FY12	52,847	52,847	TBD
Total, TEC	300,754	300,754	TBD
Other Project Cost (OPC)			
OPC except D&D			
FY09	500	500	TBD
FY10	1,500	1,500	TBD
FY11	3,008	3,008	TBD
FY12	9,170	9,170	TBD
Total, OPC except D&D	14,178	14,178	TBD
D&D			
FY	0	0	0
Total, D&D	0	0	0
Total OPC			
FY09	500	500	TBD
FY10	1,500	1,500	TBD
FY11	3,008	3,008	TBD
FY12	9,170	9,170	TBD
	14,178	14,178	TBD

	(dollars in thousands)		
	Appropriations	Obligations	Costs
Total, OPC	14,178	14,178	TBD
Total Project Cost (TPC)			
FY05	22,694	22,694	19,852
FY06	17,821	17,821	11,530
FY07	35,500	35,500	14,388
FY08	30,000	30,000	45,267
FY09	58,000	58,000	TBD
FY10	38,900	38,900	TBD
FY11	50,001	50,001	TBD
FY12	62,017	62,017	TBD
Total, TPCa	314,932	314,932	TBD

6. Details of Project Cost Estimate

	(dollars in thousands)		
	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design (PED)			
Design	53,880	NA	53,880
Mgt. Reserve	341	NA	341
Total, PED	54,221	NA	54,221
Construction			
Site Preparation	3,803	NA	3,803
Equipment	72,734	NA	72,734
Other Construction	72,253	NA	72,253
Mgt. Reserve	23,632	NA	23,632
Total, Construction	172,422	NA	172,422
Total, TEC	226,643	NA	226,643
Mgt. Reserve, TEC	23,973	NA	23,973
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning	NA	NA	NA
Conceptual Design	NA	NA	NA
Start-Up	7,909	NA	7,909
Mgt. Reserve	6,269	NA	6,269
Total, OPC except D&D	14,178	NA	14,178
D&D			
D&D	NA	NA	NA

a The costs of facility operations and facility shutdown (\$120,028,000) are not included here; they are reported in Section 8 – Related Operations and Maintenance Funding Requirements. Also, DOE project contingency (\$23,972,000) is not included in this estimate

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Mgt. Reserve	NA	NA	NA
Total, D&D	NA	NA	NA
Total, OPC	14,178	NA	14,178
Mgt. Reserve, OPC	6,269	NA	6,269
Total, TPC	240,821	NA	240,821
Total, Mgt. Reserve	30,242	NA	30,242

7. Funding Profile History

(\$K)

Request	Prior Years	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	Out-years	Total	
FY 2004*	TEC	N/A	N/A							
	OPC	N/A	N/A							
	TPC	N/A	N/A							
FY 2005	TEC	N/A	N/A							
	OPC	N/A	N/A							
	TPC	N/A	N/A							
FY 2006*	TEC	N/A	N/A							
	OPC	N/A	N/A							
	TPC	N/A	N/A							
FY 2007 Performance Baseline	TEC	N/A	N/A							
	OPC	N/A	N/A							
	TPC	N/A	N/A							
FY 2008	TEC	123,305	25,600	17,200	3,485	0	0	0	21,470	191,060
	OPC	1,900	1,400	3,500	9,262	0	0	0	0	16,062
	TPC	125,205	27,000	20,700	12,747	0	0	0	21,470	207,122
FY 2009	TEC	163,242	37,400	25,092	909	0	0	0	0	226,643
	OPC	500	1,500	3,008	9,170	0	0	0	0	14,178
	TPC	163,742	38,900	28,100	10,079	0	0	0	0	240,821
FY 2010	TEC	163,515	37,400	25,092	636	0	0	0	0	226,643
	OPC	500	1,500	3,008	9,170	0	0	0	0	14,178
	TPC	164,015	38,900	28,100	9,806	0	0	0	0	240,821
FY 2011	TEC	163,515	37,400	46,992	52,847	0	0	0	0	300,754
	OPC	500	1,500	3,009	9,170	0	0	0	0	14,179
	TPC	164,015	38,900	50,001	62,017	0	0	0	0	314,933

8. Related Operations and Maintenance Funding Requirements

Start of Operation or Beneficial Occupancy (fiscal quarter or date)	4Q FY12
Expected Useful Life (number of years)	8 yrs
Expected Future Start of D&D of this capital asset (fiscal quarter)	TBD

(Related Funding requirements)

(dollars in thousands)

	Annual Costs		Life Cycle Costs	
	Current Total Estimate	Previous Total Estimate	Current Total Estimate	Previous Total Estimate
Total Operations & Maintenance	See footnote 3	N/A	120,028	120,051

9. Required D&D Information

Area	Square Feet
Area of new construction	NA
Area of existing facility(s) being replaced	NA
Area of additional D&D space to meet the "one-for-one" requirement	NA

The existing facility is being converted to carry out this project's mission. The facility will be demolished under a separate project upon completion of the Uranium-233 Downblending and Disposition Project.

10. Acquisition Approach

The DOE Oak Ridge Office (ORO) is responsible for implementation of the ²³³U project (including selection of principal contractor) and approval of specified procurement actions. Project deliverables are performed under a negotiated contract which was awarded on the basis of competitive bidding. A dedicated Federal Director at ORO oversees the efforts of the selected contractor, Isotek Systems, LLC. In addition, an Integrated Project Team, including members and support from Headquarters and potential receiver sites, has been established. An updated Acquisition Strategy for this project was approved by the Acquisition Executive on November 3, 2006.

a Annual O&M (for down blending operations and facility shutdown) as follows: FY12 \$23,494,000; FY13 \$45,000,000; FY14 \$44,600,000; FY15 \$6,934,000.

Paducah

Funding by Site

(dollars in thousands)

	FY 2009 Current Appropriation	FY 2009 Current Recovery Act Appropriation	FY 2010 Current Appropriation	FY 2011 Request
Paducah Gaseous Diffusion Plant	161,751	78,800	163,937	136,504
Total, Paducah	161,751	78,800	163,937	136,504

Site Overview

For approximately 50 years, the Paducah Gaseous Diffusion Plant in Paducah, Kentucky supported the Federal Government and commercial nuclear power missions. Decades of nuclear energy and national security missions left radioactive and chemical contamination. The mission of the site is transitioning from primarily enrichment operations to shared missions with environmental cleanup, waste management, depleted uranium conversion, deactivation and decommissioning, and long-term stewardship.

The original mission at the Paducah Gaseous Diffusion Plant was to produce low-assay enriched uranium for use as commercial nuclear reactor fuel. In 1993, uranium enrichment operations were turned over to the United States Enrichment Corporation in accordance with the Energy Policy Act of 1992. Under the United States Enrichment Corporation, production of enriched uranium for use in the United States and abroad continues today. The United States Enrichment Corporation operates the enrichment program; however, the Department owns the physical plant and is responsible for the environmental remediation. The United States Enrichment Corporation is responsible for the operation and maintenance of all primary process and auxiliary facilities at Paducah.

It is assumed that the United States Enrichment Corporation will continue commercial gaseous diffusion operations beyond 2013.

Depleted Uranium Hexafluoride Conversion Facilities

Since the 1950s, the depleted uranium hexafluoride produced during enrichment operations at the Portsmouth and Paducah Gaseous Diffusion Plants (and the East Tennessee Technology Park in Tennessee) has been stored in large steel cylinders at the sites. DOE is responsible for the management of approximately 700,000 metric tons of depleted uranium hexafluoride stored in about 60,000 cylinders (~440,700 metric tons at Paducah). DOE has constructed a depleted uranium hexafluoride conversion facility at Paducah to convert the depleted uranium hexafluoride to a more stable form for reuse or disposal. DOE is ultimately responsible for the deactivation and decommissioning of the facilities.

The Department is committed to the cleanup of the Paducah Gaseous Diffusion Plant to industrial standards in the industrial area of the plant and to recreational standards for the rest of the site. Limited land areas will require institutional controls following remediation. Excess buildings at Paducah that are

not being leased are being assessed for by the Department for demolition. Equipment and material removed from buildings will be decontaminated, reused, or recycled to the extent practicable.

American Recovery and Reinvestment Act Activities

The Paducah American Recovery and Reinvestment Act activities are funded at \$78,800,000. Specifically, this funding will be used in the removal and disposal of large process equipment and demolition of surplus chemical processing facilities. This project will accelerate by five to 22 years a reduction in legacy contaminated areas and make significant progress in the disposition of contaminated materials and wastes.

American Recovery and Reinvestment Act funding will accelerate and complete the dismantlement and disposal of all major systems and large process equipment contained within the C-410 Uranium Hexafluoride Production Complex, and complete structural demolition of the entire C-410 Complex to slab (200,000 square feet). In addition, this funding will assist in accelerating and completing the dismantlement and disposal of all major systems and large process equipment contained within the C-340 Uranium Metal Production Complex; complete all preparatory activities to leave the C-340 Complex (C-340-A, C-340-B, and C-340-C process facilities) in a state of readiness for demolition; and complete structural demolition of two ancillary facilities (C-340-D and C-340-E) to slab (4,000 square feet).

The American Recovery and Reinvestment Act funding will also accelerate and complete the packaging and disposal of loose materials, dismantlement and disposal of all systems and smelter equipment contained within the C-746-A East End Smelter; and complete structural demolition of the entire Smelter facility to slab (21,000 square feet).

Site Description

The Paducah site, comprising approximately 3,400 acres, is located in rural western Kentucky, 15 miles west of Paducah, Kentucky, near the confluence of the Ohio and Mississippi rivers.

Site Cleanup Strategy/Scope of Cleanup

Historic operations at Paducah produced contaminated areas onsite and beyond site boundaries. Principal contaminants of concern include uranium (from enrichment processing), technetium, trichloroethylene, and polychlorinated biphenyls. Through spills and disposal operations, contaminants have entered groundwater aquifers, formed plumes, and in some cases have migrated offsite and contaminated private drinking water wells. Since its inception the Paducah site has generated, stored, and disposed of hazardous, non-hazardous, radioactive, polychlorinated biphenyls, transuranic, and mixed waste, as well as large quantities of scrap metal.

Site Completion (End State)

The overall environmental cleanup strategy at Paducah is based on taking near-term actions to control or eliminate ongoing sources of contamination along with continued investigation of other potential sources. DOE's plan includes completion milestones for groundwater sources in 2011(C-400); 2015 (southwest plum sources); soils in 2015, surface water in 2017, and burial grounds in 2019.

In addition, Paducah completed construction of the depleted uranium hexafluoride conversion facility at full capacity. DOE anticipates the depleted uranium hexafluoride conversion operations to continue for over twenty-five years. Including the known work scope for decontamination and decommissioning of the main gaseous diffusion plant facilities, the lifecycle planning estimate is 2040.

Regulatory Framework

In May 1994, the Paducah site was placed on the Environmental Protection Agency's National Priorities List under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980. The 1997 Federal Facility Agreement among the Department, the Commonwealth of Kentucky, and the Environmental Protection Agency-Region IV established the framework for cleanup at Paducah, instituted enforceable milestones, and coordinated site-specific cleanup requirements under the Comprehensive Environmental Response, Compensation, and Liability Act and the Resource Conservation and Recovery Act. The Department also achieved resolution of long-standing regulatory disputes through the Agreed Order with the Commonwealth of Kentucky.

The Environmental Protection Agency and the Kentucky Department for Environmental Protection are the principal regulatory agencies for Paducah's waste management operations. Requirements applicable to Paducah's waste management activities include provisions of the Resource Conservation and Recovery Act-Part B, Hazardous Waste Management Permits; the Toxic Substances Control Act regulations for polychlorinated biphenyl wastes; DOE Order 435.1-Radioactive Waste Management; the Commonwealth of Kentucky surface water discharge regulations and the Commonwealth of Kentucky solid and hazardous waste regulations.

Future use of the site will support ongoing and anticipated DOE missions, United States Enrichment Corporation enrichment operations, and other current users. Power distribution functions and facility utilization by the private sector at the site is not expected to substantially change until the United States Enrichment Corporation terminates enrichment operations. Support has been expressed for various forms of recreational and public use that are compatible with anticipated industrial and recreational uses of the reservation.

Critical Site Uncertainties and Assumptions

The Department does not have a clear regulatory agreement on polychlorinated biphenyl cleanup levels, which remains a long-term, end-state issue.

The final Comprehensive Environmental Response, Compensation and Liability Act action for the Paducah environmental remedial activities is ongoing. Until the Record of Decision is agreed upon, a high degree of project uncertainty exists.

Uncertainty with current planning assumptions introduces a significant uncertainty associated with the project lifecycle cost estimate. These assumptions include that no more than three burial grounds will require excavation, and that the other burial grounds will be capped and managed in situ. Although the current planning assumptions include long-term ground water plume remediation to drinking water standards, a high degree of project uncertainty exists in that primary source removal/treatment has not been completed.

Future decontamination and decommissioning costs will be subject to several significant uncertainties including the extent of final environmental contamination, regulatory frameworks (Resource Conservation and Recovery Act vs. Comprehensive Environmental Response, Compensation and Liability Act cleanup levels), disposal options, and stakeholder/regulator acceptance. Kentucky Pollutant Discharge Elimination System effluent limits on radionuclides (Permit issued 11/06) are held in abeyance pending issuance of a modified Kentucky Pollutant Discharge Elimination System Permit to reflect recent regulatory changes affecting radionuclide effluent limits.

Interdependencies

Paducah is dependent upon the Nevada Test Site and commercial waste disposal sites for low-level, and mixed low-level waste disposal.

Contract Synopsis

The Portsmouth/Paducah Project Office awarded remediation and infrastructure contracts for each site. This strategy provided the optimum potential for achieving accelerated performance of the remediation and infrastructure efforts. The infrastructure contract provides information technology, mail, site security planning, road and ground maintenance, janitorial, and real and personal property inventory and disposition services. The original award fee contract will be completed in March 2010, and a new contract is to be in place. The scope of the remediation contract at the Paducah site includes cleanup and closure of all inactive facilities not leased to the United States Enrichment Corporation, cleanup of soils, groundwater, landfills, storage yards, and the disposal of legacy waste (excluding the United States Enrichment Corporation leased units). The original cost-plus-incentive-fee contract will be completed in June 2010, and a new contract is to be in place. Deactivation and decommissioning of the diffusion plant process facilities is not part of the current remediation contract. Gaseous Diffusion Plant planning and transition activities are included as an option in both awards.

Cleanup Benefits

The intent of the Federal Government is to manage the site and its missions in an integrated manner. DOE retains overall responsibility for the site. Significant portions of the site are leased by the United States Enrichment Corporation under the provisions of a lease with DOE. Achievement of DOE responsibilities in environmental cleanup and legacy material disposition will reduce environmental health and safety risks.

Direct maintenance and repair at the Paducah Gaseous Diffusion Plant is estimated to be \$4,283,000.

Funding Schedule by Activity

	(dollars in thousands)		
	FY 2009	FY 2010	FY 2011
Non-Defense Environmental Cleanup			
Gaseous Diffusion Plants			
Paducah Gaseous Diffusion Plant			
PA-0011 / NM Stabilization and Disposition-Paducah Uranium Facilities Management	1,767	249	2,476
PA-0011X / NM Stabilization and Disposition-Depleted Uranium Hexafluoride Conversion	43,538	47,242	50,014
Subtotal, Paducah Gaseous Diffusion Plant	45,305	47,491	52,490
Uranium Enrichment Decontamination and Decommissioning Fund			
D&D Activities			
Paducah Gaseous Diffusion Plant			
PA-0013 / Solid Waste Stabilization and Disposition	13,218	13,218	7,747
PA-0040 / Nuclear Facility D&D-Paducah	99,045	99,045	72,156
PA-0102 / Paducah Contract/Post-Closure Liabilities/Administration (D&D Fund)	1,536	1,536	1,531
PA-0103 / Paducah Community and Regulatory Support (D&D Fund)	2,647	2,647	2,580
Subtotal, Paducah Gaseous Diffusion Plant	116,446	116,446	84,014
Total, Paducah	161,751	163,937	136,504

Performance Measure Summary

	Complete through FY 2009	Complete through FY 2010	Complete through FY 2011	Life-Cycle	FY 2011 % Complete
Paducah					
Geographic Sites Eliminated (number of sites)	0	0	0	1	0%
Depleted and Other Uranium packaged for disposition (Metric Tons)	0	0	7,750	457,750	1.7%
Enriched Uranium packaged for disposition (Number of Containers)	0	0	0	182	0%
Industrial Facility Completions (Number of Facilities)	17	17	19	172	11.1%
Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	19,150	19,896	20,642	26,608	77.6%
Nuclear Facility Completions (Number of Facilities)	0	0	0	19	0%
Radioactive Facility Completions (Number of Facilities)	2	2	3	22	13.6%
Remediation Complete (Number of Release Sites)	94	109	125	217	57.6%

Detailed Justification

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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**PA-0011 / NM Stabilization and Disposition-Paducah
Uranium Facilities Management**

1,767 249 2,476

This PBS is within the Non-Defense Environmental Cleanup appropriation.

This project scope includes surveillance and maintenance of inactive facilities, management of legacy polychlorinated biphenyl remediation activities, maintaining compliance with the Toxic Substances Control Act (40 CFR 761) and the Uranium Enrichment Toxic Substances Control Act Federal Facilities Compliance Agreement of 1992. It also supports DOE Orders and other applicable requirements and support to the Nuclear Regulatory Commission for the five-year report to Congress on environmental, safety, and health.

Currently, approximately 2,725 polychlorinated biphenyl spills have been cleaned up.

In FY 2011, the following activities are planned:

- Ensure safety and services continue regarding mission critical facilities and infrastructure.
- Inspect and maintain polychlorinated biphenyl collection and containment systems.
- Conduct cleanup, sampling and disposal of polychlorinated biphenyl spills.

Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
Enriched Uranium packaged for disposition (Number of Containers)	0	0	0	182	0%
Key Accomplishments (FY 2009)/Planned Milestones (FY 2010/FY 2011) <ul style="list-style-type: none"> ▪ Continue field activities associated with the polychlorinated biphenyl collections and containment troughing system in the cascade buildings (C-331, C-333, C-335, and C-337) and the cleanup, sampling, and decontamination of polychlorinated biphenyl spills and leaks. (FY 2009/September 2010/September 2011) ▪ Inspect and maintain the polychlorinated biphenyl collection and containment system. (FY 2009/September 2010/September 2011) 					

**PA-0011X / NM Stabilization and Disposition-
Depleted Uranium Hexafluoride Conversion**

43,538 47,242 50,014

This PBS is within the Non-Defense Environmental Cleanup appropriation.

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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This project scope includes activities related to maintaining compliance with the Resource Conservation and Recovery Act Permit, Site Treatment Plan, and the C-746-U Contained Landfill Permit. This project scope includes storage, treatment, and disposition of all legacy waste generated by activities at the Paducah Gaseous Diffusion Plant prior to 1993 and all newly-generated waste from waste storage, treatment, and disposal operations. Although the United States Enrichment Corporation handles its own waste treatment and disposal through DOE's lease agreement, DOE remains responsible for some waste streams which are generated by the United States Enrichment Corporations operation of the plant. DOE handles this waste as newly generated waste. The transuranic and mixed transuranic wastes are scheduled for disposition by 2016. This project scope also includes the operation of the onsite sanitary landfill (C-746-U) and its auxiliary buildings.

Currently, approximately 20,006 m³ (cumulative) of low-level/mixed low-level legacy waste has been disposed of either on- or off-site. Most of the remaining legacy waste was sorted, repackaged and characterized prior to on- or off-site treatment and/or disposal at the C-746 U Landfill.

In FY 2011, the following activities are planned:

- Continue landfill operations and maintenance.
- Characterize, treat, and dispose of any newly generated newly-generated waste.
- Complete the design for construction of cells 6-11 for the C-746-U on-site sanitary landfill.
- Conduct surveillance and maintenance of the waste storage buildings.

Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	19,150	19,896	20,642	26,608	78.0%
Key Accomplishments (FY 2009)/Planned Milestones (FY 2010/FY 2011)					
<ul style="list-style-type: none"> ▪ Expand on-site landfill, resulting in five cells for non-hazardous waste disposal. (FY 2009) ▪ Dispose of 1,669 cubic meters of newly generated waste and legacy mixed waste. (FY 2009) ▪ Operate and maintain the C-746-U landfill and various on-site waste storage facilities (September 2010/September 2011) ▪ Dispose of 746 cubic meters of newly generated waste (September 2010) ▪ Complete design for construction of Cells 6 through 11 for C-746-U on-site sanitary landfill (September 2011) 					

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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- Dispose of 76 cubic meters of newly generated waste. (September 2011)

PA-0040 / Nuclear Facility D&D-Paducah

99,045

99,045

72,156

This PBS is within the Uranium Enrichment Decontamination and Decommissioning Fund appropriation.

This project scope includes environmental cleanup and risk reduction through focused response actions and surveillance and maintenance activities, including decontamination and decommissioning of inactive or excess facilities at the Paducah Gaseous Diffusion Plant. Decontamination and decommissioning of the Paducah Gaseous Diffusion Plant itself is not yet included in the project scope, but limited planning has begun for the return (from lease by the United States Enrichment Corporation) and transition to DOE for decontamination and decommissioning.

This plant is an actively operating uranium enrichment facility surrounded by a wildlife management area. Past environmental operations created on- and off-site groundwater contamination which migrated to residential water wells and contaminated surface water.

This project scope includes remediation of C-400, the largest single source of groundwater contamination; decontamination and decommissioning of inactive soil facilities; surface water hot-spot removal actions; soil remediation; and groundwater dissolve phase plume actions. There are 12 burial grounds containing a variety of radioactive and hazardous wastes, and several contaminated surplus facilities which must be decontaminated and decommissioned.

Currently, progress includes approval of the Remedial Investigation Work Plan and completed remedial investigation field work at the burial ground operable unit. Evaluation of the data is ongoing. For the waste disposal cell, a sighting document and a cost estimate of various alternatives and proposed disposal sites is undergoing review. The contractor has also proposed a regulatory strategy for moving forward.

The United States Enrichment Corporation continues to provide support for Government Furnished Services & Items. The infrastructure contractor continues to provide services such as road repair, mowing, building repairs, IT, real property and fleet management, janitorial services, records management, and other services as necessary within the scope of the contract.

In FY 2011, the following activities are planned:

- Complete demolition of the C-410 Complex to slab.
- Continue demolition of C-340 A/B/C Complex.

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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- Complete fieldwork and Remedial Action Completion Report for the removal of two inactive soil facilities (C-218, and C410B).
- Sign Record of Decision for remediation of Southwest Plume sources.
- Complete a site-wide walkover for the areas outside the plant security fence.
- Issue C-400 Remedial Action Completion Report.
- Issue the D1 Soils Removal Action Work Plan to the Regulators and begin Soils Removal Action Field Work.
- Continue pump-and-treat operations and environmental surveillance, monitoring, and reporting.
- Conduct management and infrastructure surveillance and maintenance.
- Demolish the C-410 Complex, C-340-D, C-340-E, and C-746-A East End Smelter. This portion of the scope of work typically covered in this project is being executed with ARRA funding.

Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
Nuclear Facility Completions (Number of Facilities)	0	0	0	19	0%
Radioactive Facility Completions (Number of Facilities)	2	2	3	22	14.0%
Industrial Facility Completions (Number of Facilities)	17	17	19	172	11.0%
Remediation Complete (Number of Release Sites)	93	108	124	216	57.0%

Key Accomplishments (FY 2009)/Planned Milestones (FY 2010/FY 2011)

- Disposition all remaining mixed low-level waste (except mixed transuranic wastes) (FY 2009)
- Submit D1 Removal Action Work Plan-Surface Water Operation Unit (On-Site) to US Environmental Protection Agency and Kentucky (FY 2009)
- Issue D1 Burial Grounds Feasibility Study Report to the Environmental Protection Agency and the Kentucky Department of Environmental Protection (September 2010)
- Submit the D1 D&D EE.CA for C-340 to US Environmental Protection Agency and the Commonwealth of Kentucky (September 2010)
- Issue On-Site Comprehensive Environmental Response, Compensation and Reliability Act (September 2010)
- Submit D1 Remedial Action Completion Report-Groundwater Operable Unit (C-400) to US Environmental Protection Agency and Kentucky (April

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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2011/September 2011)

- Submit D1 Remedial Design Work Plan for the Southwest Plume Sources (September 2011)
- Submit C-340 D1 Removal Action Work Plan for Disposition of Inactive Facilities (September 2011)
- Submit D1 Remedial Action Work Plan for Surface Water Operable Unit (September 2011)

PA-0102 / Paducah Contract/Post-Closure Liabilities/Administration (D&D Fund)

1,536 1,536 1,531

This PBS is within the Uranium Enrichment Decontamination and Decommissioning Fund.

This project scope supports a contract liability to provide for record searches performed for DOE and the Department of Justice investigations/studies, pending litigation, Freedom of Information Act requests, and information requests from both state and Federal regulatory and elected officials.

In FY 2011, the following activities are planned:

- Provide support to DOE and Department of Justice for all investigations and litigation.
- Provide payment into the Paducah pension program to remain in compliance with the Employee Retirement Income Security Act and other applicable laws, and DOE O 350.1 requirements.

Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
No metrics associated with this PBS					

PA-0103 / Paducah Community and Regulatory Support (D&D Fund)

2,647 2,647 2,580

This PBS is within the Uranium Enrichment Decontamination and Decommissioning Fund.

This project scope includes an Agreement-in-Principle grant to the Commonwealth of Kentucky to provide independent oversight of the environmental programs at the Paducah Gaseous Diffusion Plant. The Commonwealth of Kentucky uses the grant funds to provide independent surface water, groundwater, air and other environmental monitoring at Paducah. These funds are not used by the Commonwealth of Kentucky to provide regulatory oversight. This project scope also supports the Federal Facility Agreement regulatory grant with the Commonwealth of Kentucky which provides for the administrative support necessary to oversee the requirements of the interagency agreement under the Comprehensive Environmental Response, Compensation, and Liability Act. Additionally, this project

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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scope also supports the activities performed by the Paducah Citizens Advisory Board.

In FY 2011, the following activities are planned:

- Continue support to the Citizens Advisory Board to assist in the public participation activities required by the Comprehensive Environmental Response, Compensation, and Liability Act.
- Ensure requirements are met regarding the Paducah Agreements-in-Principle and regulatory grants.

Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
No metrics associated with this PBS					
Key Accomplishments (FY 2009)/Planned Milestones (FY 2010/FY 2011)					
<ul style="list-style-type: none"> ▪ Provide financial support to the State for all Federal Facility Agreement administrative activities, including review/approval of Comprehensive Environmental Response, Compensation, and Liability Act documents (FY 2009/September 2010/September 2011) ▪ Provide financial support to the Commonwealth of Kentucky as required by the Agreement-in-Principle (FY 2009/September 2010/September 2011) 					

Total, Paducah	161,751	163,937	136,504
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Explanation of Funding Changes

FY 2011 vs. FY 2010 (\$000)

Non-Defense Environmental Cleanup

Gaseous Diffusion Plants

Paducah Gaseous Diffusion Plant

PA-0011 / NM Stabilization and Disposition-Paducah Uranium Facilities Management

▪ Increase provides for inspections and cleanup of spills of polychlorinated biphenyl collection and containment systems.	2,227
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PA-0011X / NM Stabilization and Disposition-Depleted Uranium Hexafluoride Conversion

▪ Increase provides for operations of the DUF6 Conversion Facility based on the current project estimate.	2,772
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FY 2011 vs. FY 2010 (\$000)

Uranium Enrichment Decontamination and Decommissioning Fund

D&D Activities

PA-0013 / Solid Waste Stabilization and Disposition

- Decrease in FY 2011 represents completion of more costly off-site legacy waste disposition. -5,471

PA-0040 / Nuclear Facility D&D-Paducah

- Decrease in FY 2011 reflects completion of construction and commissioning of C-400 Phase I and II and completion of enhanced groundwater plume monitoring system and optimization of Northwest plume pump-and-treat system. -26,889

PA-0102 / Paducah Contract/Post-Closure Liabilities/Administration (D&D Fund)

- No significant change. -5

PA-0103 / Paducah Community and Regulatory Support (D&D Fund)

- No significant change. -67

Total, Paducah	-27,433
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Portsmouth

Funding by Site

(dollars in thousands)

	FY 2009 Current Appropriation	FY 2009 Current Recovery Act Appropriation	FY 2010 Current Appropriation	FY 2011 Request
Portsmouth Gaseous Diffusion Plant	236,215	118,200	285,798	463,056
Total, Portsmouth	236,215	118,200	285,798	463,056

Site Overview

For approximately 50 years, the Portsmouth Gaseous Diffusion Plant in Piketon, Ohio, supported Federal Government and commercial nuclear power missions. The mission of the site has transitioned from enrichment operations to environmental cleanup, waste management, depleted uranium conversion, decontamination and decommissioning, re-industrialization, and long-term stewardship.

In 1993, uranium enrichment operations were turned over to the United States Enrichment Corporation in accordance with the Energy Policy Act of 1992. Uranium enrichment operations at Portsmouth were terminated in 2000. In 2005, the facilities were transitioned to cold shutdown. In FY 2007, the Department formally established the approach to implement decontamination and decommissioning and cleanup of the site. The decontamination and decommissioning contract is expected to be awarded in FY 2010. A number of other facilities at the site are no longer required by United States Enrichment Corporation and have been, or will be, returned to DOE for decontamination and decommissioning.

The Department is committed to clean up the Portsmouth site. The Department's decontamination and decommissioning cleanup responsibilities for the Gaseous Diffusion Plant facilities were specified in the Energy Policy Act of 1992. The Department is now working with the regulators and the local community to finalize the cleanup goals for the site.

Depleted Uranium Hexafluoride Conversion Facilities

Since the 1950s, the depleted uranium hexafluoride produced during enrichment operations at the Portsmouth and Paducah Gaseous Diffusion Plants (and the East Tennessee Technology Park in Tennessee) has been stored in large steel cylinders at the sites. DOE is responsible for the management of approximately 700,000 metric tons of depleted uranium hexafluoride stored in about 60,000 cylinders (~250,000 metric tons at Portsmouth). Construction of a depleted uranium hexafluoride conversion facility at Portsmouth to convert the depleted uranium to a more stable form for reuse or disposal was completed in FY 2008, with operations scheduled to begin in FY 2011. This facility will operate over the next two decades, and DOE is ultimately responsible for the decontamination and decommissioning of the facility.

American Recovery and Reinvestment Act Activities

The Portsmouth American Recovery and Reinvestment Act activities are funded at \$118,200,000. Specifically, this funding will complete demolition of three surplus building complexes, initiate remediation of contaminated soil, and initiate disposition of excess uranium material. Demolition will also be completed for the X-533 Switchyard structures including associated contaminated soil, the X-633 Cooling Tower structures, and the X-760 Chemical Engineering Building including associated contaminated soils.

Over 65 acres of contaminated soil will be restored, resulting in removal of the highest contaminant concentration groundwater plume source on the Portsmouth site. This will also result in the prevention of further potential groundwater contamination. This scope will now be completed in 2011 instead of in 2030.

Site Description

The Portsmouth site is located approximately 75 miles south of Columbus, Ohio in the foothills of the Appalachian Mountains.

Site Cleanup Strategy/Scope of Cleanup

The Portsmouth site's use of recycled reactor fuel (or reactor returns) as feed material in the 1950's introduced fission products such as technetium, cesium, and strontium into the system, as well as small quantities of transuranics, primarily plutonium and neptunium. Spills and waste disposal during past operations also resulted in contamination from various industrial solvents (e.g. trichloroethylene), uranium, technetium, and metals. Groundwater contamination is limited to a shallow aquifer that is not used as a drinking water source. Although all direct discharges from DOE operations have been monitored through a National Pollutant Discharge Elimination System permit since the early years of plant operations, minor levels of contaminants have been detected in nearby stream sediments.

DOE has focused environmental cleanup on high-risk areas first. DOE has completed all initial assessments required under the Resource Conservation and Recovery Act and has remediated several hazardous and solid waste sites. DOE is currently working with state and federal regulators as the site transitions to decontamination and decommissioning. This includes remedial action completion of the formally deferred units as they are de-leased and returned to the Department from the United States Enrichment Corporation. Facility decontamination and decommissioning is anticipated to be cleaned up using the Comprehensive Environmental Response, Compensation, and Liability Act process and environmental media (soil and groundwater) remediated in accordance with the Resource Conservation and Recovery Act Consent Decree with the Ohio Environmental Protection Agency and Consent Order with the United States Environmental Protection Agency. In addition, DOE will process the depleted uranium hexafluoride cylinders into a more stable form, for reuse or disposal.

The United States Enrichment Corporation-leased facilities are presently being deactivated to minimize future surveillance and maintenance costs. The current strategy is to implement full-scale decontamination and decommissioning upon award of a new contract in FY 2010 and to complete the decontamination and decommissioning activities in an accelerated manner.

Site Completion (End State)

The DOE obligation for decontamination and decommissioning of the Portsmouth Gaseous Diffusion Plant is a requirement of the Energy Policy Act of 1992.

The current end state completion for environmental restoration coincides with that of decontamination and decommissioning and completion of the depleted uranium hexafluoride conversion operations. The primary objectives of the near-term cleanup program will be to continue operations of groundwater treatment facilities in support of installed remedies and continue disposition of excess uranium materials and remove stored low-level and mixed waste streams contaminated with hazardous or toxic chemicals. Portsmouth will also decontaminate and decommission inactive ancillary facilities and initiate process building equipment removal actions, hazardous material abatement and deactivation activities. In addition, Portsmouth will operate the depleted uranium hexafluoride conversion facility at full capacity. Current plans include the transfer of leased gaseous diffusion plant facilities to the Department for surveillance, maintenance, and deactivation in preparation for decontamination and decommissioning. DOE anticipates the depleted uranium hexafluoride conversion operations to continue for approximately twenty years (including decontamination and decommissioning of the facility).

Regulatory Framework

Oversight of cleanup activities at the Portsmouth site is the responsibility of the Ohio Environmental Protection Agency and the Environmental Protection Agency - Region V. The program is being conducted in accordance with a State of Ohio Consent Decree and an Environmental Protection Agency Administrative Consent Order. The Ohio Environmental Protection Agency is the lead agency responsible for day-to-day oversight.

The Portsmouth site is not on the Comprehensive Environmental Response, Compensation, and Liability Act National Priorities List, but undertakes cleanup in accordance with Resource Conservation and Recovery Act and Comprehensive Environmental Response, Compensation, and Liability Act requirements. To facilitate site investigations and final cleanup actions, the Portsmouth site was divided into four quadrants based on groundwater flow and surface water runoff. Each quadrant contains multiple solid waste management units. The regulatory framework for final decontamination and decommissioning is currently being discussed with regulators and is anticipated to be an integration of decontamination and decommissioning under Comprehensive Environmental Response, Compensation, and Liability Act with ongoing environmental media cleanup activities under Resource Conservation and Recovery Act (Consent Order and Consent Decree). Discussions with the state and federal regulators are currently ongoing with the objective of submitting a draft Record of Decision for waste disposition activities in FY 2011.

Critical Site Uncertainties and Assumptions

It is assumed that United States Enrichment Corporation will support the timely return of leased gaseous diffusion plant facilities to the Department for decontamination and decommissioning as documented in the December 2009 Cold Shutdown contract modification between the Department and United States Enrichment Corporation.

DOE is evaluating the regulatory transition from the Nuclear Regulatory Commission to the DOE. This will require additional regulatory coordination with the State of Ohio and the Environmental Protection Agency and public involvement in planning efforts.

Future decontamination and decommissioning costs will be dependent upon the extent of final environmental contamination, regulatory frameworks (Resource Conservation and Recovery Act vs. Comprehensive Environmental Response, Compensation, and Liability Act cleanup levels), disposal/recycling options for the decontamination and decommissioning materials waste, and stakeholder/regulator acceptance.

Interdependencies

Portsmouth is dependent upon the Nevada Test Site waste disposal facility and commercial waste disposal sites for low-level and mixed low-level waste disposal.

The Portsmouth decontamination and decommissioning plan is incorporating lessons learned from the ongoing East Tennessee Technology Park decontamination and decommissioning project and the completed Fernald cleanup project.

Contract Synopsis

The Portsmouth/Paducah Project Office awarded the infrastructure and remediation contracts in 2009 at the Portsmouth site. The contracts provide incentives for improving remediation and infrastructure activities. The infrastructure contract provides information technology, human resources, mail, site security planning, road and ground maintenance, janitorial, and real and personal property inventory and disposition services. The remediation contract scope includes cleanup and closure of all inactive facilities not leased to United States Enrichment Corporation; cleanup of soil, groundwater, landfills, and storage yards; and disposal of waste (excluding leased units). The current cost-plus-incentive fee contract is expected to be completed in April 2010, and a new contract is expected to be in place.

The main process buildings are currently leased by United States Enrichment Corporation who performs surveillance and maintenance under a contract with the Department. DOE issued a Request for Proposal in FY 2009 and will award the contract for decontamination and decommissioning work in FY 2010. DOE is pursuing a strategy to significantly accelerate the decontamination and decommissioning activities and achieve completion in an expeditious manner.

Cleanup Benefits

The intent of the Federal government is to manage the site and its missions in an integrated manner. DOE retains overall responsibility for the site. Significant portions of the site footprint are managed by United States Enrichment Corporation under the provisions of a lease with DOE. Achievement of DOE responsibilities for environmental cleanup and legacy material disposition will reduce environmental health and safety risks.

Direct maintenance and repair at the Portsmouth Project Office is estimated to be \$3,823,000.

Funding Schedule by Activity

	(dollars in thousands)		
	FY 2009	FY 2010	FY 2011
Non-Defense Environmental Cleanup			
Gaseous Diffusion Plants			
Portsmouth Gaseous Diffusion Plant			
PO-0011 / NM Stabilization and Disposition-Portsmouth			
Other Uranium Facilities Management	8,564	8,641	0
PO-0011X / NM Stabilization and Disposition-Depleted			
Uranium Hexafluoride Conversion	27,427	44,753	46,974
Subtotal, Portsmouth Gaseous Diffusion Plant	35,991	53,394	46,974
Uranium Enrichment Decontamination and Decommissioning Fund			
D&D Activities			
Portsmouth Gaseous Diffusion Plant			
PO-0013 / Solid Waste Stabilization and Disposition	35,000	14,871	41,081
PO-0040 / Nuclear Facility D&D-Portsmouth	164,276	216,287	373,507
PO-0103 / Portsmouth Contract/Post-Closure			
Liabilities/Administration (D&D Fund)	635	614	773
PO-0104 / Portsmouth Community and Regulatory			
Support (D&D Fund)	313	632	721
Subtotal, Portsmouth Gaseous Diffusion Plant	200,224	232,404	416,082
Total, Portsmouth	236,215	285,798	463,056

Performance Measure Summary

	Complete through FY 2009	Complete through FY 2010	Complete through FY 2011	Life-Cycle	FY 2011 % Complete
Portsmouth					
Geographic Sites Eliminated (number of sites)	0	0	0	1	0%
Depleted and Other Uranium packaged for disposition (Metric Tons)	0	0	9,800	252,800	3.9%
Industrial Facility Completions (Number of Facilities)	8	8	8	121	6.6%
Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	35,754	35,754	35,754	35,754	100.0%
Nuclear Facility Completions (Number of Facilities)	0	0	0	13	0%
Radioactive Facility Completions (Number of Facilities)	7	7	7	27	25.9%
Remediation Complete (Number of Release Sites)	150	150	150	151	99.3%

Detailed Justification

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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**PO-0011 / NM Stabilization and Disposition-
Portsmouth Other Uranium Facilities Management** **8,564** **8,641** **0**

This PBS is within the Non-Defense Environmental Cleanup appropriation.

Final disposition of the highly enriched uranium will be completed in FY 2010.

In FY 2011, the following activities are planned:

- Project concluded.

Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
No metrics associated with this PBS					
Key Accomplishments (FY 2009)/Planned Milestones (FY 2010/FY 2011)					
<ul style="list-style-type: none"> ▪ Perform polychlorinated biphenyl activities in the process buildings to maintain compliance. (FY 2009/September 2010) ▪ Complete conversion and final processing of highly enriched uranium. (June 2010) ▪ Complete disposition activities associated with approximately 2,048 large LEU cylinders. (September 2010) 					

**PO-0011X / NM Stabilization and Disposition-
Depleted Uranium Hexafluoride Conversion** **27,427** **44,753** **46,974**

This PBS is within the Non-Defense Environmental Cleanup appropriation.

Approximately 700,000 metric tons of depleted uranium hexafluoride are stored in 60,000 cylinders (~250,000 metric tons at Portsmouth) at the Paducah and Portsmouth Gaseous Diffusion Plant sites. This PBS scope includes design, permitting, building, and operating a depleted uranium hexafluoride conversion facility at the Portsmouth Gaseous Diffusion Plant site. The facility converts depleted uranium hexafluoride into a more stable form of depleted uranium oxide suitable for reuse or disposition. The depleted uranium oxide will be sent to a disposal facility, and the hydrogen fluoride co-products will be sold on the commercial market. The empty cylinders will be sent to disposal or reused.

This project also includes surveillance and maintenance of all depleted uranium hexafluoride cylinders during conversion of the existing stockpile, which will take about 18 years.

Construction of the facility was completed in May 2008. Testing and commissioning activities

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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- Maintain waste minimization and pollution prevention programs to reduce the generation, volume, toxicity, and release of multi-media waste to promote the use of non-hazardous materials.
- Disposition filter ash and oil-leak material and the inventory stored at the Uranium Management Center (Building X-744G) which has no economic value or identifiable reuse.
- A portion of the scope of work typically covered in this project is being executed with ARRA funding.

Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	35,754	35,754	35,754	35,754	100.0%
Key Accomplishments (FY 2009)/Planned Milestones (FY 2010/FY 2011)					
<ul style="list-style-type: none"> ▪ Submitted annual Toxic Substance Control Act/Federal Facility Compliance Agreement compliance report to US Environmental Protection Agency. (FY 2009) ▪ Submit annual report for the Site Treatment Plan to the Ohio Environmental Protection Agency. (December 2009/December 2010/December 2011) ▪ Complete disposition of small cylinders. (September 2010) ▪ Complete Site Treatment Plan milestone for commercial stabilization. (March 2011) 					

PO-0040 / Nuclear Facility D&D-Portsmouth

164,276

216,287

373,507

This PBS is within the Uranium Enrichment Decontamination and Decommissioning Fund appropriation.

This project scope includes remedial actions due to contamination resulting from the plant’s historical uranium enrichment operations, inactive facility decontamination and decommissioning, and surveillance and maintenance activities at the Portsmouth Gaseous Diffusion Plant. The Department will award decontamination and decommissioning contract in FY 2010. Groundwater, sediment, and soil contamination exists at the site. Contaminants of concern include radioactive technetium-99, polychlorinated biphenyls, trichloroethylene, and heavy metals. DOE will continue to operate active and passive groundwater treatment systems until regulatory cleanup levels are achieved. Corrective measures have been implemented at five groundwater plumes; one of the plumes is migrating off the southern reservation boundary onto private property. Additional remedial actions are being implemented to address off-site migration.

Currently, Quadrant I, III, and IV corrective actions have been completed in preparation for final remedial actions. All initial remedial investigations and corrective measures studies required under the applicable regulations and agreements have been completed. The Quadrant II Corrective Measure

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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Study/Corrective Measure Implementation has been submitted to the Ohio Environmental Protection Agency. DOE is awaiting the issuance of a Quadrant II decision document by the Ohio Environmental Protection Agency.

In FY 2011, the following activities are planned.

- Initiate process building equipment removal actions, hazardous materials abatement and other deactivation activities.
- Begin increased level of deferred unit remediation activities (buildings for which RCRA facility investigation has been deferred) in accordance with the deferred unit strategy.
- Begin increased level of decontamination and decommissioning of gaseous diffusion plant ancillary facilities and systems.
- Disposition decontamination and decommissioning waste off-site (during an interim period until a decision regarding waste disposition, including a potential on-site waste disposal facility and metal recycling is made in consultation with regulators and stakeholders).
- Continue site-wide infrastructure surveillance and maintenance to maintain compliance.
- Begin increased level of small equipment removal, utility optimizations and hazardous material abatement actions within the gaseous diffusion plant operations buildings.
- A portion of the scope of work typically covered in this project is being executed with ARRA funding.

Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
Nuclear Facility Completions (Number of Facilities)	0	0	0	13	0%
Radioactive Facility Completions (Number of Facilities)	7	7	7	27	26.0%
Industrial Facility Completions (Number of Facilities)	8	8	8	121	7.0%
Remediation Complete (Number of Release Sites)	20	20	20	21	95.0%
Key Accomplishments (FY 2009)/Planned Milestones (FY 2010/FY 2011)					
<ul style="list-style-type: none"> ▪ Submit Phase III Remedial Action Report for Remediation of X-701B Solid Waste Management Unit to the Ohio Environmental Protection Agency and the US Environmental Protection Agency. (FY 2009) ▪ Submit Monthly Technical Progress reports and Quarterly Progress reports to the Ohio Environmental Protection Agency. (FY 2009) 					

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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- Award decontamination and decommissioning and surveillance and maintenance contract. (June 2010)
- Continue D&D of gaseous diffusion plant ancillary facilities and systems. (September 2010)
- Transition to the decontamination and decommissioning and surveillance and maintenance contracts. (September 2010)
- Submit Final Certification Report for the remediation of the X-701B Solid Waste Management Unit to the Ohio Environmental Protection Agency and the US Environmental Protection Agency (December 2010)
- Initiate process building equipment removal actions and other deactivation activities. (September 2011)

PO-0103 / Portsmouth Contract/Post-Closure Liabilities/Administration (D&D Fund)

635 614 773

This PBS is within the Uranium Enrichment Decontamination and Decommissioning Fund.

The scope of this project supports ongoing litigation expenses, record searches and defense of numerous legal claims filed by plaintiffs alleging damages from or relating to the Portsmouth Gaseous Diffusion Plant. Record searches support legal claims, DOE and Department of Justice investigations/studies, Freedom of Information Act requests, and requests from both state and Federal regulatory and elected officials. There is no clean end-state to these activities. DOE is required to defend itself against all current and future litigation.

In FY 2011, the following activities are planned:

- Continue to provide defense against legal claims filed against the Government and its contractors.
- Continue record searches in support of legal claims, DOE and Department of Justice investigations/studies, Freedom of Information Act requests, and requests from both state and Federal regulatory and elected officials.

Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
No metrics associated with this PBS					
Key Accomplishments (FY 2009)/Planned Milestones (FY 2010/FY 2011)					
<ul style="list-style-type: none"> ▪ Continue record searches in support of legal claims, DOE and Department of Justice investigations/studies, Freedom of Information Act requests, and requests from both State and Federal regulatory and elected officials. (FY 2009/September 2010/September 2011) ▪ Defend against legal claims filed against the Government's contractors. (FY 2009/September 2010/September 2011) 					

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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PO-0104 / Portsmouth Community and Regulatory Support (D&D Fund)

313 632 721

This PBS is within the Uranium Enrichment Decontamination and Decommissioning Fund.

This project supports activities to promote active involvement with the state and local stakeholders in the EM planning and decision-making processes and provides the opportunity for meaningful involvement in managing the cleanup and closure of the site. This project scope includes Payments-In-Lieu-Of-Taxes for Ohio’s Pike County.

In FY 2011, the following activities are planned:

- Continue to support oversight activities of the Ohio Environmental Protection Agency.
- Continue support for the designated Site Specific Advisory Board.
- Continue Payments-In-Lieu-Of-Taxes to Ohio’s Pike County.

Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
No metrics associated with this PBS					
Key Accomplishments (FY 2009)/Planned Milestones (FY 2010/FY 2011)					
<ul style="list-style-type: none"> ▪ Support the Ohio Environmental Protection Agency grant to support activities associated with the Portsmouth Consent Decree oversight. (FY 2009/September 2010/September 2011) 					

Total, Portsmouth	236,215	285,798	463,056
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Explanation of Funding Changes

FY 2011 vs. FY 2010 (\$000)

Non-Defense Environmental Cleanup

Gaseous Diffusion Plants

Portsmouth Gaseous Diffusion Plant

PO-0011 / NM Stabilization and Disposition-Portsmouth Other Uranium Facilities Management

- Decrease reflects the conclusion of the Highly Enriched Uranium Program activities.

-8,641

PO-0011X / NM Stabilization and Disposition-Depleted Uranium Hexafluoride Conversion

- Increase provides for operations of the DUF6 Conversion Facility based on the current project estimate.

2,221

Uranium Enrichment Decontamination and Decommissioning Fund

D&D Activities

PO-0013 / Solid Waste Stabilization and Disposition

- Increase funding provides for waste management and support for packaging, treatment, shipment and disposal of waste offsite from the Uranium Management Center.

26,210

PO-0040 / Nuclear Facility D&D-Portsmouth

- Increase reflects additional funding to transition from the Cold Shutdown/Remediation work scopes to the federally mandated Decontamination and Decommissioning /Remedial Action work scopes. This funding supports an accelerated closure by providing an increased level of small equipment removal and hazardous material abatement actions within the gaseous diffusion plant operations buildings.

157,220

PO-0103 / Portsmouth Contract/Post-Closure Liabilities/Administration (D&D Fund)

- No significant change.

159

PO-0104 / Portsmouth Community and Regulatory Support (D&D Fund)

- No significant change.

89

Total, Portsmouth

177,258

Richland

Funding by Site

(dollars in thousands)

	FY 2009 Current Appropriation	FY 2009 Current Recovery Act Appropriation	FY 2010 Current Appropriation	FY 2011 Request
Hanford Site	958,111	1,634,500	975,792	952,968
Richland Operations Office	19,620	0	21,940	19,620
Total, Richland	977,731	1,634,500	997,732	972,588

Site Overview

The Richland Operations Office manages cleanup of the Hanford Site, with the exception of the work managed by the Office of River Protection and the Pacific Northwest National Laboratory (managed by the Office of Science, Pacific Northwest Site Office).

The Hanford Site was established during World War II to produce plutonium for the nation's nuclear weapons. The last reactor to be decommissioned was the N-Reactor, and its spent nuclear fuel, originally stored in the K-Basins, has since been relocated to dry storage on the Central Plateau (also known as the 200 Area). The Central Plateau (200 Area) is the location of the former processing facilities where special nuclear materials were recovered and converted into forms that could be shipped to other sites for weapons manufacture and assembly. Support facilities are located in the 1100 Area, most of which have been turned over to the local community. The Hanford mission is now primarily site cleanup and environmental restoration to protect the Columbia River. The cleanup is addressed in commitments in a 1989 consent agreement, known as the Tri-Party Agreement. Parties to the agreement include the DOE, the U.S. Environmental Protection Agency, and the Washington State Department of Ecology.

American Recovery and Reinvestment Act Activities

The Hanford Site, Richland Operations Office American Recovery and Reinvestment Act activities are funded at \$1,634,500,000. Specifically, this funding will be used to demolish nuclear and support facilities, remediate waste sites, remediate contaminated groundwater, and retrieve solid waste from burial grounds. Accelerated cleanup of facilities, waste sites, and groundwater along the Columbia River will take place to support shrinking the active area of cleanup at the 586-square-mile Hanford Site to 75 square miles or less by 2015, more than five years ahead of the current schedule. Also, waste retrieval from the burial grounds will be accelerated by at least six years. These projects will include complete deactivation of Building 234-5Z process areas and laboratory areas and make them ready for demolition.

The American Recovery and Reinvestment Act funding will be used to complete construction of the 200-ZP-1 Operable Unit groundwater pump-and-treat system; complete construction of the 100-D Area groundwater pump-and-treat system; install 265 wells and/or boreholes along the Columbia River and in the Central Plateau; and decommission 280 old wells and boreholes.

Demolition of 30 facilities and remediation of 23 Waste Sites will occur at the 100 K area and American Recovery and Reinvestment Act funds will be used to excavate and construct the Environmental Restoration and Disposal Facility Super Cells 9 and 10. The Environmental Restoration and Disposal Facility operations will support footprint reduction by accelerating waste site remediation and facility demolition. This work also includes equipment and facility upgrades as well as mission general support. Workscope funded within the American Recovery and Reinvestment Act subproject also includes Discovery (orphan) waste sites characterization and remediation.

The American Recovery and Reinvestment Act funding will support the activities leading to the remediation of 618-10 burial ground and support critical path activities in the River Corridor contract. The 618-10 workscope included in the American Recovery and Reinvestment Act funding provides for characterization of the burial grounds.

Site Description

Hanford Site - Richland Operations Office: As noted above, the Richland Operations Office manages the majority of the Hanford Site in southeastern Washington State. The 1,533 square kilometer (586 square mile) site contains the Central Plateau, the River Corridor, the Fast Flux Test Facility, and the 600 Area.

Central Plateau:

The central part of the site is known as the 200 Area or the Central Plateau. The 200 Area is the location of chemical processing facilities used to separate and recover plutonium for use in nuclear weapons and several other valuable isotopes. Past releases of radioactive and regulated chemical materials have contaminated Hanford's facilities, groundwater, soils, and environment. Over 625,000 cubic meters of solid waste were buried in Hanford site soils, while more than 1.7 trillion liters of liquid waste containing radioactive and chemical contamination were discharged to the ground. The 200 Area's current mission involves cleanup of radioactivity and chemical contamination in about 800 waste sites, and approximately 1,000 buildings and structures.

Much of the Hanford Site's existing infrastructure has its roots in the Manhattan project. Sufficient infrastructure will be maintained as the cleanup mission progresses. As the need for the infrastructure diminishes, these systems and components will be demolished, removed or placed in long-term stewardship. The Central Plateau contains the following areas:

- **200 East Area:** The 200 East Area covers approximately 9.1 square kilometers (3.5 square miles). The area has two processing plants: B Plant and Plutonium Uranium Extraction Plant. B Plant was deactivated in 1998 and Plutonium Uranium Extraction Plant was shutdown in 1997. The Effluent Treatment Facility, the Treated Effluent Disposal Facility, the Waste Encapsulation and Storage Facility, and the Canister Storage Building used in waste management activities are located in this area. The Canister Storage Building and surrounding areas store spent nuclear fuel and include the necessary security controls, including facility upgrades for the balance of spent fuel consolidation to this location. Offices and infrastructure support facilities are also located in the 200 East Area.
- **200 West Area:** The 200 West Area covers just under 13 square kilometers (5 square miles) and is located about 13 kilometers (8 miles) from the Columbia River and 40 kilometers (25 miles) from

Richland. The 200 West Area includes Central Waste Complex, Waste Receiving and Processing, Environmental Restoration and Disposal Facility and three processing plants: U Plant and S Plant have been shut down, and T Plant is now used as the site's decontamination facility.

River Corridor

The River Corridor includes the eight production reactors (100 Area) and associated facilities as well as the fuel fabrication, research and development facilities in the 300 Area located in north Richland. The following areas are located along the Columbia River in southeastern Washington State:

- 100 B & C Areas: B Reactor, the world's first full-scale nuclear reactor, was named a National Historic Landmark by the Department of the Interior in August 2008. Most of the soil contamination at 100-B has been remediated but there are several small waste sites that still require remediation. The C Reactor is adjacent to the B Reactor and has been placed in interim safe storage (cocooned) for up to 75 years reducing the time and money needed for regular surveillance and maintenance.
- 100 K-West & K-East Areas: K-West and K-East reactors were built in 1955 and were shut down in 1970 and 1971. Even though the reactors were shut down, their fuel storage basins remained in operation, providing storage for up to 2,100 metric tons of spent nuclear fuel. The highly radioactive spent nuclear fuel from the K Basins has now been retrieved, cleaned, packaged, and safely stored away from the Columbia River in the 200 Area. In addition, approximately 300 tons of highly radioactive debris has been removed from the K Basins and disposed. However, 29 cubic meters of radioactive sludge remain in K-West Basin that must be removed and treated. Demolition of the K-East Basin was completed in FY 2009 and waste site remedial activities are ongoing.
- 100 N Area: N Reactor operated from 1963 to 1987 when it was shut down for maintenance, refueling, and safety upgrades. The N Reactor has been deactivated and the Interim Safe Storage process was initiated in FY 2009. This area contains slightly more than 100 buildings of which 23 have been demolished.
- 100 D & DR Areas: D Reactor was one of the three original reactors built in World War II. The reactor next to it is known as DR, or the D Replacement. The D and DR Reactors have been placed into interim safe storage. Cleanup of high-priority liquid waste sites in the 100-D Area began in 1996 and remediation of the burial grounds started in 2008.
- 100 H Area: Construction of H Reactor began in March 1948 and began operations in 1949 and was shut down in 1965. H Reactor was placed into interim safe storage in October 2005 and remediation of the burial grounds started in 2008.
- 100 F Area: F Reactor went into production in February 1945 during World War II and was shut down in 1965. A majority of the 100-F Area soil site remediation was completed in December 2008 and all of the burial grounds have been remediated. The remaining waste sites will be completed by December 2012.
- 300 Area: The 300 Area's two main functions were production (or fabrication) of fuel for the reactors (performed in the north end of the area) and chemical research to improve the entire fuel fabrication and processing capability. Many laboratories in this area are undergoing cleanup,

deactivation, and demolition. The 300 Area buildings that remain active include laboratories, technical shops, engineering offices, their support facilities and the 310 Treated Effluent Disposal Facility (water treatment facility) and the 340 Facility.

Fast Flux Test Facility

The Fast Flux Test Facility is located in the 400 Area of the Hanford Site. Construction planning began in 1965, during the height of commercial nuclear power building and experimentation. Final shut down of the facility took place in January 2001. The facility has been placed in low-cost surveillance and maintenance mode prior to initiating full-scale decommissioning activities.

600 Area

The 600 Area includes all of the Hanford Site not occupied by the 100, 200, 300, and 400 areas. The Eberhart/Fitzner Arid Lands Ecology Reserve and the Hanford Reach National Monument/Saddle Mountain National Wildlife Refuge, managed by the U.S. Fish and Wildlife, serve as a security buffer for the activities conducted in the 100 and 200 Areas. Also located in this area is Energy Northwest Power, which operates a nuclear power plant on leased land. The 600 Area also hosts utility corridors and remediation sites, such as 618-10 and 618-11 Burial Grounds.

Transfer to Non-Federal Entity

Hanford's 1100 Area served for half a century as the hub of the site's support services. On September 30, 1998, the 1100 Area, the 26 facilities within it, and the 16 southern-most miles of the Hanford Railroad were transferred by DOE to Richland's Port of Benton for use in regional economic development. Transfer of the 768-acre 1100 Area (about 3.6 square kilometers, or 1.4 square miles) pushed the Hanford Site border north by about a mile.

Site Cleanup Strategy/Scope of Cleanup

The primary focus for the Hanford Site is the safe storage, treatment, and disposal of Hanford's legacy wastes and environmental restoration. The cleanup strategy is a risk-based approach that focuses first on those contaminant sources that are the greatest contributors to risk. Risk to the public, workers, and environment will be reduced by removing or stabilizing contamination before it migrates to the Columbia River or the groundwater. This includes cleanup of facilities and waste sites in the 100, 200, 300, 400, and 600 Areas, as well as, retrieval of suspect transuranic waste for final disposition off-site. The final focus is the cleanup of the 200 Area Central Plateau with priority on the decontamination and decommissioning of the Plutonium Finishing Plant and completion of groundwater remediation. Safe and secure interim storage of special nuclear material and spent nuclear fuel will continue to be maintained.

Site Completion (End State)

The Federal government is expected to maintain ownership of most of the site once cleanup is complete. The lifecycle planning estimate is 2050 to 2062. To date, about 50 percent of Hanford Site lands have been cleaned up or transferred for alternate uses. The North Slope has been put under the management of other Federal and Washington State agencies, but remains under DOE ownership as a safety buffer zone and pristine habitat. In 1999, DOE completed an environmental impact statement for the Final

Comprehensive Land Use Plan. Final decisions on the level of cleanup to be performed on individual waste sites continue to be made through the Comprehensive Environmental Response, Compensation, and Liability Act and the Resource Conservation and Recovery Act decision processes.

- **K Basin Closure:** K Basins closure is the highest risk reduction project due to its proximity to the Columbia River. Significant risk reduction has been achieved through removal of 2,100 metric tons of spent nuclear fuel from K Basins, representing over 55 million curies of radioactivity (95 percent of the radioactivity in Hanford's River Corridor) from near the Columbia River. Additional risk reduction will be achieved by treating the remote-handled transuranic sludge and placing it in a form suitable for disposition at the Waste Isolation Pilot Plant. The schedule for sludge treatment and disposition is currently being developed.
- **River Corridor Closure Project:** The River Corridor Closure Project will remediate 761 contaminated waste sites (including 50 burial grounds); deactivate, decontaminate, decommission and demolish 379 facilities adjacent to the Columbia River; and place eight reactors into interim safe storage condition. Completion of the project is expected by the contract end date of 2015 or earlier. The work includes excavating and disposing of contaminated soil, backfilling with clean soil, constructing interim safe storage for the reactors, and demolishing the old reactor complexes and facilities in the 300 Area. The project has the goal of ensuring that the land is sufficiently clean to support land management by 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.
- **Transuranic Retrieval:** All contact-handled suspect transuranic waste in the low-level burial grounds will be retrieved by December 2017, with the expectation that about half will be disposed as transuranic waste and half as low-level and mixed low-level wastes. Retrieval of the remote-handled waste will be performed by 2018. Processing of transuranic waste for shipment to the Waste Isolation Pilot Plant will occur in the Waste Receiving and Processing facility and T Plant. Upon completion of this cleanup work, all retrievably stored waste will have been retrieved and transferred to a treatment, storage, and/or disposal facility. Newly generated transuranic waste activities will continue in support of the Hanford mission.
- **Groundwater Remediation:** This project includes remediation and monitoring of groundwater/vadose zone to address contamination by carbon tetrachloride, chromium, technetium, strontium, and uranium. The end-state and cleanup decisions for existing groundwater plumes are to be completed by December 2011. Final groundwater remediation systems will be constructed as final cleanup decisions are made. Completion of Groundwater remediation facilities construction is projected to be accomplished and the facilities operating by 2015.
- **Solid Waste Disposal:** About 70,000 cubic meters of mixed low-level waste will be treated to meet regulatory requirements and then disposed of on-site in the mixed waste trenches (i.e., Burial Ground 218-W-5, or Trenches 31 and 34) or the Environmental Restoration Disposal Facility. About 130,000 cubic meters of low-level waste will be disposed of on-site in the mixed waste trenches and the Environmental Restoration Disposal Facility. In addition, liquid waste will be treated through the Effluent Treatment Facility, the Liquid Effluent Retention Facility, and the Treated Effluent Disposal Facility. The liquid waste processed through these facilities will be disposed to the soil through Washington State permitted disposal systems. Hanford will continue to operate facilities for the disposal of low-level and mixed low-level waste from Hanford and off-site generators.

- **Plutonium Finishing Plant Project:** The project provides storage of special nuclear materials and maintains the facilities in a safe and secure manner until the completion of demolition. Upon removal of all special nuclear material and fuels, the security area will be eliminated and the Plutonium Finishing Plant complex will be demolished to slab-on-grade.
- **Central Plateau Cleanup:** Over 625,000 cubic meters of solid waste 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. DOE will clean up radioactivity and chemical contamination in about 800 waste sites that have the potential to impact groundwater, and demolish approximately 900 facilities on the Central Plateau and South Hanford Industrial Area.
- **Fast Flux Test Facility:** DOE has completed major elements of deactivation, including reactor defueling, fuel washing, dry packaging, storage (in storage casks) of the mixed oxide fuel (367 reactor fuel assemblies), transfer of all sodium-bonded fuel to the Idaho National Laboratory (11 shipments), and the draining of 260,000 gallons of bulk sodium in plant systems, reactor vessel and fuel storage vessels. DOE's contractor has completed final deactivation to place the facilities into long-term surveillance and maintenance, which included disposition of polychlorinated biphenyl transformers, reconfiguring electrical systems for surveillance and maintenance, cutting and capping water lines.

Regulatory Framework

As noted earlier, the U. S. Department of Energy, the U. S. Environmental Protection Agency, and the State of Washington Department of Ecology signed a comprehensive cleanup and compliance agreement on May 15, 1989. The Hanford Federal Facility Agreement and Consent Order, or Tri-Party Agreement, is an agreement for achieving compliance with the Comprehensive Environmental Response, Compensation, and Liability Act remedial action provisions and with the Resource Conservation and Recovery Act treatment, storage, and disposal unit regulations and corrective action provisions. More specifically, the Tri-Party Agreement: 1) defines and ranks cleanup commitments; 2) establishes responsibilities; 3) provides a basis for budgeting; and 4) reflects a concerted goal of achieving full regulatory compliance and remediation with enforceable milestones in an aggressive manner. In August 2009, the three parties approved a change package for the Hanford Federal Facility Agreement and Consent Order. The following milestones are currently subject to potential renegotiation.

Tri-Party Agreement/Compliance Milestones:

Tri-Party Agreement significant milestones for Plutonium Finishing Plant Project

- M-083-00A, Plutonium Finishing Plant Facility Transition and Selected Disposition Activities by September 2016

Tri-Party Agreement significant milestones for Transuranic Retrieval

- M-091-40, Complete Retrieval of Contact-Handled Waste to be determined by M-091-45
- M-091-41A, Complete Retrieval of Non-Caisson Remote-Handled Waste by December 2014
- M-091-42, Complete Treatment or Certification of Contact Handled Transuranic Mixed Waste to be determined by M-091-45
- M-091-41B, Complete Retrieval of the 200A Caisson Remote-Handled Waste in 218-W-4B by December 2018

- M-091-45, The Parties Will Complete Negotiations and DOE Will Submit a Change Package for Interim Milestones to Replace All “To Be Determined” Dates in M-091-01, M-091-40, M-091-42, and M-091-43, by February 2010

Tri-Party Agreement significant milestones for River Corridor Closure Project

- M-016-00A, Complete All Interim Response Actions for the 100 Areas, with the exception of the 100 K Area, by December 2012
- M-093-22, Complete 105-KE Reactor Interim Safe Storage in Accordance with the remedial Design/Remedial Action Work Plan by July 2014
- M-094-00, Complete Disposition of 300 Area Surplus Facilities by September 2015
- M-016-69, Complete All Interim 300 Area Remedial Actions by September 2015

Tri-Party Agreement significant milestones for the Groundwater Remediation

- M-015-73, Submit Feasibility Study Report and Proposed Plan for the 200-PO-1 Operable Unit by December 2011
- M-015-00D, Complete the Remedial Investigation/Feasibility Study through the submittal of a proposed plan for all 100 and 300 area operable units by December 2012
- M-016-120, Complete groundwater treatment system for the Tc-99 plume at the S/SX Tank Farm within the 200-UP-01 Operable Unit by December 2011

Tri-Party Agreement significant milestones for the Central Plateau Cleanup

- M-015-00, Complete 200 Area Remedial Investigation/Feasibility Study Process for all Non-Tank Farm Operable Units by to be determined
- M-016-00, Complete Remedial Actions for all Non-Tank Farm Operable Units by September 2024

Critical Site Uncertainties and Assumptions

The Richland Operations Office is currently addressing a number of significant known uncertainties including:

- Availability of off-site disposal for spent fuel and high-level waste;
- The acceptance of cleanup levels in Records of Decision by regulators to support deletion of the Hanford Site from the National Priority List;
- Records of Decision for the Central Plateau that will define cleanup actions of Central Plateau waste sites;
- Unexpected contamination at some waste sites or facilities;
- The final disposition of the cesium and strontium capsules (including any needed treatment and re-packaging).

Interdependencies

Richland has identified the following near-term interdependencies needed for mission execution:

- **Transuranic Waste Shipments:** About 27,000 cubic meters of transuranic waste is to be processed and shipped to the Waste Isolation Pilot Plant from the Hanford Site.
- **Department of Defense Naval Reactors:** Over 200 defueled naval reactor compartments will be disposed of in a dedicated trench at the Hanford Site in the 200 Area.
- Approximately 2,100 metric tons of spent nuclear fuel currently in interim storage at the Hanford Site are awaiting off-site disposal.
- Approximately 1,936 cesium and strontium capsules currently in interim storage at the Hanford Site are awaiting off-site disposal.
- Remediation of Central Plateau waste sites will need to be coordinated with the Office of River Protection's tank farm and Waste Treatment and Immobilization Plant activities.
- Consolidation of special nuclear materials must be coordinated with sites presently storing materials, NNSA transportation assets, and the Savannah River Site.

Contract Synopsis

In June 2008, the Plateau Remediation Contract was awarded. This cleanup contract, managed through the Richland Operations Office, deals with the cleanup of the central portion of the Hanford Site, which once housed five chemical separations buildings and other facilities that separated and recovered plutonium and other materials for use in nuclear weapons.

The work managed by the Richland Operations Office is also executed through two other contract vehicles. The River Corridor Closure contract, a cost-plus-incentive-fee type contract awarded in June 2005, covers cleanup of the nuclear reactor sites and the industrial 300 Area along the Columbia River as well as facilities in the 400 Area and two burial grounds in the 600 Area. The cost-plus-incentive-fee type contract was implemented to increase efficiency and accelerate the schedule for cleanup. In May 2009, the third contract Mission Support Contract was awarded. This contract will provide cost-effective infrastructure and site services integral and necessary to accomplish the Hanford Site's environmental cleanup mission. The scope of the Mission Support Contract includes five primary functions: Safety, Security and Environment; Site Infrastructure and Utilities; Site Business Management; Information Resources/Content Management; and Portfolio Management.

Cleanup Benefits

Near Term

The legacy of Hanford's 40 years of nuclear weapons production for the nation's defense includes enormous quantities of spent nuclear fuel, leftover plutonium in various forms, buried waste, contaminated soil and groundwater, and contaminated buildings that must undergo cleanup and be torn down. Forty percent of the approximately one billion curies of human-made radioactivity that exist across the nuclear weapons complex reside at Hanford and must be dealt with to protect human health and the environment.

The cleanup momentum over the past several years has been and continues to be focused on completing cleanup along the Columbia River Corridor, which is expected to be complete by 2015, and transitioning the Central Plateau of the Hanford Site to a modern, protective waste management operation—driving down the risks to workers, the community, and the environment.

- Spent Nuclear Fuel (K Basins Closure) project completed and removed more than 55 million curies of radioactivity—more than 95 percent of the radioactivity in Hanford’s River Corridor.
- Reactor Interim Safe Storage has been completed for five of the eight reactors to be placed in interim safe storage at Hanford.
- With the September 2007 decision to consolidate plutonium at the Savannah River Site, ninety-nine percent of the plutonium at the Plutonium Finishing Plant will be shipped off-site to eliminate risk (the remaining one percent will be dispositioned elsewhere) and allow the Plutonium Finishing Plant to be decontaminated and decommissioned.
- Risks associated with the radioactive fuel and liquid sodium coolant at the Fast Flux Test Facility will be reduced and the facility will be placed in long-term surveillance and maintenance.

Longer Term

- Complete Comprehensive Environmental Response, Compensation, and Liability Act Records of Decision for the Central Plateau and initiate remediation activities.
- Complete retrieval of contact-handled transuranic waste by December 2017 reducing the environmental risks in the 200 Area.
- Complete remedial actions in the 100 B/C, 100F, and 100H areas.
- Complete K Basins sludge treatment, demolition of the basins, and 100 K Area remediation.
- Complete conversion of KE, KW, and N reactors to interim safe storage—the last of the eight reactors to be placed in interim safe storage.
- Once remedial actions have been implemented per the Records of Decision, transition to Long-Term Stewardship.

Direct maintenance and repair estimate at the Richland Operations Office is \$40,158,000.

Funding Schedule by Activity

In FY 2011, EM is proposing to transfer existing PBSs from the currently established control points of 2012 Accelerated Completions and 2035 Accelerated Completions to newly created control points of Central Plateau Remediation and River Corridor and Other Cleanup Operations. These new controls points are being proposed in order to better align EM activities with our overall cleanup strategy at the site.

The funding table below provides a non-comparable display of the PBSs between control points.

	(dollars in thousands)		
	FY 2009	FY 2010	FY 2011
Defense Environmental Cleanup			
Hanford Site			
2012 Accelerated Completions			
RL-0041 / Nuclear Facility D&D-River Corridor Closure Project	238,337	327,955	0
RL-0011 / NM Stabilization and Disposition-PFP	113,483	86,700	0
RL-0012 / SNF Stabilization and Disposition	124,671	126,712	0
Subtotal, 2012 Accelerated Completions	476,491	541,367	0
2035 Accelerated Completions			
RL-0100 / Richland Community and Regulatory Support	19,620	21,940	0
RL-0040 / Nuclear Facility D&D-Remainder of Hanford - 2035	103,282	90,313	0
RL-0030 / Soil and Water Remediation-Groundwater/Vadose Zone - 2035	175,238	205,390	0
RL-0013C / Solid Waste Stabilization and Disposition-2035	192,345	131,070	0
Subtotal, 2035 Accelerated Completions	490,485	448,713	0
Central Plateau Remediation			
RL-0011 / NM Stabilization and Disposition-PFP	0	0	64,969
RL-0012 / SNF Stabilization and Disposition	0	0	94,016
RL-0030 / Soil and Water Remediation-Groundwater/Vadose Zone - 2035	0	0	129,629
RL-0013C / Solid Waste Stabilization and Disposition-2035	0	0	135,026
Subtotal, Central Plateau Remediation	0	0	423,640
River Corridor and Other Cleanup Operations			
RL-0100 / Richland Community and Regulatory Support	0	0	19,620
RL-0040 / Nuclear Facility D&D-Remainder of Hanford - 2035	0	0	139,641
RL-0041 / Nuclear Facility D&D-River Corridor Closure Project	0	0	386,028
Subtotal, River Corridor and Other Cleanup Operations	0	0	545,289
Total, Hanford Site	966,976	990,080	968,929
Non-Defense Environmental Cleanup			
Fast Flux Test Reactor Facility D&D			
RL-0042 / Nuclear Facility D&D-Fast Flux Test Facility Project	10,755	7,652	3,659
Total, Richland	977,731	997,732	972,588

The funding table below provides a comparable display of the PBSs between control points.

	(dollars in thousands)		
	FY 2009	FY 2010	FY 2011
Defense Environmental Cleanup			
Hanford Site			
Central Plateau Remediation			
RL-0011 / NM Stabilization and Disposition-PFP	113,483	86,700	64,969
RL-0012 / SNF Stabilization and Disposition	124,671	126,712	94,016
RL-0030 / Soil and Water Remediation-Groundwater/Vadose Zone - 2035	175,238	205,390	129,629
RL-0013C / Solid Waste Stabilization and Disposition - 2035	192,345	131,070	135,026
Subtotal, Central Plateau Remediation	605,737	549,872	423,640
River Corridor and Other Cleanup Operations			
RL-0100 / Richland Community and Regulatory Support	19,620	21,940	19,620
RL-0040 / Nuclear Facility D&D-Remainder of Hanford - 2035	103,282	90,313	139,641
RL-0041 / Nuclear Facility D&D-River Corridor Closure Project	238,337	327,955	386,028
Subtotal, River Corridor and Other Cleanup Operations	361,239	440,208	545,289
Total, Hanford Site	966,976	990,080	968,929
Non-Defense Environmental Cleanup			
Fast Flux Test Reactor Facility D&D			
RL-0042 / Nuclear Facility D&D-Fast Flux Test Facility Project	10,755	7,652	3,659
Total, Richland	977,731	997,732	972,588

Performance Measure Summary

	Complete through FY 2009	Complete through FY 2010	Complete through FY 2011	Life-Cycle	FY 2011 % Complete
Richland					
Geographic Sites Eliminated (number of sites)	0	0	0	1	0%
Depleted and Other Uranium packaged for disposition (Metric Tons)	3,100	3,100	3,100	3,100	100.0%
Enriched Uranium packaged for disposition (Number of Containers)	2,958	2,958	2,958	2,958	100.0%
Industrial Facility Completions (Number of Facilities)	376	388	431	1,069	40.3%
Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	48,572	48,572	48,572	51,450	94.4%
Material Access Areas eliminated (Number of Material Access Areas)	16	20	20	20	100.0%
Nuclear Facility Completions (Number of Facilities)	28	32	34	82	41.5%
Plutonium Metal or Oxide packaged for long-term storage (Number of Containers)	2,275	2,275	2,275	2,275	100.0%

Performance Measure Summary

	Complete through FY 2009	Complete through FY 2010	Complete through FY 2011	Life-Cycle	FY 2011 % Complete
Plutonium or Uranium Residues packaged for disposition (Kilograms of Bulk)	3,437	3,437	3,437	3,437	100.0%
Radioactive Facility Completions (Number of Facilities)	52	55	72	346	20.8%
Remediation Complete (Number of Release Sites)	479	498	558	1,702	32.8%
Spent Nuclear Fuel packaged for final disposition (Metric Tons of Heavy Metal)	2,124	2,124	2,124	2,124	100.0%
Transuranic Waste shipped for disposal (Cubic meters) - CH	3,030	3,030	3,030	24,580	12.3%
Transuranic Waste shipped for disposal (Cubic meters) – RH	0	0	0	858	0%

Detailed Justification

In FY 2011, EM is proposing to transfer existing PBSs from the currently established control points of 2012 Accelerated Completions and 2035 Accelerated Completions to newly created control points of Central Plateau Remediation and River Corridor and Other Cleanup Operations. These new controls points are being proposed in order to better align EM activities with our overall cleanup strategy at the site.

The Detailed Justification Table below has been comparably adjusted to reflect the PBSs within the new control points in order to aid in the review process.

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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RL-0011 / NM Stabilization and Disposition-PFP	113,483	86,700	64,969
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This PBS can be found within the Defense Environmental Cleanup appropriation.

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. The bulk of the plutonium bearing materials at the Plutonium Finishing Plant were stored in vaults. This PBS implements actions to package and ship special nuclear materials and fuels to long-term storage facilities; cleanout facilities and demolish them to slab-on-grade; and transition the below grade structures to PBS RL-0040, Nuclear Facility Decontamination and Decommissioning - Remainder of Hanford. 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) interim storage of special nuclear materials; 3) maintaining the facilities in a safe and secure manner until the completion of demolition; and 4) cleanout and demolition of facilities.

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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As of September 2009, the Plutonium Finishing Plant Closure Project has completed stabilization and packaging of plutonium-bearing material into DOE-STD-3013 containers for shipment to an offsite storage location; completed repackaging and transfer of over 3,400 kilograms of bulk plutonium residue out of the Plutonium Finishing Plant protected area for shipment to the Savannah River site (authorization to ship was received on September 5, 2007); completed 100 percent of 'legacy' plutonium holdup (residual in hot cells) which is required for decommissioning and decontamination to proceed; and demolished 21 facilities.

The end-state for this PBS is dismantlement of the nuclear facilities in the Plutonium Finishing Plant complex to slab-on-grade.

In FY 2011, the following activities are planned:

- Support safe and essential services for over forty radiological and nuclear Plutonium Finishing Plant facilities and systems, and surveillance of residual radioactive and chemical contamination to ensure safe and compliant conditions.
- Provide for program management and support activities necessary for safe operations and essential services.
- Provide for site-wide services for day-to-day operations of general utilities, fire department, and analytical services.
- A portion of the scope of work typically covered in this PBS is being executed with American Recovery and Reinvestment Act funding.

Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
Plutonium Metal or Oxide packaged for long-term storage (Number of Containers)	2,275	2,275	2,275	2,275	100.0%
Plutonium or Uranium Residues packaged for disposition (Kilograms of Bulk)	3,437	3,437	3,437	3,437	100.0%
Material Access Areas eliminated (Number of Material Access Areas)	16	20	20	20	50.0%
Nuclear Facility Completions (Number of Facilities)	21	21	23	31	68.0%
Radioactive Facility Completions (Number of Facilities)	0	0	1	26	0%
Key Accomplishments (FY 2009)/Planned Milestones (FY 2010/FY 2011)					
<ul style="list-style-type: none">▪ Initiated decontamination & decommissioning and removal of the Remote Mechanical A line and Building 234-5Z Balance of Plant (December 2008)▪ Continue shipment of plutonium off-site (September 2009)					

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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- Complete de-inventory 3013 containers. (September 2009)
- Completed de-inventory of the slightly irradiated fuel (December 2009)
- Complete Protected Area Closure activities (January 2010)
- Complete transition (cold & dark) of 2736-Z/ZB complex (December 2010)
- Complete Pencil Tank removal from PRF (September 2011)

RL-0012 / SNF Stabilization and Disposition

124,671

126,712

94,016

This PBS can be found within the Defense Environmental Cleanup appropriation.

This project supports Richland’s mission for accelerated clean up of the River Corridor through stabilization, removal, and off-shipment of nuclear materials including spent nuclear fuel, radioactively contaminated sludge, water and debris from the K Basins. This PBS also supports basin removal and transition of the 100 K Area facilities and remaining waste sites to the River Corridor Contractor. The scope of this project encompasses the removal, packaging, and transportation of approximately 2,100 metric tons of degrading spent nuclear fuel from wet storage in the K Basins (K-East and K-West) near the Columbia River to a safe, dry interim storage on the 200 Area Central Plateau. Additionally, an estimated 29 cubic meters of radioactively contaminated sludge that currently resides in the basins will be removed from the basins and treated as remote-handled transuranic waste into its final disposal form, ready for permanent disposal off the Hanford site.

As of September 2009, all spent nuclear fuel and sludge has been removed from the K-East Basin; completed K-East Basin deactivation, decommissioning, decontamination and demolition; and completed containerization of K-West residual sludge from the final pass vacuuming.

The end-state of this PBS is the removal of all spent nuclear fuel from the K Basins, subsequent repackaging, drying and transportation to the Canister Storage Building for interim storage, removal of radioactively contaminated sludge from the K Basins, and removal and shipment of radioactively contaminated K Basin water to the 200 Area for treatment and disposal. All 100 Area K-East and K-West facilities will be transitioned to the River Corridor Contractor for final disposition. This end state represents significant risk reduction the basins posed to the Columbia River. With completion of the removal of 2,100 metric tons of spent nuclear fuel, more than 55 million curies of radioactivity (more than 95 percent of the radioactivity in Hanford’s River Corridor) has been moved away from the Columbia River. Additional risk reduction has also been accomplished through the removal of significant debris from the basins. Further risk reductions are anticipated through removal of contaminated basin water, the basins themselves, and treatment of various sludge streams remaining in the K-West Basin.

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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In FY 2011, the following activities are planned:

- Provide for site-wide services of day-to-day operations of general utilities, fire department, and analytical services.
- Operate and maintain K-West Basin and associated structures in a safe and compliant manner. Also, support required surveillance and maintenance activities.
- Procure Multiple Canister Overpacks, Sludge Treatment Storage Containers, and Knock-Out Pot Disposition.
- Continue sludge activities including analysis of engineered container and settler tube sludge samples, perform facility and system modification to process Knock-Out Pot material as spent nuclear fuel, initiate processing of Knock-Out Pot as fuel, and test the system required to transfer KW Basin sludge to the Central Plateau.

Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
Spent Nuclear Fuel packaged for final disposition (Metric Tons of Heavy Metal)	2,117	2,117	2,117	2,117	100.0%
Key Accomplishments (FY 2009)/Planned Milestones (FY 2010/FY 2011)					
<ul style="list-style-type: none"> ▪ Completed decontamination & decommissioning of K East Basin (September 2009) ▪ Continue K West Basin safe and compliant and fuel processing capabilities (September 2010) ▪ Completion of laboratory analysis on engineered containers and settler tube sludge (September 2011) 					

RL-0013C / Solid Waste Stabilization and Disposition-2035

192,345 131,070 135,026

This PBS can be found within the Defense Environmental Cleanup appropriation.

Scope of this PBS includes storage of spent nuclear fuel, transuranic waste, mixed low-level waste, and low-level waste generated at the Hanford Site and other DOE and Department of Defense facilities. The transfer of spent nuclear fuel elements to the Canister Storage Building is complete for this PBS.

This PBS includes packaging of EM legacy and non-legacy spent nuclear fuel and storage in the Canister Storage Building or 200 Area Interim Storage Area. This PBS also includes wet storage of 1,936 cesium and strontium capsules in the Waste Encapsulation and Storage Facility, which will be transferred to dry storage. Retrieval of contact- and remote-handled suspect transuranic waste in the

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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low-level burial grounds will also be performed. About 27,000 cubic meters of transuranic waste is to be processed and shipped to the Waste Isolation Pilot Plant including: transuranic waste generated during retrieval operations, transuranic waste currently in storage, 618-10/11 waste site remediation waste, and facility decontamination and decommissioning waste. Additional sources of transuranic waste which could change the forecast waste volumes include pre-1970 burial ground remediation waste, canyon demolition waste, and transuranic tank waste. Processing of transuranic waste for shipment to the Waste Isolation Pilot Plant will occur in the Waste Receiving and Processing facility or the T Plant facility. About 70,000 cubic meters of mixed low-level waste will be treated to meet regulatory requirements and disposed in the mixed waste trenches or other facilities such as the Environmental Restoration Disposal Facility. This mixed low-level waste is either currently in storage or will be generated during retrieval operations, facility demolition, or from other on-site/off-site sources. Over 200 de-fueled naval reactor compartments will be disposed of in a dedicated trench. About 130,000 cubic meters of low-level waste will be disposed through site closure. This low-level waste is to be generated during facility demolition, or from other on-site and off-site sources, or is currently stored onsite. The 200 Area Effluent Treatment Facility, Liquid Effluent Retention Facility, and 300 Area Treated Effluent Disposal Facility provide treatment of cleanup generated liquid waste. Technical support is provided to all waste generators for all waste types. Other site-wide storage and disposal facilities will be transferred to this PBS in order to consolidate similar activities.

As of September 2009, 10,220 cubic meters of suspect transuranic waste have been retrieved; certified over 3,473 cubic meters of transuranic waste to be shipped to the Waste Isolation Pilot Plant; treated over 8,836 cubic meters of mixed low-level waste since January 2003; and completed the Tri-Party Agreement milestone for thermal treatment of 600 cubic meters of mixed low-level waste.

The end-state for this project will be that all retrievably stored, suspect transuranic waste is retrieved and transferred to a treatment, storage, and/or disposal facility; all spent nuclear fuel, cesium and strontium capsules are sent to an off-site disposal facility; all site waste disposal operations are complete; and, facilities are transitioned for decontamination and decommissioning.

In FY 2011, the following activities are planned:

- Provide site-wide services for day-to-day operations of general utilities, fire department, and analytical services.
- Provide base operations to support safe and compliant storage of Spent Nuclear Fuel.
- Operate and maintain the Canister Storage Building and 200 Area Interim Storage Area facilities and associated structures, operating systems and equipment, and monitoring systems.
- Provide base operations of the Integrated Disposal Facility.
- Provide base operations of disposal trenches for Hanford's mixed low-level waste.

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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- Provide core management and base operations to store, treat and disposition low-level waste, mixed low-level waste, and transuranic waste at the Central Waste Complex and manage off-site commercial mixed low-level waste treatment/disposal contracts.
- Support the operation and necessary upgrades at the 200 Area Liquid Effluent Treatment Facility and Liquid Effluent Retention Facility.
- Provide the base operations necessary to store and treat mixed low-level waste and transuranic waste at the T Plant Complex. Also, provide upgrades necessary to maintain the facility and support for K Basin Project.
- Provide base operations for storage of cesium and strontium capsules at the Waste Encapsulation and Storage Facility.
- Provide the base operations of the Waste Receiving and Processing Facility necessary to support repackaging.
- A portion of the scope of work typically covered in this PBS is being executed with American Recovery and Reinvestment Act funding.

Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
Transuranic Waste shipped for disposal (Cubic meters) – CH	3,030	3,673	5,498	24,580	22.0%
Transuranic Waste shipped for disposal (Cubic meters) – RH	0	0	0	858	0%
Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	48,572	48,572	48,572	51,450	94.0%

Key Accomplishments (FY 2009)/Planned Milestones (FY 2010/FY 2011)

- Treated 7,220 cubic meters (cumulative) of mixed low-level waste. (December 2008)
- Continued to operate 200 Area Liquid Effluent Facility (December 2009)
- Continue base operations and minimal upgrades to treat MLLW and transuranic waste (September 2010)
- Maintain base operations of the low-level waste and mixed low-level waste disposal facilities (Low-Level Waste Burial Ground , 218-W-5, trench 31 & 34) (September 2010)
- C-26-07F, Submit Tritium Technology Developments to Ecology and Environmental Protection Agency (March 2011)
- Provide Safe and Compliant Solid Waste Operations Facilities. (September 2011)
- Provide ready-to-serve facilities in support of site activities and American Recovery and Reinvestment Act workscope. (September 2011)

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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**RL-0030 / Soil and Water Remediation-
Groundwater/Vadose Zone - 2035**

175,238 205,390 129,629

This PBS can be found within the Defense Environmental Cleanup appropriation.

This PBS scope includes groundwater/vadose zone remediation activities that address groundwater contamination (e.g., carbon tetrachloride, chromium, technetium 99, strontium, and uranium plumes) and protection of the groundwater resources on the Hanford Site. Final substantive groundwater remedial actions are to be completed by 2024. Long-term monitoring, natural attenuation, and other regulatory review completion activities will continue through the 2042 time frame. The principal activities for this PBS include: 1) field characterization for movement of radionuclides and chemicals in the vadose zone and groundwater including treatability testing for deep vadose zone contamination; 2) assessing the soil and groundwater characterization results to determine the type and extent of contamination and evaluate various remedial alternatives to support completion of final remedial action decision-making for both the soil and groundwater; 3) vadose zone, groundwater and risk assessment modeling for selection of remedial alternatives and evaluating cumulative impacts to the Hanford groundwater and Columbia River; 4) operation of groundwater remediation systems and implementation of alternative methods to complete actions; 5) installation of wells to maintain Comprehensive Environmental Response, Compensation, and Liability Act of 1980 and Resource Conservation and Recovery Act integrated, compliant, network to address emerging groundwater plumes, remediation requirements to conduct site-wide groundwater monitoring; 6) groundwater well drilling, maintenance, decommissioning; and 7) complete final restoration of groundwater on the Hanford Site.

Final Comprehensive Environmental Response, Compensation, and Liability Act feasibility studies and proposed plans for all soil and groundwater operable units at the Hanford Site will be completed by December 31, 2011. Groundwater completion activities will follow waste site closure activities through the 2024 time frame. By 2024, all existing unused wells will be physically decommissioned.

As of September 2009, achieved remedial action objective concentrations in all but one well for the H portion of the 100-HR3 groundwater operable unit cleanup site; reconfigured the pump-and-treat system to extract water to address the remaining contamination; decommissioned 90 high-risk wells to eliminate pathways to the groundwater; completed key field investigations for the carbon tetrachloride Dense Non-Aqueous Phase Liquid investigation in the 200 West Area; continued to operate four pump-and-treat systems for groundwater remediation; suspended the pump-and-treat system at 100-NR-2 and implemented an alternative passive barrier demonstration; successfully completed a year-long rebound study for UP-1 groundwater cleanup in 200 West Area; completed an alternative chromium remediation treatability test for the 100-KR-4 groundwater plume; and completed construction of another pump-and-treat system in 100-KR-4.

In FY 2011, the following activities are planned:

- Provide site-wide services for day-to-day operations of general utilities, fire department, and analytical services.

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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- Perform remedial investigation and feasibility study to obtain final Records of Decision for the 100 Area River Corridor.
- Provide required groundwater monitoring program at Hanford for active remediation sites and Resource Conservation and Recovery Act Treat, Storage, and Disposal sites and maintain compliance with the current laws and regulations for groundwater monitoring.
- Integrate groundwater and vadose zone field support activities including operations and maintenance, safety personnel, worker training, and field equipment purchases for Hanford site cleanup activities.
- Provide management, training, and effective application of necessary project management tools, skills, and abilities that are required to operate the groundwater and vadose zone project.
- Support safety activities for the 100 Area River Corridor groundwater operable units (100-HR-3, 100-KR-4, 100-NR-2, 100-FR-3, 100-BC-5) including well maintenance, remediation operations, and project management.
- Conduct scientific applied research and technology development activities.
- A portion of the scope of work typically covered in this PBS is being executed with American Recovery and Reinvestment Act funding.

Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
No metrics associated with this PBS					
Key Accomplishments (FY 2009)/Planned Milestones (FY 2010/FY 2011)					
<ul style="list-style-type: none"> ▪ Initiated design for final remedial actions for the ZP-1 groundwater operable unit in 200 West (October 2008) ▪ Initiated design for the final remedial action for 100-HR-3 at 100-D Area. (December 2008) ▪ Submitted 241-CX Series Storage Tanks Closure/Post Closure Plan to Ecology (December 2008) 					

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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- Submitted a draft Comprehensive Environmental Response, Compensation, and Liability Act proposed plan (December 2009)
- Initiate physical testing of soil desiccation and reactive gas soil cleanup technologies (September 2010)
- Continue to construct groundwater wells to support existing pump-and-treat operations (September 2010)
- Initiate installation of 100-HR-3 Pump & Treat Environmental Remediation System at 100-D Area (September 2010)
- Perform remedial investigation and feasibility study in support of 100-NR-2 Operable Unit (September 2010)
- M-024-62-T01, Conclude discussions of well commitments initiated under M-024-58 (August 2011)
- Support necessary groundwater operations and maintenance (September 2011)
- Support completion of the necessary characterization and supporting decision documentation (September 2011)

RL-0040 / Nuclear Facility Decontamination and Decommissioning Remainder of Hanford - 2035

103,282

90,313

139,641

This PBS can be found within the Defense Environmental Cleanup appropriation.

This PBS scope includes implementation of various Hanford Site cleanup initiatives: cleanup of radioactivity and chemical contamination in about 800 waste sites with potential impact to groundwater and approximately 900 facilities primarily on the Central Plateau; continuing litigation support; and infrastructure operations. Life-cycle work scope includes: decontamination, decommissioning, dismantlement, and disposition of surplus facilities (including canyon facilities); remediation of all 200 Area waste sites containing large inventories of mobile contaminants that may migrate into groundwater plumes (includes removal of contaminants or construction of surface barrier caps over waste sites); deactivation and disposition of contaminated equipment; final disposition of Cold War legacy wastes; site occupational medicine program; safe operation of facilities awaiting deactivation and demolition; and maintenance and repair of system infrastructure.

As of September 2009, activities completed include: remediation of 39 out of 857 waste sites and burial grounds; disposition of 250 excess facilities; and procurement of capital equipment replacements. Other activities include regulatory document development, surveillance and maintenance, infrastructure operations, and litigation support.

In FY 2011, the following activities are planned:

- Provide surveillance and maintenance activities to ensure safety for inactive waste sites and facilities on Hanford's Central Plateau.

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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- Construction/Installation of barriers at Non-Radioactive Dangerous Waste Landfill and 600 Area Central Landfill.
- Provide for day-to-day operations of general utilities, fire department, and analytical services.
- Provide environmental Safety and Health oversight, quality management, safety, and job hazards analysis, technical support, and integration with site activities.
- Provide site infrastructure upgrades, replacements and repairs such as cranes, general plant facility HVAC replacements, fire truck and mobile response unit replacement, Hanford Local Area Network upgrades, roadway repair and sealing, and water line replacement/refurbishment.
- Provide steam for critical site heating systems.
- Provide training to ensure the safety and health of both Hanford and non-Hanford workers.
- A portion of the scope of work typically covered in this PBS is being executed with American Recovery and Reinvestment Act funding.

Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
Nuclear Facility Completions (Number of Facilities)	4	4	4	39	10.0%
Radioactive Facility Completions (Number of Facilities)	12	12	12	180	7.0%
Industrial Facility Completions (Number of Facilities)	232	232	232	649	34.0%
Remediation Complete (Number of Release Sites)	39	39	39	857	5.0%
Key Accomplishments (FY 2009)/Planned Milestones (FY 2010/FY 2011)					
<ul style="list-style-type: none"> ▪ Maintain safety and services for the Central Plateau (September 2010/September 2011) ▪ Maintain safe surveillance and maintenance for the Central Plateau (September 2010) ▪ Maintain safe surveillance and maintenance for Central Plateau (September 2011) ▪ Complete installation of a barrier at the Non-Radioactive Dangerous Waste Landfill (September 2011) ▪ Complete installation of a barrier at the 600 Area Central Landfill (September 2011) 					

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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RL-0041 / Nuclear Facility D&D-River Corridor Closure Project

238,337 327,955 386,028

This PBS can be found within the Defense Environmental Cleanup appropriation.

The River Corridor Closure Project will complete the remediation of 761 contaminated waste sites (including liquid waste sites, solid waste sites, and burial grounds); complete the deactivation, decontamination, decommissioning, and demolition of 379 excess facilities/structures that are adjacent to the Columbia River; and complete the placement of eight reactors into an interim safe storage condition. The work scope includes the excavation of contaminated soil; the construction of interim safe storage (cocooning) of the reactors; deactivation, decontamination, decommissioning, and demolition of facilities/structures in the old reactor complexes and the facilities/structures in the 300 Area and 400 Area; operation of the Environmental Restoration Disposal Facility (or the Central Waste Complex in the case of Transuranic waste) for the disposal of the wastes generated by the project; construction of additional Environmental Restoration Disposal Facility disposal cells and surface barriers/caps over contaminated sites; activities supporting end state and final closure; surveillance and maintenance; utility operations; and closure and program management and support. Operation of the Environmental Restoration Disposal Facility is funded under this PBS because the River Corridor Closure Project is currently the primary user of the disposal facility.

As of September 2009, activities completed include: remediation of 451 of the 828 life-cycle waste sites and burial grounds; deactivating, decontaminating, decommissioning, and demolishing 196 of the 625 excess facilities; placing into an interim safe storage (“cocooning”) 5 of 8 reactors; removing 2.3 metric tons of spent nuclear fuel from the 300 Area, which is in close proximity to the Columbia River and the local community; packaging and disposing of 2,958 containers of enriched uranium; packaging 3,100 containers of depleted and other uranium; and dispositioning 8.6 million tons of remediation waste into the Environmental Restoration Disposal Facility or Central Waste Complex (transuranic waste).

At project completion, DOE will seek approval to remove the project sites remediated according to interim Records of Decision from the National Priority List. There will be limited DOE activities remaining in the River Corridor after completion. At that time, the footprint of active Hanford Site cleanup will be significantly reduced from the present 586 square miles to about 75 square miles.

In FY 2011, the following activities are planned:

- Provide surveillance and maintenance of nuclear and support facilities and continue operations of key utilities (water, sewer electrical).
- Provide site-wide services for day-to-day operations of general utilities, fire department, and analytical services.
- Complete excavation of 3 of 5 100-H burial grounds.

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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- Complete 22 interim remedial actions at the 100 B/C Area.
- Complete disposition of 8 facilities.
- Continue field remediation, deactivating, decontaminating, decommissioning, and demolishing of facilities, and interim safe storage in other areas along the Columbia River Corridor including maintaining critical functions in engineering, Safety, Health and Quality support, environmental compliance, and project controls.
- Continue disposing of thousands of tons of waste in the Environmental Restoration Disposal Facility.
- Initiate interim safe storage of the 105-KE Reactor, and D4 100K Area facilities.
- A portion of the scope of work typically covered in this PBS is being executed with American Recovery and Reinvestment Act funding.

Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
Enriched Uranium packaged for disposition (Number of Containers)	2,958	2,958	2,958	2,958	100.0%
Depleted and Other Uranium packaged for disposition (Metric Tons)	3,100	3,100	3,100	3,100	100.0%
Nuclear Facility Completions (Number of Facilities)	3	7	7	8	88.0%
Radioactive Facility Completions (Number of Facilities)	40	43	59	131	46.0%
Industrial Facility Completions (Number of Facilities)	144	156	199	389	46.0%
Remediation Complete (Number of Release Sites)	440	459	519	845	63.0%
Key Accomplishments (FY 2009)/Planned Milestones (FY 2010/FY 2011)					
<ul style="list-style-type: none"> ▪ Completed removal for 6 high-priority facilities (March 2009) ▪ Completed Waste Site 300-48 and Burial Ground 100-D-41 Load out (March 2009) ▪ Completed Burial Ground 118-H-1 Load Out (September 2009) ▪ Complete Interim Remedial Actions for 6 Specific Wastes Sites in the 300-FF-2 Operable Unit (September 2010) ▪ Continue field remediation in the 100 K-Area (September 2010) ▪ Complete disposition of 13 surplus facilities in the 300 and 100 Areas (September 2010) 					

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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- Complete Interim Remediation Actions At 100-B/C Area (November 2010)
- Continuation of facility disposition; field remediation; deactivation, decontamination, decommissioning and demolition; Interim Safe Storage; and Environmental Restoration Disposal Facility operations (September 2011)
- Complete excavation of a total of 3 of 5 100-H burial grounds (September 2011)

RL-0100 / Richland Community and Regulatory Support

19,620 21,940 19,620

This PBS can be found within the Defense Environmental Cleanup appropriation.

The scope of this PBS includes regulatory and stakeholder support and assistance payments to offset lost property taxes (i.e., payments in lieu of taxes). The activities included in this PBS are: 1) regulatory costs as required by Resource Conservation and Recovery Act, the Comprehensive Environmental Response, Compensation, and Liability Act, Tri-Party Agreement, Clean Air Act, and other State and local laws and regulations. These include payment to the Washington State Department of Ecology as required by the Tri-Party Agreement, reimbursement to Washington State Department of Health for costs associated with fulfilling their Clean Air Act responsibilities as well as other miscellaneous air monitoring support activities, payment of waste discharge permit fees to Washington State Department of Ecology and other miscellaneous permits and fees; 2) grants to Washington State and Oregon State for their participation in Hanford related activities including environmental oversight and emergency preparedness activities; 3) payments in lieu of taxes made to the three host counties where the Hanford reservation is located; 4) funding to support the Hanford Advisory Board and related activities; and 5) Hanford Natural Resources Trustee activities. This PBS scope will end upon completion of the Hanford EM mission in 2048.

In FY 2011, the following activities are planned:

- Provide funding for Washington State Department of Ecology Resource Conservation and Recovery Act Mixed Waste Fee, Washington State Department of Health's air emissions monitoring invoice, and the Payment in Lieu of Taxes for Grant, Benton, and Franklin Counties.
- Provide funding for off-site agency emergency preparedness programs enabling them to respond to an emergency on the Hanford site, State of Oregon's input on Hanford activities and relative priorities for risk-based cleanup, and independent monitoring during events from the Washington State Department of Health.
- Support activities required by the Comprehensive Environmental Response, Compensation, and Liability Act regulations and DOE Natural Resource Damage Assessment policy.

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
No metrics associated with this PBS					
Key Accomplishments (FY 2009)/Planned Milestones (FY 2010/FY 2011)					
<ul style="list-style-type: none"> ▪ Support activities required by the Resource Conservation and Recovery Act, Comprehensive Environmental Response, Compensation and Liability Act, Tri-Party Agreement, Clean Air Act, and other State and local laws and regulations (September 2009) ▪ Support Washington and Oregon States emergency preparedness, environmental oversight and other activities related to Hanford cleanup (September 2009) ▪ Reimbursed the Department of Ecology and the Department of Health for regulatory oversight in accordance with the Tri-Party Agreement and state law (September 2009) ▪ Supported the Hanford Advisory Board for public involvement related to the cleanup mission (September 2009) ▪ Continue to provide support to the Natural Resource Trustee Council and the Hanford Advisory Board (September 2010) ▪ Continue to support various programs such as Resource Conservation & Recovery Act, Washington State Department of Health (September 2010) ▪ Support Washington and Oregon States emergency preparedness (September 2011) 					

RL-0042 / Nuclear Facility D&D-Fast Flux Test Facility Project

10,755 7,652 3,659

This PBS can be found within the Non-Defense Environmental Cleanup appropriation.

This PBS scope includes deactivation and decommissioning the Fast Flux Test Facility, a 400-megawatt (thermal) liquid metal (sodium) cooled fast neutron flux nuclear test reactor, and 44 support buildings and structures. The deactivation activities consist of: reactor de-fueling; disposition of 376 reactor fuel assemblies by washing, drying, loading in storage casks and transferring to appropriate storage locations; draining approximately 260,000 gallons of sodium from operating plant systems, reactor vessel, and fuel storage vessels; sodium residual cleaning of all plant systems and vessels; disposition of the 260,000 gallons of bulk sodium by conversion to sodium hydroxide for use by the Waste Treatment Plant; and the shutdown of Fast Flux Test Facility auxiliary systems.

The current approach for the Fast Flux Test Facility Project is to complete sodium drain from the Fast Flux Test Facility to the Sodium Storage Facility, offload and store the reactor nuclear fuel and place the facilities in long-term surveillance and maintenance. The disposition of bulk and residual sodium and facility decommissioning and demolition will be deferred due to higher Hanford site priorities.

As of September 2009, all of the bulk sodium has been drained from the reactor plant and the fuel

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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storage vessels. Sodium-potassium was flushed from the in-containment cooling loops and sodium-potassium was drained from the Fuel Storage Facility cooling loop. The bulk sodium drained and transferred to the Sodium Storage Facility constitutes ~260,000 gallons (100 percent) of the bulk sodium inventory. Sodium residuals remain throughout all the sodium systems. Of the original 376 fuel assemblies, 368 fuel assemblies have been washed, dried, and loaded into above ground Interim Storage Casks. Interim Storage Casks loaded with fuel assemblies were shipped to either the Plutonium Finishing Plant or the 200 Area Interim Storage Area. The remaining fuel assemblies were sodium-bonded and were transferred to the Idaho National Laboratory. The Fast Flux Test Facility and support facilities have been transitioned to long-term safe and compliant surveillance and maintenance.

The facility end-state for the Fast Flux Test Facility containment building, including the de-fueled reactor vessel, will be determined following the appropriate environmental analysis process. For planning purposes, it is assumed the reactor containment dome will be removed, the below-grade reactor containment building will be grouted and entombed, and the support facilities and structures will be demolished to three feet below grade and backfilled. The Fast Flux Test Facility end state alternatives are being evaluated in the Tank Closure/Waste Management Environmental Impact Statement.

In FY 2011 the following activities are planned:

- Maintain long-term safe and compliant surveillance and maintenance for Fast Flux Test Facility and support facilities.
- Provide site-wide services for day-to-day operations of general utilities, fire department, and analytical services.

Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
Plutonium Metal or Oxide packaged for long-term storage (Number of Containers)	0	0	0	0	100.0%
Spent Nuclear Fuel packaged for final disposition (Metric Tons of Heavy Metal)	7	7	7	7	100.0%
Nuclear Facility Completions (Number of Facilities)	0	0	0	4	0%
Radioactive Facility Completions (Number of Facilities)	0	0	0	9	0%
Industrial Facility Completions (Number of Facilities)	0	0	0	31	0%
Key Accomplishments (FY 2009)/Planned Milestones (FY 2010/FY 2011)					
<ul style="list-style-type: none"> ▪ Completed Fast Flux Test Facility operating systems deactivation to enable low cost surveillance and maintenance (August 2009) ▪ Transitioned Fast Flux Test Facility to long-term surveillance and maintenance (August 2009) 					

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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- Maintain minimum safe surveillance and maintenance for Fast Flux Test Facility (September 2010)
- Provide surveillance and maintenance to ensure minimum safety for the Fast Flux Test Facility and support facilities (September 2011)

Total, Richland	977,731	997,732	972,588
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Explanation of Funding Changes

In FY 2011, EM is proposing to transfer existing PBSs from the currently established control points of 2012 Accelerated Completions and 2035 Accelerated Completions to newly created control points of Central Plateau Remediation and River Corridor and Other Cleanup Operations. These new controls points are being proposed in order to better align EM activities with our overall cleanup strategy at the site.

The Explanation of Funding Changes Table below has been comparably adjusted to reflect the PBSs within the new control points in order to aid in the review process.

FY 2011 vs. FY 2010 (\$000)

Defense Environmental Cleanup Hanford Site

Central Plateau Remediation

RL-0011 / NM Stabilization and Disposition-PFP

- Decrease is due to the completion of shipment of special nuclear materials from the Plutonium Finishing Plant and the reduced maintenance need for safe and compliant Plutonium Finishing Plant. -21,731

RL-0012 / SNF Stabilization and Disposition

- Decrease is due to progress on the continuation of sludge treatment design with procurement of multiple canister overpacks (Knock-Out Pot disposition), sludge treatment storage containers, and a Phase I storage alternative. -32,696

RL-0013C / Solid Waste Stabilization and Disposition- 2035

- Increase is due to planned upgrades to support the waste management operations facilities. 3,956

FY 2011 vs. FY 2010 (\$000)

RL-0030 / Soil and Water Remediation-Groundwater/Vadose Zone - 2035

- Decrease is due to completion of the 200-BP-5 pump-and-treat system installation; reduced activities associated with the remedial investigation and feasibility studies to obtain final records of decision for groundwater operable units in the River Corridor and Central Plateau; deferment of construction of the phase two portion of the 200 West pump-and-treat system, and deferment of the 300-FF-5 Operable Unit characterization. -75,761

River Corridor and Other Cleanup Operations

RL-0040 / Nuclear Facility D&D-Remainder of Hanford - 2035

- Increase is due to barrier construction/installation at the Non-Radioactive Dangerous Waste Landfill and the 600 Area Central Landfill. Also supports infrastructure reliability projects that support upgrades, replacements and repairs of the utility infrastructure for the Hanford Site. 49,328

RL-0041 / Nuclear Facility D&D-River Corridor Closure Project

- Increase is due to additional activities for deactivation, decontamination, decommissioning, and demolition of facilities and structures in the 100 and 300 Areas and waste site and burial ground remediation in the 100 Areas. Includes acceleration of K East Reactor Interim Safe Storage and disposition activities. 58,073

RL-0100 / Richland Community and Regulatory Support

- Decrease is due to reduced costs for Comprehensive Environmental Response, Compensation, and Liability Act and Resource Conservation and Recovery Act oversight. -2,320

Non-Defense Environmental Cleanup

Fast Flux Test Reactor Facility D&D

RL-0042 / Nuclear Facility D&D-Fast Flux Test Facility Project

- The decrease is due to the transition to long-term surveillance and maintenance. -3,993

Total, Richland -25,144

River Protection

Funding by Site

(dollars in thousands)

	FY 2009 Current Appropriation	FY 2009 Current Recovery Act Appropriation	FY 2010 Current Appropriation	FY 2011 Request
River Protection	1,009,943	326,035	1,098,000	1,158,178
Total, River Protection	1,009,943	326,035	1,098,000	1,158,178

Site Overview

Hanford Site cleanup is managed by two Department of Energy offices, the DOE Richland Operations Office and the DOE Office of River Protection. Each office reports to the Office of Environmental Management.

In order to more effectively manage the River Protection Project and in response to Section 3139 of the Strom Thurmond National Defense Authorization Act for Fiscal Year 1999, the Secretary of Energy established the Office of River Protection at the Hanford Site in the State of Washington. The Office is responsible for the storage, retrieval, treatment, immobilization, and disposal of tank waste and the operation, maintenance, engineering, and construction activities in the 200 Area Tank Farms. These Tank Farms include 177 underground storage tanks (149 single-shell tanks and 28 double-shell tanks) that contain approximately 190 million curies in approximately 53 million gallons of chemically hazardous radioactive waste from past processing operations. A multi-year construction project to build a Waste Treatment and Immobilization Plant to process and immobilize the tank waste is ongoing. The processed high-radioactivity fraction of the waste is being prepared for on-site storage pending final disposal and lower-hazard waste forms will be disposed in approved buried waste facilities on the Hanford site.

American Recovery and Reinvestment Act Activities

The Office of River Protection American Recovery and Reinvestment Act activities are funded at \$326,035,000. Specifically, this funding will accelerate upgrades to tank farm infrastructure and waste feed delivery systems required to support the future transfer of tank waste, to the Waste Treatment and Immobilization Plant, which is scheduled to begin hot operations in FY 2019. The American Recovery and Reinvestment Act will also accelerate completion of existing environmental protection and site cleanup goals of immobilizing high-level waste at the Hanford Site, thereby mitigating environmental threats to the Columbia River.

Activities utilizing the American Recovery and Reinvestment Act funds include:

- Perform upgrades to the 222-S Analytical Laboratory and the 242-A Evaporator to ensure waste volume reduction operations and retrieval operations from aging single-shell tanks continue.

- Perform upgrades (e.g. ventilation, electrical, level rise modifications, etc.) within the tank farms to support future Tank Operations activities and waste feed delivery to the Waste Treatment and Immobilization Plant.
- Design and procurement of a new Core Sampling System to replace existing unreliable core/grab sampling systems.
- Complete pilot-scale testing of a transportable Wiped Film Evaporator system.
- Upgrade and automate the control system used for the cross-site transfer systems.
- Upgrade the SY Tank Farm transfer lines which are necessary to safely transfer waste during retrieval, blending, and delivery operations.
- Remove, package and dispose of obsolete/abandoned ventilation equipment in AW and AN Tank Farm.

The American Recovery and Reinvestment Act work scope will provide for integrated system planning for the DOE Office of River Protection mission and perform project planning, system upgrades/replacements, and operations to accomplish waste feed delivery to treatment facilities by 2019.

Site Description

The Hanford Site is the largest of the three original defense production sites founded in World War II as part of the Manhattan Project. The Hanford reservation is about half the size of the State of Rhode Island, at 586 square miles. Over its 40 years of operations, the site produced approximately 74 tons of plutonium—nearly two-thirds of all the plutonium recovered for government purposes in the United States. Between 1943 and 1963, nine plutonium production reactors were built along the Columbia River. Plutonium and reusable uranium were separated from irradiated fuel using various chemical precipitation and solvent extraction techniques. The plutonium and uranium were shipped to other DOE sites for eventual use in United States nuclear weapons.

During plutonium production, highly radioactive waste resulting from site operations was piped to underground tanks. In some cases small amounts of radioactive waste, representing small amounts of radioactivity, were discharged underground. For example, uncontaminated and slightly contaminated liquids and cooling water were pumped to ditches and ponds. Contaminated water discharged from the reactors was pumped to nearby soil as well as into the Columbia River. Solid waste was buried in shallow trenches or stored inside facilities. The result is more than 1,600 identified waste sites and more than 500 waste facilities at Hanford. Forty percent of the approximately one billion curies of radioactivity within the DOE nuclear weapons complex resides at Hanford. These materials must be dealt with in a safe and protective manner.

The DOE Office of River Protection is responsible for cleanup of the approximately 53 million gallons of waste in 177 underground storage tanks, as well as, contaminated equipment and soils in the 18 tank farms where these tanks are located on the Central Plateau of the Hanford site. Up to sixty-seven of the 177 tanks are assumed or suspected to have leaked waste in the environment.

Site Cleanup Strategy/Scope of Cleanup

Office of River Protection's cleanup strategy is a risk-based approach that focuses on contamination sources that are the greatest contributors to risk. Significant cleanup progress has already occurred. For example:

- Interim stabilization (in which transfer of pumpable liquids from Hanford's 149 single-shell tanks to safer double-shell tanks) has been completed, to reduce the risk of future tank leaks to the environment.
- Retrieval of remaining solids and sludges from seven single-shell tanks and four additional tanks to the limits of the first retrieval technology capability has been completed. The retrieval process on two single-shell tanks has been initiated, and design initiated on another.
- The Waste Treatment and Immobilization Plant is being designed and constructed to vitrify the bulk of the radioactive tank waste. It is the largest radioactive-chemical processing facility in the world: approximately 77 percent complete with design, approximately 48 percent complete with construction, and approximately 52 percent complete overall.
- Demonstration Bulk Vitrification System Full Scale Dryer Test and Integrated Dryer/Melter Test has been completed and design finalized. Bulk vitrification is a possible supplemental technology to increase the ability to treat Hanford's low-activity tank waste to supplement the Waste Treatment and Immobilization Plant capability.
- Retrieval of sludge/saltcake waste from the remainder of single-shell tanks continues.
- Construction of the Hanford integrated disposal facility, which will be used for the disposal of mixed low-activity wastes and low-level wastes, has been completed.
- Installation of the T Farm Interim Surface Barrier has been completed.
- The Interim Pretreatment System Project definition work related to technology testing and down selection, siting, feed selection and secondary waste management has been completed.
- The Draft Tank Closure and Waste Management Environmental Impact Statement has been completed and has been released for public comment.

Site Completion (End State)

The River Protection Project end state is to clean up the tank waste and tank farms in a compliant manner; immobilize and facilitate safe disposal of associated radioactive and chemical wastes; and protect human health, the environment, and Columbia River resources. The lifecycle planning estimate end date is 2042 to 2050. The following will have been accomplished at the completion of the Office of River Protection mission:

- High-level waste will be vitrified and ready for off-site disposal. Prior to shipment, all high-level waste forms will be stored in interim on-site storage facilities;

- Low-activity wastes will be stabilized and disposed of on-site;
- Appropriate remediation measures will be implemented for contaminated soils;
- Tanks and related equipment will be stabilized in place;
- Waste treatment systems will be decommissioned;
- Measures will be implemented to ensure the durability of protective conditions established throughout cleanup (e.g., durable surface barriers, long-term monitoring, markers, records, etc.).

Regulatory Framework

The principal regulatory drivers at the Hanford Site are the Resource Conservation and Recovery Act; Comprehensive Environmental Response, Compensation, and Liability Act; and the Atomic Energy Act. In May 1989, DOE, the U.S. Environmental Protection Agency, and the Washington State Department of Ecology signed the Hanford Federal Facility Agreement and Consent Order, commonly known as the Tri-Party Agreement. The Tri-Party Agreement defines legally enforceable milestones for Hanford cleanup.

The Tri-Party Agreement milestones listed below are subject to ongoing litigation in *State of Washington v. Chu*, Case No. CV-08-5085-FVS (Eastern District, Washington) based on the allegation that DOE has either missed, or is certain to miss:

- M-045-00B - Complete the retrieval of waste from sixteen C-Farm Single-Shell Tanks.
- M-045-05A - Complete waste retrieval from tank S-102.
- M-045-05 – Complete single-shell tank retrievals by September 30, 2018.
- M-062-00 - Complete Pretreatment processing and vitrification of Hanford high-level and low-activity tank wastes by December 31, 2028.
- M-062-00A - Complete Waste Treatment and Immobilization Plant pretreatment and high-level and low-activity vitrification of no less than 10 percent Hanford tank waste by volume and 25 percent by activity by February 28, 2018.
- M-062-07B – Complete assembly of the Low-Activity Waste melter; move High-Level Waste melter number 1 into the High-Level Waste building by December 31, 2007.
- M-062-08 - Submit Hanford Tank Waste Supplemental Treatment Technologies Report by June 30, 2006.
- M-062-09 - Start cold commissioning of the Waste Treatment and Immobilization Plant by February 28, 2009.
- M-062-10 - Complete hot commissioning of the Waste Treatment and Immobilization Plant by January 31, 2011.

On August 11, 2009, the Department of Energy and the Washington State Department of Ecology announced tentative agreement on revised timetables under the Tri-Party Agreement and a new Consent Decree to be filed in federal district court for cleanup of the Hanford Site. Major milestones include beginning treatment of waste at the WTP in 2019 (from 2011), emptying single-shell tanks of waste by 2040 (from 2018), and completion of treatment of all tank waste by 2047 (from 2028).

Critical Site Uncertainties and Assumptions

The River Protection Project is currently addressing a number of significant known uncertainties that are impacting the ability of the Hanford Site to disposition waste and complete the cleanup mission. Some of these uncertainties include:

- Delays in off-site disposal will require increased interim storage capacity for the vitrified canisters of high-level waste on site.
- Uncertainties regarding tank waste determination decisions because the State of Washington is not a “covered State” under Section 3116 of the National Defense Authorization Act of FY 2005. This could impact overall site tank closures, costs, and schedules because alternative approaches for tank closure may need to be developed.
- Successful identification, demonstration and regulator approval of a supplemental technology to immobilize a portion of the low-activity waste.

Interdependencies

The Office of River Protection has identified the following near-term interdependencies needed for mission execution:

- Technical consultation with the Nuclear Regulatory Commission on allowable waste residuals in the Hanford single-shell tanks based on Appendix H of the Tri Party Agreement.
- Availability of off-site disposal for high-level waste.

Contract Synopsis

The Office of River Protection currently has two major prime contracts to implement its cleanup strategy: the Tank Farm Operation contract and the Waste Treatment and Immobilization Plant contract. The Tank Farm Operation contract was awarded to Washington River Protection Solutions, LLC, and the contractor began execution on October 1, 2008, following a ninety day transition period. The contract is a five-year contract term with options for up to five additional years and addresses the following: (1) storage, operation, and interim stabilization of Hanford tank waste; (2) retrieval and disposition of waste from, and interim closure of single-shell tanks; (3) retrieval and disposition of waste from double-shell tanks, including completion of upgrades and waste retrieval and transfer systems; (4) construction, operation, and maintenance of facilities necessary for storage/disposal of immobilized waste whether on- or off-site, including balance of plant construction; (5) stabilization of facilities and preparation of tank closure plans for single-shell tanks; and (6) decommissioning and decontamination to support improved long-term operational efficiencies. This contract is a cost-plus-award-fee contract with performance-based incentives.

The Waste Treatment and Immobilization Plant contract with Bechtel National, Inc., includes the design, construction, and commissioning of the Waste Treatment and Immobilization Plant which includes: completing the Process and Facility Design; managing construction and procurement; conducting acceptance testing; commissioning of the facility; conducting all required environment, safety, quality, and health actions; assuming Full Design Authority; and having full accountability for

meeting plant performance requirements, cost, and schedule. This contract type is a cost-plus-award-fee contract with, schedule, and operational incentives. In January 2009, DOE completed renegotiations of the contract with Bechtel National, Inc., the scope of which was based on the new Waste Treatment and Immobilization Plant Performance Baseline approved by the Deputy Secretary on December 22, 2006.

Cleanup Benefits

Near Term

- Retrieve liquid waste from single-shell tanks and transfer the waste to double-shell tanks for safe storage until the waste can be treated through the Waste Treatment and Immobilization Plant.
- Determine necessary supplemental treatment technologies for treating a portion of the low activity waste.
- Complete the Tank Closure and Waste Management Environmental Impact Statement.
- Continue development of technology for hard-heel tank waste removal.

Longer Term

Significant environmental risk reduction due to retrievals and treatment of Hanford's tank waste and closure of the tank farms to protect the Columbia River.

Direct maintenance and repair at the Office of River Protection is estimated to be \$45,622,000.

Funding Schedule by Activity

	(dollars in thousands)		
	FY 2009	FY 2010	FY 2011
Defense Environmental Cleanup			
Office of River Protection			
Tank Farm Activities			
ORP-0014 / Radioactive Liquid Tank Waste Stabilization and Disposition	319,943	408,000	418,000
Waste Treatment and Immobilization Plant			
ORP-0060 / Major Construction-Waste Treatment Plant	690,000	690,000	740,178
Total, Office of River Protection	1,009,943	1,098,000	1,158,178

Performance Measure Summary

	Complete through FY 2009	Complete through FY 2010	Complete through FY 2011	Life-Cycle	FY 2011 % Complete
River Protection					
High-Level Waste packaged for final disposition (Number of Containers)	0	0	0	9,667	0%
Industrial Facility Completions (Number of Facilities)	0	0	0	128	0%
Liquid Waste in Inventory eliminated (Thousands of Gallons)	0	0	0	54,000	0%
Liquid Waste Tanks closed (Number of Tanks)	0	0	0	177	0%
Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	10,267	12,137	13,653	197,832	6.9%
Nuclear Facility Completions (Number of Facilities)	0	0	0	18	0%
Radioactive Facility Completions (Number of Facilities)	0	0	0	114	0%
Remediation Complete (Number of Release Sites)	5	5	5	278	1.8%
Transuranic Waste shipped for disposal (Cubic meters) - CH	0	0	0	1,555	0%
Transuranic Waste shipped for disposal (Cubic meters) - RH	0	0	0	4,410	0%

Detailed Justification

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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ORP-0014 / Radioactive Liquid Tank Waste Stabilization and Disposition

319,943 408,000 418,000

This PBS can be found within the Defense Environmental Cleanup appropriation.

This project includes activities required to stabilize approximately 53 million gallons of radioactive waste stored underground in 177 tanks, including retrieval, treatment, disposal and closure of the facilities.

The radioactive waste stored in the Hanford tanks was produced as part of the nation's defense program and has been accumulating since 1944. Due to the age of the tanks, up to sixty-seven tanks are suspected of leaking a total of about one million gallons of waste into the soil. Continued leakage could threaten the Columbia River, located between seven and ten 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. DOE's plan is to process tank waste and disposition it as vitrified high-level waste or low-level waste at an approved disposal facility. A Tank Closure and Waste Management Environmental Impact

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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Statement is being prepared to decide how to close the tanks, ancillary equipment below grade, and any residual waste that cannot be retrieved, as well as above ground facilities. Appropriate caps and barriers will be used to remediate the contaminated soil surrounding the tanks as required.

Specific activities in the scope of this project include:

- Manage the tank farms in a safe and compliant manner until the waste is retrieved for processing and the tank farms are closed.
- 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 and Immobilization Plant or supplemental/alternative treatment facilities.
- Operation of treatment facilities to complete the tank waste program.
- 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, facilities to store the vitrified high-level waste pending off-site disposal; and on-site low-activity waste disposal facilities.
- Construction of storage facilities where vitrified high-level waste canisters will be stored.
- Disposal of low-activity waste containers at the Hanford Site until all tank waste is stabilized.
- Operate the Waste Treatment and Immobilization Plant after construction and perform decontamination and decommissioning of the facility.
- Operate the 222-S Laboratory and the 242-A Evaporator.
- Conduct independent expert reviews and evaluations, and Environmental, Safety, Health, and Quality activities.
- Conduct scientific applied research and technology development activities to advance solutions for the treatment of radioactive waste including pre-treatment processes, tank structural integrity, and advanced retrieval technologies.

Currently, tank farm activities include: initiation of the retrieval system design and construction to support waste feed delivery to the Waste Treatment and Immobilization Plant; continued development of additional single-shell tank retrieval technology demonstrations; and operation of the 222-S Laboratory and the 242-A Evaporator. In addition, retrieval of the remaining solids and sludges from seven single-shell tanks has been completed. Construction of the integrated disposal facility was completed for future use in disposing of low-activity waste and mixed low-level waste. Initial design

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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and engineering scale tests to resolve outstanding technical issues were successfully completed for the Demonstration Bulk Vitrification System, a supplemental technology to increase the ability to treat and dispose of Hanford's low-activity tank waste. The Demonstration Bulk Vitrification System Project Integrated Dryer/Full-Scale Melt Test final report was issued and laboratory analyses of samples from this test confirmed a successful melt and resolution of the molten ionic salt issue. Completed installation of the first interim barrier in T Farm to mitigate known contaminate plumes in the vadose zone under single-shell tanks.

DOE is developing a strategy to accomplish the tank cleanup mission within a 25 to 35 year timeframe. The Waste Treatment and Immobilization Plant has the capacity to immobilize 100 percent of the high level waste and 50 percent of the low activity waste within this timeframe. To address the remaining 50 percent of low activity waste, the approach is to conduct studies, evaluate alternative technologies, and conduct testing as needed for future options for low activity waste treatment. These activities will support a future DOE decision for pretreating and immobilizing the low activity waste.

In FY 2011, the following activities are planned:

- Complete two 242-A Evaporator Campaigns for space management.
- Complete retrieval of two C-Farm Single-Shell Tanks.
- Continue to perform single-shell tank integrity evaluations and implement expert panel recommendations.
- Operate the 222-S laboratory and 242-A evaporator.
- Complete removal of six hose-in-hose transfer lines.
- Initiate design and procurement activities to retrieve the next single-shell tanks.
- Initiate design of Interim Surface Barrier SX Farm.
- Initiate C-200 Closure Demonstration Project.
- Initiate C-301 Catch Tank Remediation.
- Continue Secondary Waste Treatment/Effluent Treatment Project design.
- Conduct supplemental treatment alternative studies.
- Conduct scientific applied research and technology development activities to advance solutions for the treatment of radioactive waste including pre-treatment processes, tank structural integrity, and advanced retrieval technologies.

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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- A portion of the scope of work typically covered in this project is being executed with American Recovery and Reinvestment Act funding as discussed above in the American Recovery and Reinvestment Act Activities section in the Site Overview.

Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
Liquid Waste in Inventory eliminated (Thousands of Gallons)	0	0	0	54,000	0%
Liquid Waste Tanks closed (Number of Tanks)	0	0	0	177	0%
High-Level Waste packaged for final disposition (Number of Containers)	0	0	0	9,667	0%
Transuranic Waste shipped for disposal (Cubic meters) - CH	0	0	0	1,555	0%
Transuranic Waste shipped for disposal (Cubic meters) - RH	0	0	0	3,864	0%
Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	10,267	12,137	13,653	197,832	7.0%
Nuclear Facility Completions (Number of Facilities)	0	0	0	18	0%
Radioactive Facility Completions (Number of Facilities)	0	0	0	114	0%
Industrial Facility Completions (Number of Facilities)	0	0	0	128	0%
Remediation Complete (Number of Release Sites)	5	5	5	278	2.0%
Key Accomplishments (FY 2009)/Planned Milestones (FY 2010/FY 2011)					
<ul style="list-style-type: none"> ▪ Complete three double-shell tank core samples and analysis to support tank integrity. (FY 2009) ▪ Perform three double-shell tank and two cross-site transfers. (FY 2009) ▪ Complete two evaporator campaigns for space management. (FY 2009/September 2011) ▪ Complete AP Tank Farm Level Rise for double-shell tank space management. (FY 2009) ▪ Continue to perform additional single-shell tank integrity evaluations (FY 2009/September 2010/September 2011) ▪ Replace evaporating heating, ventilation, and air-conditioning (exhaust side) to protect (September 2010) ▪ Complete one evaporator campaign for space management (September 2010) ▪ Complete retrieval of one C-Farm single-shell tank (September 2010) ▪ Conduct Double-Shell Tank Space Evaluation (September 2010) 					

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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- Operate the 222-S laboratory and 242-A evaporator (September 2010/September 2011)
- Perform Surveillance, monitoring and corrective maintenance of the Tank Farm facilities (September 2010)
- Remove Hose-in-Hose Transfer Lines (September 2010)
- Initiate design and procurement activities to retrieve the next C Farm single-shell tank (September 2010/September 2011)
- Complete installation of the TY Farm Interim Barrier (September 2010)
- Complete bulk retrieval of two C-Farm Single-Shell Tanks (September 2011)
- Complete removal of additional hose-in-hose transfer lines (September 2011)
- Design the SX Farm Interim Surface Barrier (September 2011)
- Initiate C-200 Closure Demonstration Project (September 2011)
- Initiate C-301 Catch Tank Remediation (September 2011)
- Initiate 242-CR Vault Characterization (September 2011)
- Finalize and submit pipeline feasibility study in support of Closure Demonstration (September 2011)

ORP-0060 / Major Construction-Waste Treatment Plant

690,000 690,000 740,178

This PBS can be found within the Defense Environmental Cleanup appropriation.

The scope of this project includes: design, construction, and commissioning of the line-item project 01-D-416, Waste Treatment and Immobilization Plant. In FY 2006, funds were appropriated at the line-item subproject level and the five subprojects are as follows: 01-D-16A - Low-Activity Waste Facility, 01-D-16B - Analytical Laboratory, 01-D-16C - Balance of Facilities, 01-D-16D - High-Level Waste Facility, and 01-D-16E - Pretreatment Facility. In FY 2010, the five subprojects for the Waste Treatment and Immobilization Plant Project were combined into two subprojects: 01-D-16A-D - Waste Treatment and Immobilization plant, and 01-D-16E - Pretreatment Facility. However, EM will continue to provide detailed information on the separate subprojects for Congressional review.

The Waste Treatment and Immobilization Plant is critical to the completion of the Hanford tank waste program by providing the primary treatment capability to immobilize (vitrify) the radioactive tank waste at the Hanford Site. The Waste Treatment and Immobilization Plant complex includes five major facilities: Pretreatment Facility, High-Level Waste Facility, Low-Activity Waste Facility, Analytical Laboratory, and the Balance of Facilities. The Pretreatment Facility will separate the radioactive tank waste into low-activity and high-level fractions. The high-level fraction will be transferred to the High-Level Waste Facility for immobilization (i.e., vitrified into glass), ready for disposal. At least 40 percent of the low-activity waste fraction will be transferred and immobilized (vitrified into glass) in the Low-

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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Activity Waste Facility, with the balance immobilized using an alternative, supplemental treatment being developed on the Hanford Site. The Analytical Laboratory will provide real-time analytical support for plant operations. The Balance of Facilities includes office facilities, chemical storage, site utilities, and infrastructure.

This project also includes technical and managerial support to the Federal Project Director for the Waste Treatment and Immobilization Plant. Examples of this type of support include: project management and assessment of contractor performance. This allows the Department to be more proactive in identifying emerging cost and schedule issues. The Federal Project Director maintains full responsibility and accountability for the successful completion of the Waste Treatment Plant and Immobilization Plant project.

In FY 2011, the following activities are planned:

Accelerate completion of engineering and procurement to reduce risk and improve project confidence.

Low-Activity Waste Facility –

- Accept Thermal Catalytic Oxidizer a major off-gas component.
- Accept HEPA pre-heaters a major off-gas component.
- Complete 80 percent of bulk process piping installation and 65 percent of bulk conduit installation.

Analytical Laboratory Facility –

- Complete 90 percent of bulk piping installation.
- Complete 70 percent of bulk conduit installation.

Balance of Facilities –

- Accept delivery of the Anhydrous Ammonia System.
- Award purchase order of 4.16KV emergency diesel generator.

High-Level Waste Facility –

- Complete civil engineering design (Title II) and Architectural design.
- Receive HEPA filter housing, Off-Gas Blowers, and the Acidic Waste Vessel from suppliers.
- Set HEPA filter housing in Filter Cave.
- Place 9,000 cubic yards of concrete, 78 percent complete.
- Install 831 tons of structural steel, 27 percent complete.
- Install 9,100 linear feet of piping, 19 percent complete.
- Install 74,800 pounds of HVAC ducting, 27 percent complete.
- Install 16,900 linear feet of conduit, 20 percent complete.
- Install 1,900 linear feet of cable tray, 21 percent complete.

Pretreatment Facility –

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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- Receive Cesium Ion Exchange spiral plate heat exchangers (feed coolers).
- Receive Cesium Nitric Acid Recovery re-boiler and heat exchanger.
- Complete vessel upgrades for three spent resin collection and dewatering vessels to incorporate revised seismic assessment criteria.
- Place lower pipe module for the Low-Activity Waste feed receipt cell.
- Place 3,550 cubic yards of concrete, 83 percent complete.
- Install 555 tons of structural steel, 43 percent complete.
- Install 64,300 linear feet of piping, 21 percent complete.
- Install 11,450 pounds of HVAC ducting, 16 percent complete.
- Install 13,750 linear feet of conduit, 38 percent complete.
- Install 7,850 linear feet of cable tray, 26 percent complete.

Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
Transuranic Waste shipped for disposal (Cubic meters) - RH	0	0	0	546	0%
Key Accomplishments (FY 2009)/Planned Milestones (FY 2010/FY 2011)					
<ul style="list-style-type: none">▪ Resumed construction of the high-level waste facility. (FY 2009)▪ Issue-For-Construction Drawings for Pretreatment Concrete Walls, El. 56-77ft (FY 2009)▪ Lab - Receive Waste Transfer Equipment (FY 2009)▪ Lab Engineering - Title II Design Complete (FY 2009)▪ Complete design for the Low-Activity Waste Facility (Title II). (FY 2009)▪ BOF - Complete Installation of Cathodic Protection System (FY 2009)▪ Low-Activity Waste Construction - Erect Switchgear Building (October 2009)▪ Low-Activity Waste Construction - Receive Offgas Mercury Absorber (October 2009)▪ High-Level Waste -Receive and Accept Melter Cave 1 Crane Maintenance (November 2009)▪ DOE Approval of M-12 Closure (December 2009)▪ Pretreatment Facility - Release for construction all steel work for the 4th floor (77 ft. level). (January 2010)▪ Issue-For-Construction Drawings for the Pretreatment Rack Design (January 2010)▪ High-Level Waste -Erect Structural Steel, EL 0-14ft (January 2010)▪ Install Hot Cell cranes and shield doors in the Pretreatment Facility. (February 2010)▪ Lab - Receive Autosampler (ASX) Equipment (February 2010)					

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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- Low Activity Waste Facility - Melter 2 Lid and Balance of Components - Ready for Assembly (June 2010)
- Balance of Facilities - Complete Construction Water Treatment Building (July 2010)
- High-Level Waste Engineering - Complete HVAC Design (Title II) (September 2010)
- High-Level Waste Facility - Complete Civil Engineering Design (Title II) (February 2011)
- Pretreatment Facility - Set Hot Cell Frames for Areas 1, 24, and 25 (July 2011)

Total, River Protection	1,009,943	1,098,000	1,158,178
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Explanation of Funding Changes

FY 2011 vs. FY 2010 (\$000)

Defense Environmental Cleanup

Office of River Protection

Tank Farm Activities

ORP-0014 / Radioactive Liquid Tank Waste Stabilization and Disposition

- Increase in funding will allow initiation of the C-301 Catch Tank remediation, the C-200 Closure Demonstration project and the 242-CR Vault Characterization. 10,000

Waste Treatment and Immobilization Plant

ORP-0060 / Major Construction-Waste Treatment Plant

- Increase in funding will accelerate completion of design and engineering that will directly support the completion of WTP engineering. Increased funding will support procurements for the accelerated incorporation of procured components into the final design. This accelerated completion will reduce risk and improve project confidence. 50,178

Total, River Protection	60,178
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01-D-416 Waste Treatment and Immobilization Plant, Hanford, WA

1. Significant Changes

The most recent DOE Order 413.3A approved Critical Decisions are Critical Decision-2 and Critical Decision-3c, approved on 4/21/2003, with a Total Project Cost of \$5,781,000,000 and Critical Decision-4 of July 2011. Latest approved Baseline Change was on December 22, 2006 with a Total Project Cost of \$12,263,000,000 and Critical Decision-4 of November 2019.

This Construction Project Data Sheet is an update of the FY 2010 Construction Project Data Sheet. The estimated cost, schedule dates, and accomplishments are included with this Construction Project Data Sheet.

On August 2, 2009, a new Federal Project Director was appointed to be the acting Assistant Manager in charge of the Waste Treatment and Immobilization Plant, as the prior project manager had accepted a management position at the DOE Oak Ridge field site. The acting Federal Project Director has been certified to a Level II project manager in accordance with DOE's Project Management Career Development Program, and is applying for Level IV certification. A Level IV certification is the highest level and is required for projects where the Total Project Cost is greater than \$400,000,000.

The following table provides a summary of the updated Earned Value Measurement Performance Measurement Baseline, Management Reserve/Fee identification, and Contingency use as established in the January 2009 contract revision. The March 2009 Baseline reflects updates to the approved December 2006 Baseline.

The funding increase of \$50,178,000 over \$690,000,000 will accelerate completion of design and engineering that will directly support the completion of WTP engineering. Increased funding will support procurements for the accelerated incorporation of procured components into the final design. This accelerated completion will reduce risk and improve project confidence.

	FY 2008 CPDS	FY 2010 CPDS	FY 2011 CPDS	
	(dollars in thousands)			
Description	December 2006 Baseline	Jan. 2009 Baseline	March 2009 Baseline	Baseline Delta Dec. 06 to Mar. 09
Performance Measurement Baseline	8,786,000	9,963,558	9,916,316	1,130,316
Management Reserve/Contract Contingency/Fee ^a	2,278,000	1,102,940	1,150,182	(1,127,818)
Subtotal, Contract Scope Costs	\$11,064,000	\$11,066,498	\$11,066,498	(\$2,498)
Project Contingency	1,014,000	1,011,502	1,011,502	2,498
Other Project Costs	135,000	135,000	135,000	0
Transition Cost (from Privatization Contract)	50,000	50,000	50,000	0
Subtotal, Other Scope Costs	\$1,199,000	\$1,196,502	\$1,196,502	\$2,498
Total Project Cost	\$12,263,000	\$12,263,000	\$12,263,000	\$0

^a This line, after the 'December 2006 Baseline' column, does not include \$400 million of Contract Contingency, which was moved to the Project Contingency controlled by DOE. In a separate action, \$93 million of Project Contingency was transferred to Management Reserve/ Fee in accordance with the January 2009 contract revision.

There is no change in the Total Project Cost for the Fiscal Year 2011 Construction Project Data Sheet and the issues associated with the External Flowsheet Review Team have been resolved.

The project still maintains a Management Reserve of about \$530,000,000, and a Project Contingency of about \$1,011,502,000 for the remaining scope.

Status of Major Technical and Performance Issues

The Department along with the contractor and other independent experts worked towards resolving these issues in FY 2009:

- 1) **Inadequate vessel mixing** - This issue relates to whether adequate mixing of the fluids and solids in the vessels can be achieved using the proposed technology of pulse jet mixers. Inadequate Newtonian fluid mixing could limit the capability of the Waste Treatment and Immobilization Plant and extend the facility's treatment mission. A testing program has been designed to fully demonstrate the technology. Parametric testing of mock pulse jet mixers using glass beads of varying sizes and densities was completed in early August 2008. Data was evaluated to develop pulse jet mixer mixing correlations. A second phase of testing is currently underway to further test and evaluate the adequacy of pulse jet mixer mixed vessels. A second round of testing has been completed on the Feed Evaporator Process vessel and Ultra-filtration Process vessel designs and work is proceeding to evaluate alternative designs for the High Level Waste Process receipt vessel. The current plan is to complete testing and close M-3 by June 2010. Design improvements are being identified for those vessels at risk of not meeting their mixing requirements.
- 2) **Ultrafiltration and Undemonstrated Leaching Process** – This issue relates to the concern that the ultrafiltration system and leaching process had not been demonstrated beyond small-scale laboratory tests. The contractor has performed modeling to develop optimum ultrafiltration system operating approaches, tested tank waste samples using the optimized flowsheet, and developed simulants. These activities are complete or are in final stages of report writing. The final action of the issue response plan required testing the ultrafiltration flowsheet at engineering scale. This testing was completed with the Pretreatment Engineering Platform.

The Pretreatment Engineering Platform is a 1:4.5 scale non-radioactive integrated equipment platform which demonstrates the ultrafiltration system, leaching process design, system scale-up, and improved projections of system capacity. Simulant testing was completed in April 2009. These tests provided critical information needed to confirm ultrafiltration system design by demonstrating caustic leaching, oxidative leaching, solids washing, and process control strategies. Initial test results appeared to confirm the flowsheet design. Final evaluation of this data, in conjunction with other laboratory testing and modeling, confirmed the ultrafiltration system design and provided improved estimates of system capacity and projection of mission duration. This issue was closed in September 2009.

Defense Nuclear Facilities Safety Board Oversight

The Defense Nuclear Facilities Safety Board (Board) provides nuclear safety oversight of the Waste Treatment and Immobilization Plant Project. The Board had identified several issues with the Waste Treatment and Immobilization Project in their quarterly reports to Congress on defense DOE projects in design and construction. These include: 1) concerns with structural analysis of the High-Level Waste and Pretreatment facilities, including modeling, definition of a seismic load transfer capability in the structure, and the finite element analysis; 2) lack of fire protection coatings on secondary structural steel members; 3) alternative means of protecting the final exhaust High-Efficiency Particulate Air filters of the confinement ventilation systems equivalent to that of the features prescribed in DOE Standard 1066, *Fire Protection Design Criteria*, and 4) hydrogen gas control. The Department has resolved the first three issues and is working diligently to resolve the fourth issue:

1) Structural Analysis of High-Level Waste and Pretreatment facilities – In 2008, the Department completed the last of the technical analyses to support resolution of this issue. This was the documentation of the load path analysis of the High-Level Waste and Pretreatment facilities under a design seismic event in High-Level Waste and Pretreatment Structural Summary Reports. The project has incorporated technical and editorial comments by the Board and has submitted updated reports to the Defense Nuclear Facilities Safety Board. DOE will evaluate the selected use of the specific Waste Treatment Plant project seismic criteria for vessels and equipment still under design and construction.

2) Fire Protection Coatings of Structural Steel - In January 2009, the Board sent DOE a letter that noted that the High-Level Waste and Pretreatment facilities essentially meet International Building Code criteria for fire resistant construction. The letter noted that the Board agreed with the conclusion that the fire protection strategy for structural steel was adequate based on consequence of nuclear safety, but that to fully resolve the issue it needed confirmation that chemical consequences from a fire would be acceptable. In its June 22, 2009, quarterly report to Congress, the Board noted that subsequent review revealed that the planned fireproof coating is adequate to prevent a structural collapse that would release hazardous chemicals in the event of a design basis fire. This issue is now considered closed.

3) Application of DOE criteria for fire protection of confinement ventilation systems – The project has included the criteria of a DOE technical standard as requirements for fire protection of filters in confinement ventilation systems that preclude the release of radioactive materials. The DOE decided to tailor sections of the DOE technical standard based upon its evaluation of the safety analysis, which concluded that the design provided a level of safety comparable to the standard. The design was modified to incorporate some significant safety features and the Assistant Secretary for Environmental Management approved the ventilation system design as a part of the approval needed for compliance with the Department's Implementation Plan for a Defense Nuclear Facilities Safety Board recommendation for active confinement ventilation systems. This issue is now closed.

4) Hydrogen gas generation- DOE had previously developed a conservative design criterion and an adequate set of engineered and administrative controls to address potential explosions (deflagrations and detonations) in piping and ancillary vessels as a result of hydrogen accumulation. The Department initiated actions to re-evaluate the design criteria and associated controls due to its concerns regarding the operational complexity introduced by the controls. The Defense Nuclear Facilities Safety Board identified concerns with an approach that would allow explosions that could

permanently deform the primary confinement barrier, as well as the consistency between DOE's approach and applicable code requirements for vessel and piping designs.

The Defense Nuclear Facilities Safety Board has also identified some concerns with other recent Waste Treatment and Immobilization Plant initiatives to reduce complexity associated with future operations of the plant. The DOE is evaluating refinement to more realistic – but still conservative source terms (i.e., by review of the material at risk), through advances in characterizing tank farm wastes, as a means of minimizing operational complexity and enhancing operational safety of the plant. Initial results from a Technical Authority Review indicate that a sound basis exists to support reclassifying some select systems. Recommendations have been developed and DOE has approved the contractor's safety documentation with four conditions that need to be addressed in FY 2010 in order to achieve full implementation.

Background

This Construction Project Data Sheet is structured with summary information at the project level with details provided at the subproject level. Through FY 2005, the Waste Treatment and Immobilization Plant Project had been funded as one line item (01-D-416). In FY 2006, the Waste Treatment and Immobilization Plant Project was split into five subprojects. In the FY 2010 Appropriation, the five subprojects for the Waste Treatment and Immobilization Plant Project were combined into two subprojects:

- 01-D-16A-D, Waste Treatment and Immobilization plant
- 01-D-16E, Pretreatment Facility

However, EM is providing detailed information on the five separate subprojects to maintain visibility for Congressional review:

- 01-D-16A, Low-Activity Waste Facility
- 01-D-16B, Analytical Laboratory
- 01-D-16C, Balance of Facilities
- 01-D-16D, High-Level Waste Facility
- 01-D-16E, Pretreatment Facility

2. Design, Construction, and D&D Schedule

(fiscal quarter or date)

	CD-0	CD-1	PED Complete	CD-2	CD-3	CD-4	D&D Start	D&D Complete
FY 2001 Budget Request	4Q FY1995	4Q FY1996	4Q FY2005	4Q FY1998	1Q FY2002	1Q FY2007	N/A	N/A
FY 2002 Budget Request	4Q FY1995	4Q FY1996	4Q FY2005	4Q FY1998	3Q FY2002	1Q FY2007	N/A	N/A
FY 2003 Budget Request	4Q FY1995	4Q FY1996	4Q FY2005	4Q FY1998	3Q FY2002	1Q FY2007	N/A	N/A
FY 2004 Budget Request	4Q FY1995	4Q FY1996	4Q FY2005	4Q FY1998	3Q FY2002	1Q FY2007	N/A	N/A
FY 2003 Congressional Notification	4Q FY1995	4Q FY1996	4Q FY2005	3Q FY2003	3Q FY2003	3Q FY2008	N/A	N/A

**Defense Environmental Cleanup/01-D-416/
Waste Treatment and Immobilization Plant/River Protection**

FY 2011 Congressional Budget

(fiscal quarter or date)

	CD-0	CD-1	PED Complete	CD-2	CD-3	CD-4	D&D Start	D&D Complete
FY 2005 Budget Request	4Q FY1995	4Q FY1996	4Q FY2005	3Q FY2003	3Q FY2003	3Q FY2008	N/A	N/A
FY 2004 Reprogramming	4Q FY1995	4Q FY1996	4Q FY2005	3Q FY2003	3Q FY2003	3Q FY2008	N/A	N/A
FY 2006 Budget Request	4Q FY1995	4Q FY1996	4Q FY2007	3Q FY2003	3Q FY2003	3Q FY2008	N/A	N/A
FY 2007 Budget Request	4Q FY1995	4Q FY1996	4Q FY2007	3Q FY2003	3Q FY2003	3Q FY2008	N/A	N/A
FY 2008 Budget Request	4Q FY1995	4Q FY1996	4Q FY2010	3Q FY2003	3Q FY2003	2Q FY2017	N/A	N/A
FY 2009 Budget Request	4Q FY1995	4Q FY1996	4Q FY2013	3Q FY2003	3Q FY2003	1Q FY2020	N/A	N/A
FY 2010 Budget Request	4Q FY1995	4Q FY1996	1Q FY2016	3Q FY2003	3Q FY2003	1Q FY2020	N/A	N/A
FY 2011 Budget Request	4Q FY1995	4Q FY1996	1Q FY2016	3Q FY2003	3Q FY2003	1Q FY2020	N/A	N/A

CD-0 – Approve Mission Need

CD-1 – Approve Alternative Selection and Cost Range

CD-2 – Approve Performance Baseline

CD-3 – Approve Start of Construction

CD-4 – Approve Start of Operations or Project Closeout

D&D Start – Start of Demolition & Decontamination (D&D) work

D&D Complete – Completion of D&D work

Notes:

- 1) The FY 2009 Budget Request 'PED Complete' date was based on the June 2007 Execution Revision schedule.
- 2) The FY 2004 Budget Request 'CD-3' date of 4Q FY 2002 represented the start of physical construction. The FY 2003 Congressional Notification 'CD-3' represents the date approval was granted to begin full construction (CD-3c).
- 3) The FY 2008 Budget Request 'CD-4' date of 2Q FY 2017 represented the completion of physical construction of the WTP facilities. In the FY 2009 Budget Request, the 'CD-4' completion date represents the completion of construction, start-up, commissioning and transfer of the Waste Treatment Plant to the operations contractor.
- 4) In the FY 2010 Budget Request, the 'PED Complete' date reflects contract dates from the revised January 2009 contract.

3. Baseline and Validation Status

(Fiscal Quarter)

	TEC, PED	TEC, Construction	TEC, Total	OPC Except D&D	OPC, D&D	OPC, Total	TPC
FY 2001	0	5,466,000	5,466,000	7,022,000	0	7,022,000	12,488,000
FY 2002	0	4,350,000	4,350,000	0	0	0	4,350,000
FY 2003	0	4,350,000	4,350,000	0	0	0	4,350,000
FY 2004	0	4,350,000	4,350,000	0	0	0	4,350,000
FY 2003 Cong. Notification	0	5,781,000	5,781,000	0	0	0	5,781,000
FY 2005	0	5,781,000	5,781,000	0	0	0	5,781,000
FY 2006	0	5,781,000	5,781,000	0	0	0	5,781,000
FY 2007	0	5,781,000	5,781,000	0	0	0	5,781,000
FY 2008	0	12,263,000	12,263,000	0	0	0	12,263,000
FY 2009	0	12,263,000	12,263,000	0	0	0	12,263,000
FY 2010	0	12,263,000	12,263,000	0	0	0	12,263,000
FY 2011	0	12,263,000	12,263,000	0	0	0	12,263,000

The FY 2001 Budget Request presented the contract value using a privatization approach for this project. The contract included design, construction, and commissioning (at a Total Estimated Cost of \$5,466,000,000), and ten years of initial operations, which would treat approximately 10 percent of waste by volume, and 25 percent of the waste, by radioactivity, for a Total Project Cost of \$12,488,000,000. The plant was designed to have a 40 year operational life, during which time it would process a total of 40 percent of the waste by volume. A second plant (not part of the current project contract) would be necessary to treat and immobilize the balance of the low-activity waste. In May 2000, the Secretary of Energy terminated the privatization contract, because of the dramatic cost increase submitted by the contractor to complete the project.

In December 2000, the Department awarded a Cost-Plus Incentive-Fee contract estimated at \$4,350,000,000 to design, construct and commission the Waste Treatment and Immobilization Plant. In April 2003, a contract modification was negotiated with the principal change of increasing the throughput capacity of the Pretreatment and High-Level Waste Facilities, with the goal of pretreating all of the waste during the 40 year life of the facility, immobilizing all high-level fraction and at least 40 percent of the low-activity fraction. The Department approved a Performance Baseline with a Total Project Cost of \$5,781,000,000. In December 2006, due to over-optimistic cost estimates, and seismic and technical issues, the Department approved a new Performance Baseline with a revised Total Project Cost of \$12,263,000,000.

4. Project Description, Justification, and Scope

The Waste Treatment and Immobilization Plant is the cornerstone of the River Protection Project's mission to clean up hazardous and radioactive waste contained in underground storage tanks at the Hanford Site in southeastern Washington State. Approximately 53,000,000 gallons of waste containing approximately 240,000 metric tons of processed chemicals and 190,000,000 curies of radio nuclides are currently stored in 170 tanks (seven tanks have been emptied). These caustic wastes are in the form of liquids, slurries, saltcakes, and sludge, and are the result of more than four decades, starting in 1944, of reactor operations and plutonium production for national defense. The infrastructure that supports storage of this waste is aging. The construction of the Waste Treatment and Immobilization Plant and its subsequent operation, once completed will treat and stabilize the bulk of these wastes.

The Waste Treatment and Immobilization Plant, the world's largest most complex nuclear waste treatment plant, covers 65 acres and includes three major nuclear facilities - Pretreatment Facility, High-Level Waste Facility, and Low-Activity Waste Facility - along with a large Analytical Laboratory, and supporting buildings and utilities collectively known as the Balance of Facilities.

The Department's Office of River Protection is responsible for managing the critically important effort to design, build, and commissioning the waste treatment plant. The Waste Treatment and Immobilization Plant is an unprecedented engineering and construction challenge equivalent to simultaneously building two nuclear power plants. Through a process known as vitrification, most of Hanford's tank waste volume will be transformed into a sturdy, durable form by blending the waste with molten glass and pouring it into stainless steel canisters. In that form, the waste will remain stable and impervious to the environment while its radioactivity dissipates over hundreds to thousands of years.

The Office of River Protection is implementing cleanup under two contract vehicles:

- The Tank Operations Contractor provides for safe storage and retrieval of tank wastes, storage and disposal of treated waste, decontamination and decommissioning of tanks, and initiation of post closure monitoring of the tank farms. The scope of work for this contract also includes providing the infrastructure to support hot commissioning.
- The Waste Treatment and Immobilization Plant Project's Contractor is to design, construct, commission, and support transition of the plant into full operation.

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 operating and commissioning capability; and conduct all required environmental, safety, quality, and health actions. From contract award, the contractor is the design authority responsible for the design of the plant.

When operating, the Waste Treatment and Immobilization Plant will pretreat tank waste through separation into a high-level fraction and a low-activity fraction. Both fractions will be immobilized through vitrification into glass. The immobilized high-level fraction is planned to be disposed in a national geologic repository for spent fuel and high-level waste or will be temporarily stored on the Hanford site in a canister storage building. The immobilized low-activity fraction will be placed in a disposal facility on the Hanford site. The plant is composed of five facilities which are integrated to accomplish the mission for the Waste Treatment and Immobilization Plant Project. The Pretreatment Facility accomplishes the separation of the wastes. The High-Level Waste Facility will immobilize, through vitrification, the entire high-level fraction. The Low-Activity Waste Facility will immobilize, through vitrification, a substantial portion of the low-activity fraction. The Analytical Laboratory Facility will provide the necessary sample analysis needed throughout the processing facilities. The Balance of Facilities includes the plant infrastructure and support facilities (steam plant, electrical switch yards, chiller plant, etc.).

The River Protection Project regulatory pathway for cleanup has been provided in the past primarily by the Hanford Federal Facility Agreement and Consent Order, commonly known as the Tri-Party Agreement. On August 11, 2009, the Department of Energy and the Washington State Department of Ecology announced tentative agreement on revised timetables under the Tri-Party Agreement and a new Consent Decree to be filed in federal district court for cleanup of the Hanford Site. Major milestones include beginning treatment of waste at the Waste Treatment and Immobilization Plant in 2019 (from 2011), emptying single-shell tanks of waste by 2040 (from 2018), and completion of treatment of all tank waste by 2047 (from 2028).

FY 2009 Accomplishments:

For the Low-Activity Waste Facility, Title II Design and Engineering were completed, and both glass former mixers, melter off-gas fabricated piping sections and power supply equipment were received. Construction forces completed installation of roof/wall stainless steel liner plate in the melter pour caves, erection of structural steel on the receiving dock, and continued installation of piping, hangers and other commodities.

For the Analytical Laboratory, Title II Design and Engineering were completed, and the waste transfer system and mechanical handling hot cell equipment were fabricated and received onsite. Construction continued with installation of drywall partitions, piping, hangers, and other commodities. Placement of

the north-end concrete wall of the hot cell and 55 percent of the heating, ventilation and air conditioning, ducting were completed. Balance of Facilities progress included issuing drawings for the Anhydrous Ammonia Facility and award of a purchase order for the anhydrous ammonia vaporizers skids, final construction completion of the Steam Plant, and completing installation of the Cathodic protection system.

For the High-Level Waste Facility, major design activities include releasing the remaining concrete embed drawings to fabrication for second to third floor walls, and issuance of the High Level Waste documentation that demonstrates compliance with repository program requirements. Procurement activities included delivery of key materials and equipment, including the High Level Waste Offgas system High-Efficiency Mist Eliminators, second to third floor concrete embedments and pipe connection assemblies, Melter Cave #1 and #2 shield doors, and awarding the contract for the vertical shield door recovery assembly and the melter offgas Thermal Catalytic Oxidizer. Construction activities included completion of 30 walls and 16 slabs on the first to second floor, continued civil build out, and installation of piping, hangers, heating, ventilation, and air-conditioning duct, and other commodities. Also completed were the canister transfer cart maintenance crane steel/rails, Melter #2 pour tunnel canister transfer cart maintenance room crane and shield door, and filter cave crane maintenance shield door frame assembly.

For the Pretreatment Facility, design activities include release of design for remaining 13 of 50 reinforced concrete walls between the third and fourth floors, release of roof framing drawings, which completes the release of the main Pretreatment building structure, and issuance of all pipe isometric drawings for the low-activity waste feed receipt area. Construction activities include installation of the 20-ton waste handling area spent filter radiological shield door, and completing erection of the building main frame steel work at the west end of the building from the third to fourth floors.

It was anticipated that the remaining unresolved technical issues of the 31 issues identified by the External Flowsheet Review Team, would be resolved and approved by the Office of River Protection Project Manager by the end of the fiscal year. Tests conducted with the Pretreatment Engineering Platform were used to verify the operational capabilities of critical systems of the Pretreatment Facility; however, an additional test platform to test effectiveness of mixing using pulse jet mixers has been procured, and is still being used to verify the mixing design.

FY 2010 Planned Activities:

For the Low-Activity Waste Facility, the remaining piping fabrication, system logic diagrams, and updated melter design drawings will be completed, as well as issuance of the Low-Activity Waste Facility Waste Qualification Report. Construction activities will continue with the installation of miscellaneous steel and piping, heating, ventilation, and air conditioning duct, cable trays, conduit, and cable and wire. Erection of the switchgear building and truck bay will also be completed. Major equipment installations will include the carbon bed absorber, and fabrication and shipment of the lids for both melters.

For the Analytical Laboratory, engineering will complete the mechanical system confirmed calculations and Process and Instrumentation Diagrams. The Autosampler System equipment and two axial filter housings will be delivered to the site. Construction forces will complete installation of elevated concrete for the waste collection tank pit, and miscellaneous piping and heating, ventilation and air conditioning

ducting (90 percent complete) will continue to be installed. For the Balance of Facilities, mechanical handling design will be completed for multiple facilities. Construction of the Water Treatment building, Balance of Facilities Switchgear Building, Fuel Oil Facility, and Cooling Tower Facility will be completed. Installation of commodity racks, piping, and electrical systems for various facilities will also continue to progress.

For the High-Level Waste Facility, design activities included completion of Heating, Ventilation and Air Conditioning Title II design, Autosampler system design, and issuance of civil engineering drawings for slabs at the fourth floor elevation. Procurement Activities include fabrication and delivery of the first High-Level Waste Melter Assembly, Melter cave #1 crane maintenance shield door, and two Melter feed vessel agitators. Construction activities include completion of 25 walls and 11 slabs on the first to third floors for a total of 4,720 cubic yards of concrete placed, erection of structural steel between the first and second floors, setting of six Melter shield doors in Melter caves #1 and #2, continuation of civil build out, and installation of piping, hangers, heating, ventilation, and air-conditioning duct, and other commodities.

For the Pretreatment Facility, design activities include release of design for the final 13 of 47 12-inch thick reinforced concrete floor slabs for the fourth floor (this release provides an additional 1,100 cubic yards of concrete for construction to place), release of design for the final 9 of 36 reinforced concrete walls between the fourth to fifth floor (this release provides an additional 650 cubic yards of concrete for construction to place). Procurement activities include delivery of the three demister units for the Pretreatment filter cave to the material handling facility. Construction activities include lift of the 112-ton ultra filtration feed preparation vessel, and completion of concrete wall and slab placements on the third and fourth floors.

FY 2011 Proposed Activities:

For the Low-Activity Waste Facility, the remaining mechanical system confirmed calculations and Process and Instrumentation Diagram drawings will be completed. The melter off gas catalytic oxidizer and high-efficiency particulate air pre-heaters will be received. Construction continues with piping, hanger, electrical conduit, and other commodity installation, and the melter off gas catalytic oxidizer will be set in-place. For the Analytical Laboratory, 90 percent of bulk piping installation and 70 percent of bulk conduit will be completed, as well as completion of the heating, ventilation and air-conditioning equipment on the second floor. For the Balance of Facilities, major activities will be the award of the purchase order for the 4.16kV emergency diesel generator, and receipt of the anhydrous ammonia system.

For the High-Level Waste Facility, design activities include completion of Title II Civil Engineering and Architectural Design. Major procurement activities include receipt of the High Efficiency Particulate Air filter housings and dampers for the primary ventilation system, Plant Wash Vessel #8, and High-Level Waste Melter Offgas Treatment Process System fans. Construction activities include completion of 50 concrete walls and slabs on the second to third floors, continuation of civil build out and installation of piping, hangers, heating, ventilation, and air-conditioning duct, and other commodities, installation of High Efficiency Particulate Air filter housings in the Filter Cave and stainless steel liners in Pour Tunnels #1 and #2.

For the Pretreatment Facility, procurement activities include delivery of the Cesium Ion Exchange spiral plate heat exchangers (feed coolers) and Cesium Nitric Acid Recovery re boiler and heat exchanger. Construction activities include completion of vessel upgrades for three spent resin collection and dewatering vessels to incorporate the revised seismic assessment criteria, lift of the lower pipe module for the Low-Activity Waste feed receipt cell, and setting support frame structures for process jumpers and process equipment in the hot cell.

Estimated Engineering and Design Status through FY 2011. In FY 2008 the Waste Treatment and Immobilization Plant contractor identified the need for additional engineering work to support the completion of facility design and support construction activities. Completion of the Title II design (work required to allow the placement of walls and installation of piping, cable and structural steel, and procurement of major equipment) had been more difficult than originally anticipated. Earlier Engineering estimates had not included sufficient hours to support vendor design changes and resolve unforeseen technical issues during the construction of the facilities. In a December 2008 internal replan, two million additional engineering hours were added across the five Waste Treatment and Immobilization Plant facilities, resulting in an overall decrease in the engineering/design percent complete. However, the following percent completes now include engineering work associated with Research and Technology, and Environmental and Nuclear Safety, which increases the percent complete values.

Funding increase of \$50,178,000 over \$690,000,000 will accelerate completion of engineering and procurement to reduce risk and improve project confidence.

The following table provides the estimated design status for each of the five subprojects at fiscal yearend for FY 2009 through FY 2011.

Engineering/Design Complete	FY 2009	FY 2010	FY 2011
Low-Activity Waste	92%	96%	97%
Analytical Laboratory	79%	85%	86%
Balance of Facilities	77%	85%	90%
High-Level Waste	81%	87%	91%
Pretreatment	76%	83%	91%
Total WTP¹	77%	83%	88%

1) The WTP project Design/Engineering total percent complete calculations factor in Research and Testing, Process Engineering, and Environmental & Nuclear Safety costs which are in addition to the five facilities costs.

The project is being conducted in accordance with the project management requirements in DOE Order 413.3A, *Program and Project Management for the Acquisition of Capital Assets*, and all appropriate project management requirements have been met.

5. Financial Schedule

(dollars in thousands)

Appropriations	Obligations	Costs
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(dollars in thousands)

	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
Construction			
FY 2001 ^a	401,171	401,171	226,311
FY 2002	665,000	665,000	488,469
FY 2003 ^{bc}	671,898	671,898	621,574
FY 2004 ^d	697,530	682,402	725,246
FY 2005 ^e	684,480	695,552	811,862
FY 2006	520,759	524,815	516,002
FY 2007 ^{fgh}	690,000	621,000	550,991
FY 2008 ⁱ	683,721	752,721	727,764
FY 2009	690,000	690,000	738,987
FY 2010	690,000	690,000	804,004
FY 2011 ^j	740,178	740,178	739,787
FY 2012	690,000	690,000	671,588
FY 2013	690,000	690,000	720,717
FY 2014	690,000	690,000	714,619
FY 2015	690,000	690,000	719,614
FY 2016	690,000	690,000	649,601
FY 2017	690,000	690,000	650,780
FY 2018	640,000	640,000	717,457
FY 2019	348,263	348,263	357,601
FY 2020	-	-	110,026
Total, Construction	12,263,000	12,263,000	12,263,000

(a) FY 2001 Appropriations reflect a FY 2001 Rescission of \$829,000 and FY 2001 Supplemental Appropriation of \$25,000,000. The original appropriation was \$377,000,000.

(b) FY 2003 Appropriations reflect approved FY 2003 reprogramming of \$83,981,567 to increase the project from \$606,018,433 to \$690,000,000 to meet project requirements.

(c) FY 2003 Appropriations and Obligations reflect a reduction of \$18,102,000 as part of the FY 2004 Energy and Water Development Appropriation Act prior year reduction.

(d) FY 2004 Appropriations reflect a reduction of \$3,964,000 due to FY 2004 Government-wide Rescission of 0.59 percent and increase of \$11,494,000 due to a reprogramming.

(e) FY 2005 Appropriations reflect a reduction of \$5,520,000 due to FY 2005 Government-wide Rescission of 0.8 percent.

(f) New WTP Project Performance Baseline as approved on December 22, 2006.

(g) The FY 2007 National Defense Authorization Act states that only 90 percent of funds may be obligated until the Secretary of Energy certifies the WTP Earned Value Management System. In March of 2008 the WTP Earned Value Management System received certification.

(h) The Prior Year Appropriations, Obligations, and Costs have been updated to reflect a more current estimate of the anticipated utilization of the non-facility specific carryover funding remaining in the WTP line-item, 01-D-416.

(i) FY 2008 Enacted Appropriations reflect a reduction of \$6,278,000 due to the FY 2008 rescission of 0.91 percent.

(j) Funding increase of \$50,178,000 over \$690,000,000 will accelerate completion of engineering and procurement to reduce risk and improve project confidence.

The following table breaks out appropriations by Subproject:

(\$ thousands)

WTP Project	Prior	FY09	FY10	FY11	Outyears	Total
Low-Activity	1,157,199	160,000	100,000	57,500	609,301	2,084,000
Analytical Lab	274,090	65,000	55,000	2,500	393,410	790,000
Bal of Facilities	522,845	75,000	50,000	5,000	557,155	1,210,000

High-Level	1,276,889	125,000	160,000	260,178	1,417,933	3,240,000
Pretreatment	1,783,536	265,000	325,000	415,000	2,150,464	4,939,000
Total Project Appropriations	5,014,559	690,000	690,000	740,178	5,128,263	12,263,000

The following table breaks out estimated costs by Subproject:

(\$ thousands)

WTP Project	Prior	FY09	FY10	FY11	Outyears	Total
Low-Activity	1,139,794	116,198	122,719	67,459	637,830	2,084,000
Analytical Lab	260,221	60,455	36,961	21,601	410,762	790,000
Bal of Facilities	489,461	55,531	42,331	51,198	571,479	1,210,000
High-Level	1,118,117	202,998	239,707	197,090	1,482,088	3,240,000
Pretreatment	1,660,626	303,805	362,286	402,439	2,209,844	4,939,000
Total Project Costs	4,668,219	738,987	804,004	739,787	5,312,003	12,263,000

The following tables provide a breakdown of planned spending for engineering, procurement, construction, and commissioning for each facility for FY 2010 and FY 2011.

Planned Spend for FY 2010 (dollars in thousands)

Facility	Engineering	Procurement	Construction	Commissioning	Total
Low-Activity Waste	39,448	26,990	52,505	3,776	122,719
Analytical Laboratory	7,754	10,708	15,955	2,544	36,961
Balance of Facilities	10,748	4,431	25,550	1,602	42,331
High-Level Waste	42,873	104,809	85,226	6,800	239,707
Pretreatment	86,890	155,367	109,124	10,905	362,286
Total	187,712	302,305	288,359	25,627	804,004

Planned Spend for FY 2011 (dollars in thousands)

Facility	Engineering	Procurement	Construction	Commissioning	Total
Low-Activity Waste	11,315	13,194	39,693	3,257	67,459
Analytical Laboratory	7,840	1,384	10,259	2,118	21,601
Balance of Facilities	10,122	14,752	21,757	4,568	51,198
High-Level Waste	30,963	64,806	92,409	8,912	197,090
Pretreatment	76,764	195,015	114,199	16,461	402,439
Total	137,004	289,150	278,317	35,316	739,787

6. Details of Project Cost Estimate

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design (PED)			
Total, PED	N/A	N/A	N/A
Construction			
Site Preparation	n/a	n/a	n/a
Engineering/Design	2,547,977	2,493,233	1,475,000
Equipment/Procurement ¹	2,380,748	2,443,355	1,125,000
Facility Construction ²	3,720,637	3,714,187	2,155,000
Commissioning ³	1,409,428	1,360,225	876,000
Technical Support/Transition	185,000	185,000	50,000
Contingency/Fee ⁴	2,019,210	2,067,000	100,000
Total, Construction	12,263,000	12,263,000	5,781,000
Total, TEC	12,263,000	12,263,000	5,781,000
Contingency, TEC	[2,019,210]	[2,067,000]	[100,000]
Other Project Cost (OPC)	N/A	N/A	N/A
Contingency, OPC			
Total, TPC	12,263,000	12,263,000	5,781,000
Total, Contingency	[2,019,210]	[2,067,000]	[100,000]

Note: The dollars above may not necessarily match the dollar values in the Section 1 tables, as the dollars in the table above represent financial actuals through FY 2008 and the anticipated spend through FY 2020, and the Section 1 tables are based on Earned Value Management values. Most of the delta in values is related to accruals for equipment purchase orders.

1. Equipment/Procurement dollars represent costs of plant equipment, bulk plant material, and acquisition services.
2. Facility Construction dollars represent construction costs through system turnover.
3. Commissioning dollars represent the cost of Start-up, Cold Commissioning, and Hot Commissioning.
4. Contingency/Fee dollars represent the contractor's Management Reserve, Total Available Fee, and DOE Project Contingency.

7. Funding Profile History

Request		(\$K)								
		Prior Years	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	Outyears	Total
FY 2002	TEC	4,350,000	N/A	4,350,000						
	OPC	0	0	0	0	0	0	0	0	0
	TPC	4,350,000	N/A	4,350,000						
FY 2003	TEC	4,350,000	N/A	4,350,000						
	OPC	0	0	0	0	0	0	0	0	0
	TPC	4,350,000	N/A	4,350,000						
FY 2004	TEC	4,350,000	N/A	4,350,000						
	OPC	0	0	0	0	0	0	0	0	0
	TPC	4,350,000	N/A	4,350,000						
FY 2005	TEC	5,781,000	0	0	0	0	0	0	0	5,781,000
	OPC	0	0	0	0	0	0	0	0	0
	TPC	5,781,000	0	0	0	0	0	0	0	5,781,000
FY 2006	TEC	5,354,720	339,152	87,128	0	0	0	0	0	5,781,000
	OPC	0	0	0	0	0	0	0	0	0
	TPC	5,354,720	339,152	87,128	0	0	0	0	0	5,781,000
FY 2007	TEC	5,343,618	339,152	98,230	0	0	0	0	0	5,781,000
	OPC	0	0	0	0	0	0	0	0	0
	TPC	5,343,618	339,152	98,230	0	0	0	0	0	5,781,000
FY 2008 Performance Baseline	TEC	5,704,559	690,000	690,000	690,000	690,000	690,000	690,000	2,418,441	12,263,000
	OPC	0	0	0	0	0	0	0	0	0
	TPC	5,704,559	690,000	690,000	690,000	690,000	690,000	690,000	2,418,441	12,263,000
FY 2009	TEC	5,704,559	690,000	690,000	690,000	690,000	690,000	690,000	2,418,441	12,263,000
	OPC	0	0	0	0	0	0	0	0	0
	TPC	5,704,559	690,000	690,000	690,000	690,000	690,000	690,000	2,418,441	12,263,000
FY 2010	TEC	5,704,559	690,000	690,000	690,000	690,000	690,000	690,000	2,418,441	12,263,000
	OPC	0	0	0	0	0	0	0	0	0
	TPC	5,704,559	690,000	690,000	690,000	690,000	690,000	690,000	2,418,441	12,263,000
FY 2011	TEC	5,704,559	690,000	740,178	690,000	690,000	690,000	690,000	2,368,263	12,263,000
	OPC	0	0	0	0	0	0	0	0	0
	TPC	5,704,559	690,000	740,178	690,000	690,000	690,000	690,000	2,368,263	12,263,000

8. Related Operations and Maintenance Funding Requirements

Start of Operation or Beneficial Occupancy (fiscal quarter or date)	1Q FY 2020
Expected Useful Life (number of years)	40
Expected Future Start of D&D of this capital asset (fiscal quarter)	TBD

(Related Funding requirements)

(Dollars in Thousands)

Annual Costs		Life Cycle Costs	
Current Total Estimate	Previous Total Estimate	Current Total Estimate	Previous Total Estimate
N/A	N/A	N/A	N/A

Operations will start after the project is completed in November 2019. The annual facility operating costs for the Waste Treatment and Immobilization Plant (following start-up and commissioning) and subsequent Decommissioning and Demolition are not included in this line item project or in the five subprojects. These costs are included in PBS ORP-0014, Office of River Protection - Radioactive Liquid Tank Waste Stabilization and Disposition project, and are therefore not included in this Construction Project Data Sheet.

9. Required D&D Information

Area	Square Feet
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This project is providing new capability for the Hanford site, and is not replacing a current capability. Thus, this project was not justified on the basis of replacing current facilities. Therefore, no existing facilities will be demolished in conjunction with this project.

10. Acquisition Approach

The acquisition of a waste treatment facility to treat Hanford waste was initially planned as a privatized procurement and the project was referred to as the Tank Waste Remediation System. The strategy was for the contractor to design, build, finance, and operate the facility for 10 years and the Department would pay for waste processed. Two privatization contracts were signed in September 1996 for the preparation of conceptual designs: (1) a subsidiary of BNFL plc, with Bechtel National, Incorporated as a subcontractor, and (2) Lockheed-Martin. In May 1998, BNFL, Incorporated was authorized to proceed with preliminary design. Construction was scheduled to commence in December 2000 and hot operations were to start in December 2007, to treat approximately 10 percent of the tank waste (by mass) and 25 percent of the tank waste radioactivity inventory. This plant was expected to have a 40 year operational life and would process a total of 40 percent of the waste by volume. A second plant would be necessary to treat and immobilize the balance of the waste. Planning associated with this privatization contract completed the following Critical Decision milestones:

1. Critical Decision - 0: Approved Mission Need - September 1995
2. Critical Decision - 1: Approved Preliminary Baseline Range - September 1996
3. Critical Decision - 2: Approved Performance Baseline - August 1998

In May 2000, the Secretary of Energy terminated the privatization contract, because of the dramatic cost increase submitted by the contractor to complete the project. In December 2000, the Department awarded a Cost-Plus Incentive-Fee contract estimated at \$4,350,000,000 to design, construct and commission the Waste Treatment and Immobilization Plant. In April 2003, a contract modification was negotiated with the principal change being to cover increasing the through-put capacity of the Pretreatment and High-Level Waste Facilities, with the goal of pretreating all of the waste during the 40 year life of the facility, immobilizing all high-level fraction and at least 40 percent of the low-activity fraction. The Department approved a Performance Baseline with a Total Project Cost of \$5,781,000,000. In December 2006, the Department approved a new Performance Baseline with a revised Total Project Cost of \$12,263,000,000.

The project is being executed in accordance with the project management requirements in DOE Order 413.3A and DOE Manual 413.3-1, *Program and Project Management for the Acquisition of Capital Assets*. The following critical decisions were approved after the December 2000 award:

1. Critical Decision - 3A: Approved Limited Construction - October 2001
2. Critical Decision - 3B: Approved Preliminary Construction - May 2002

3. Critical Decision - 3C: Approved Full Construction - April 2003
4. Approval of Revised Cost and Schedule Baseline - December 2006

The following critical decision is planned for the future.

1. Critical Decision - 4: Approved Start of Operation - 1Q FY 2020
(Based on completion of hot commissioning by July 30, 2019, and transition of operations to the Tank Operations Contractor by November 30, 2019.)

The contractual milestone dates shown below are based on the recently executed, revised contract with the Waste Treatment and Immobilization Plant contractor. The River Protection Project regulatory pathway for cleanup has been provided in the past primarily by the Hanford Federal Facility Agreement and Consent Order, commonly known as the Tri-Party Agreement. On August 11, 2009, the Department of Energy and the Washington State Department of Ecology announced tentative agreement on a proposed judicial consent decree for retrieval of certain single-shell tanks and construction and initial operation of the Waste Treatment and Immobilization Plant as well as proposed and modified milestones under the Tri-Party Agreement for retrieval of the remaining single-shell tanks, closure of single-shell tanks and double-shell tanks, and treatment of all tank wastes. Some significant milestones under these proposals include achieving initial operations of the Waste Treatment and Immobilization Plant in 2019 (from 2011), completing retrieval of wastes from single-shell tanks by 2040 (from 2018), and completing pretreatment processing and vitrification of Hanford high-level waste and low activity tank wastes by 2047 (from 2028).

Waste Treatment and Immobilization Plant Milestones

WTP Project Milestone Description	Schedule Date
Start of Construction	July 10, 2002 A
Start Cold Commissioning*	September 30, 2017
Completion of Hot Commissioning*	July 30, 2019
Completion of Contract Requirements	November 30, 2019
* Contract Dates - January 2009 Revision	

Note: The planned dates represent the contract dates and may differ from dates displayed in Section 2, which are the DOE Critical Decision approval dates.

01-D-16A, Low-Activity Waste Facility, Hanford, WA Project Data Sheet is for Construction

1. Significant Changes

The most recent DOE Order 413.3A approved Critical Decision for the overall Waste Treatment and Immobilization Plant Project is Critical Decision-2 and Critical Decision-3c, approved on 4/21/2003, with a Total Project Cost of \$5,781,000,000 and Critical Decision-4 of July 2011. The latest approved Baseline Change was on December 22, 2006 with a Total Project Cost of \$12,263,000,000 and Critical Decision-4 of November 2019.

This Construction Project Data Sheet is an update of the FY 2010 Construction Project Data Sheet. The estimated cost, schedule dates, and accomplishments included with this Construction Project Data Sheet are based on March 2009 project data.

The current Total Project Cost for the Low-Activity Waste Facility is \$2,084,000,000. Facility milestone dates are consistent with the revised January 2009 contract.

A Federal Sub-Project Director with a current level II certification has been assigned to the Low-Activity Waste Facility, per the DOE Project Management Career Development Program.

2. Design, Construction, and D&D Schedule

(fiscal quarter or date)

	CD-0	CD-1	PED Complete	CD-2	CD-3	CD-4	D&D Start	D&D Complete
FY 2007	4Q FY1995	4Q FY1996	4Q FY2007	3Q FY2003	3Q FY2003	3Q FY2008	N/A	N/A
FY 2008	4Q FY1995	4Q FY1996	4Q FY2008	3Q FY2003	3Q FY2003	2Q FY2012	N/A	N/A
FY 2009	4Q FY1995	4Q FY1996	3Q FY2009	3Q FY2003	3Q FY2003	1Q FY2014	N/A	N/A
FY 2010	4Q FY1995	4Q FY1996	4Q FY2011	3Q FY2003	3Q FY2003	1Q FY2020	N/A	N/A
FY 2011	4Q FY1995	4Q FY1996	4Q FY2011	3Q FY2003	3Q FY2003	1Q FY2020	N/A	N/A

CD-0 – Approve Mission Need

CD-1 – Approve Alternative Selection and Cost Range

CD-2 – Approve Performance Baseline

CD-3 – Approve Start of Construction

CD-4 – Approve Start of Operations or Project Closeout

D&D Start – Start of Demolition & Decontamination (D&D) work

D&D Complete – Completion of D&D work

Notes:

- 1) The FY 2009 Budget Request 'PED Complete' date is based on the June 2007 Execution Revision schedule.
- 2) The FY 2008 Budget Request date for 'CD-4' of 2Q FY 2012 represented the completion of physical construction of the facility. In the FY 2009 Budget Request the 'CD-4' completion date represents the completion of construction, start-up, commissioning, and the transfer of the facility to the operations contractor (based on the Early LAW concept).
- 3) The FY 2010 Budget Request 'PED Complete' and 'CD-4' dates are from the revised contract signed January 2009, and the 'CD-4' date now represents the completion of construction, start-up, commissioning and the transfer of the WTP Project to the operations contractor.

The Mission Need (Critical Decision - 0) for the Waste Treatment and Immobilization Plant Project was approved in September 1995, followed by Critical Decision - 1 in September 1996, and Critical Decision - 2 in August 1998. The Waste Treatment and Immobilization Plant Project was initiated as a privatization contract in 1998, and then was re-bid to a conventional cost reimbursable type contract in December 2000. In May 2002, Critical Decision - 3b - Preliminary Construction - was approved, which authorized basemat concrete and concrete walls to grade, and allowed the first concrete placement for the Low-Activity Waste Facility in July 2002. In April 2003, a revised Performance Baseline (Critical Decision - 2) and Full Construction Authorization (Critical Decision - 3c) were formally approved for the Waste Treatment and Immobilization Plant Project.

3. Baseline and Validation Status

(Fiscal Quarter)

	TEC, PED	TEC, Construction	TEC, Total	OPC Except D&D	OPC, D&D	OPC, Total	TPC
FY 2007	0	1,060,740	1,060,740	0	0	0	1,060,740
FY 2008	0	1,748,000	1,748,000	0	0	0	1,748,000
FY 2009	0	1,748,000	1,748,000	0	0	0	1,748,000
FY 2010	0	2,084,000	2,084,000	0	0	0	2,084,000
FY 2011	0	2,084,000	2,084,000	0	0	0	2,084,000

Note: FY 2007 budget submittal values above did not include the facility costs prior to FY 2006. These prior year costs (FY 2001 - FY 2005, included in Line Item 01-D-416) were added to the FY 2008 budget submittal values to provide the total estimated cost for the facility.

A revised Performance Baseline for the overall Waste Treatment and Immobilization Plant Project was validated and approved on December 22, 2006, with a Total Project Cost of \$12,263,000,000. The estimated Low-Activity Waste Facility portion of the current Total Project Cost is now \$2,084,000,000.

4. Project Description, Justification, and Scope

The Low-Activity Waste Facility is an integral part of the tank waste cleanup project. The facility is a seven-story concrete and steel framed building that covers an area one football field long by one-and-a-half football fields wide. It is constructed from 28,000 cubic yards of concrete and 6,000 tons of structural steel, includes 19 miles of piping. The low-activity waste will be mixed with glass formers, converted to glass, and placed in stainless steel canisters (7 feet high, 4 feet in diameter), which will be disposed in the on-site Integrated Disposal Facility. The facility utilizes two melters that have a combined design capacity (name plate) and combined treatment capacity (at 70 percent plant availability) of 30 metric tons and 21 metric tons, respectively, of glass per day. The facility is designed for contact maintenance, as the melters are self-shielded. An annex abutting the facility will provide control rooms, entries, and operations and maintenance support areas.

FY 2009 Accomplishments

Design Activities:

- Continued to move design toward completion, with the following significant achievements:
 - Completed Title II Design and Engineering activities (those activities that would support a bid for construction and procurements had the project been administered in the manner of a design-bid-build project).

Procurement Activities:

- Received both glass former mixers.
- Received the melter off gas spools within the process cells including the concrete wall boxes.
- Received the melter power supply equipment.

Construction Activities:

- Completed installation of the roof and wall stainless steel liner plated in melter #1 and #2 pour caves.
- Completed structural steel erection on the receiving dock.
- Completed rough setting both glass former mixers on the roof of the facility.
- Continued installation of piping, hangers, and other commodities.

FY 2010 Activities

Design Activities:

- Continue to move design toward completion, with the following significant achievements:
 - Issue remaining fabrication piping isometrics and engineered pipe support drawings.
 - Issue system logic diagrams.
 - Revise/update melter design drawings.
 - Issue Low Activity Waste facility Waste Qualification Report.

Procurement Activities:

- Receive the off gas mercury adsorber.
- Complete fabrication for Melter 1 and Melter 2 lid and balance of components.
- Award purchase order for the Secondary Offgas/Vessel Vent Process System off gas high integrity centrifugal exhausters and thermal catalytic oxidizer.

Construction Activities:

- Continue installation of piping, hangers, and other commodities, with the following significant achievements:
 - Complete Switchgear Building erection which includes structural steel erection, siding & roofing installation and building utility installation (electrical commodities and eating/ventilation/cooling).
 - Complete staging six exhaust high-efficiency particulate air filter housings on the 48-foot elevation (third floor).
 - Initiate construction installation for off gas wall boxes and off gas spools on the process cells.

FY 2011 Activities

Design Activities:

- Continue to move design toward completion, with the following significant achievements:
 - Complete mechanical system confirmed calculations and Process and Instrumentation Diagram drawings.
 - Complete plant design confirmed stress/support final calculations.

Procurement Activities:

- Maintain backlog of materials supporting construction, with the following significant achievements:
 - Receive and accept the melter off gas catalytic oxidizer.
 - Receive and accept the melter off gas high-efficiency particulate air pre-heaters.
 - Complete Research and Technology closure reports.

Construction Activities:

- Continue installation of piping, hangers, and other commodities, with the following significant achievements:
 - Complete rough setting the melter off gas catalytic oxidizer.
 - Complete approximately 80 percent of bulk process piping installation.
 - Complete approximately 65 percent of bulk conduit installation.

The following table provides the status for each phase by the end of each fiscal year: accomplished for FY 2009, planned for FY 2010, and proposed for FY 2011.

Phase	FY 2009	FY 2010	FY 2011
Design	92%	96%	97%
Procurement	80%	91%	94%
Construction	62%	71%	77%
Commissioning	4%	4%	5%
Overall Facility ^a	67%	73%	77%

^a The WTP project Design/Engineering total percent complete calculations factor in Research and Testing, Process Engineering, and Environmental & Nuclear Safety costs which are in addition to the five facilities costs.

The project is being conducted in accordance with the project management requirements in DOE O 413.3A, *Program and Project Management for the Acquisition of Capital Assets*, and all appropriate project management requirements have been met.

5. Financial Schedule

(dollars in thousands)

Appropriations	Obligations	Costs
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Total Estimated Cost (TEC)

Construction

FY 2005 ^a	668,124	668,124	585,620
FY 2006	161,376	161,376	172,147
FY 2007	186,000	186,000	187,749
FY 2008	141,699	141,699	194,278
FY 2009	160,000	160,000	116,198
FY 2010	100,000	100,000	122,719
FY 2011	57,500	57,500	67,459
FY 2012	65,000	65,000	63,654
FY 2013	50,000	50,000	52,227
FY 2014	60,000	60,000	62,758
FY 2015	56,500	56,500	68,753
FY 2016	105,000	105,000	93,398
FY 2017	100,000	100,000	94,021
FY 2018	90,000	90,000	99,786
FY 2019	82,801	82,801	55,531
FY 2020	-	-	47,702
Total, Construction	2,084,000	2,084,000	2,084,000

Notes:

^a The FY 2005 line is based on facility costs prior to the split of the WTP into the five facilities.

The following table provides a breakdown of planned spending by design, procurement, construction, and commissioning for the next few fiscal years (in thousand of dollars):

Phase	FY 2009	FY 2010	FY 2011
Design	32,484	39,448	11,315
Procurement	27,401	26,990	13,194
Construction	53,141	52,505	39,693
Commissioning	3,172	3,776	3,257
Total Facility	116,198	122,719	67,459

6. Details of Project Cost Estimate

(dollars in thousands)

Current Total Estimate	Previous Total Estimate	Original Validated Baseline ^e
------------------------	-------------------------	--

Total Estimated Cost (TEC)

Design (PED)

Total, PED

N/A N/A N/A

Construction

Site Preparation

n/a n/a n/a

Engineering/Design

485,579 471,435 n/a

Equipment/Procurement^a

422,494 433,122 n/a

Facility Construction^b

617,131 644,084 1,175,000

Commissioning^c

248,324 262,359 n/a

Technical Support/Transition

32,748 33,000 n/a

Contingency/Fee^d

277,724 240,000 n/a

Total, Construction

2,084,000 2,084,000 1,175,000

Total, TEC

2,084,000 2,084,000 1,175,000

Contingency, TEC

[277,724] [240,000] n/a

Other Project Cost (OPC)

N/A N/A N/A

Contingency, OPC

Total, TPC

2,084,000 2,084,000 1,175,000

Total, Contingency

[277,724] [240,000] n/a

Notes:

^a Equipment/Procurement dollars represent of costs of plant equipment, plant material, and Acquisition Services.

^b Facility Construction dollars represent construction costs through system turnover.

^c Commissioning dollars represent the cost of Start-up, Cold Commissioning, and Hot Commissioning.

^d Contingency/Fee represents the contractor's Management Reserve, Fee, and DOE Project Contingency.

^e The value listed in the "Original Validated Baseline - Facility Construction" is a total number for all the values that would normally appear in this column. A breakout for the March 2003 Baseline is not available, as until FY 2006 the facilities were not separated but totaled for the whole project, and the current breakout methodology was implemented in FY 2008.

7. Funding Profile History

Request		(\$K)								
		Prior Years	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	Outyears	Total
FY 2008 Performance Baseline	TEC	1,317,199	80,000	75,000	51,000	45,000	30,000	25,000	124,801	1,748,000
	OPC	0	0	0	0	0	0	0	0	0
	TPC	1,317,199	80,000	75,000	51,000	45,000	30,000	25,000	124,801	1,748,000
FY 2009	TEC	1,317,199	100,000	55,000	85,000	45,000	30,000	25,000	90,801	1,748,000
	OPC	0	0	0	0	0	0	0	0	0
	TPC	1,317,199	100,000	55,000	85,000	45,000	30,000	25,000	90,801	1,748,000
FY 2010	TEC	1,317,199	100,000	60,000	75,000	55,000	50,000	70,000	356,801	2,084,000
	OPC	0	0	0	0	0	0	0	0	0
	TPC	1,317,199	100,000	60,000	75,000	55,000	50,000	70,000	356,801	2,084,000
FY 2011	TEC	1,317,199	100,000	57,500	65,000	50,000	60,000	56,500	377,801	2,084,000
	OPC	0	0	0	0	0	0	0	0	0
	TPC	1,317,199	100,000	57,500	65,000	50,000	60,000	56,500	377,801	2,084,000

8. Related Operations and Maintenance Funding Requirements

See the discussion in the 01-D-416, Waste Treatment and Immobilization Plant project level data sheet.

9. Required D&D Information

See the discussion in the 01-D-416, Waste Treatment and Immobilization Plant project level data sheet.

10. Acquisition Approach

See the discussion in the 01-D-416, Waste Treatment and Immobilization Plant project level data sheet.

The following facility milestone dates are based on the contractor's December 2008 Internal Replan and revised contract signed in January 2009.

Low-Activity Waste Facility Milestones

Milestone Title	Milestones - January 2009
Start Construction	July 10, 2002 A
Complete Design	September 30, 2011
Substantially Complete Construction*	December 31, 2014
Complete Construction	June 2015
Start Cold Commissioning*	February 28, 2018
Complete Hot Commissioning*	May 30, 2019
A = Actual date construction started which followed approval of CD-3B.	
* Contract Milestones-January 2009 Contract	

Note: The final Low-Activity Waste Facility Construction Complete milestone is June 2015. After construction and in preparation of Cold Commissioning, component and system testing will be conducted on 11 process systems as well as operator training.

01-D-16B, Analytical Laboratory, Hanford, WA Project Data Sheet is for Construction

1. Significant Changes

The most recent DOE Order 413.3A approved Critical Decision for the overall Waste Treatment and Immobilization Plant Project is Critical Decision-2 and Critical Decision-3c, approved on 4/21/2003, with a Total Project Cost of \$5,781,000,000 and Critical Decision-4 of July 2011. The latest approved Baseline Change was on December 22, 2006 with a Total Project Cost of \$12,263,000,000 and Critical Decision-4 of November 2019.

This Construction Project Data Sheet is an update of the FY 2010 Construction Project Data Sheet. The estimated cost, schedule dates, and accomplishments included with this Construction Project Data Sheet are based on March 2009 project data.

The current Total Project Cost for the Analytical Laboratory is \$790,000,000. Facility milestone dates are consistent with the revised January 2009 contract.

A Federal Sub-Project Director with a current level II certification has been assigned to the Analytical Laboratory, per the DOE Project Management Career Development Program.

2. Design, Construction, and D&D Schedule

(fiscal quarter or date)

	CD-0	CD-1	PED Complete	CD-2	CD-3	CD-4	D&D Start	D&D Complete
FY 2007	4Q FY1995	4Q FY1996	4Q FY2007	3Q FY2003	3Q FY2003	3Q FY2008	N/A	N/A
FY 2008	4Q FY1995	4Q FY1996	4Q FY2009	3Q FY2003	3Q FY2003	1Q FY2011	N/A	N/A
FY 2009	4Q FY1995	4Q FY1996	1Q FY2010	3Q FY2003	3Q FY2003	1Q FY2014	N/A	N/A
FY 2010	4Q FY1995	4Q FY1996	4Q FY2012	3Q FY2003	3Q FY2003	1Q FY2020	N/A	N/A
FY 2011	4Q FY1995	4Q FY1996	4Q FY2012	3Q FY2003	3Q FY2003	1Q FY2020	N/A	N/A

CD-0 – Approve Mission Need

CD-1 – Approve Alternative Selection and Cost Range

CD-2 – Approve Performance Baseline

CD-3 – Approve Start of Construction

CD-4 – Approve Start of Operations or Project Closeout

D&D Start – Start of Demolition & Decontamination (D&D) work

D&D Complete – Completion of D&D work

Notes:

- 1) The FY 2009 Budget Request 'PED Complete' date is based on the June 2007 Execution Revision schedule.
- 2) The FY 2008 Budget Request date for 'CD-4' of 1Q FY 2011 represented the completion of physical construction of the facility. In the FY 2009 Budget Request, the 'CD-4' completion date represents the completion of construction, start-up, commissioning and the transfer of the laboratory to the operations contractor (based on the Early Law concept).
- 3) The FY 2010 Budget Request 'PED Complete' and 'CD-4' dates are from the revised contract signed January 2009, and the 'CD-4' date now represents the completion of construction, start-up, commissioning and the transfer of the WTP Project to the operations contractor.

The Mission Need (Critical Decision-0) for the Waste Treatment and Immobilization Plant Project was approved in September 1995, followed by Critical Decision - 1 in September 1996, and Critical

Decision - 2 in August 1998. The Waste Treatment and Immobilization Plant Project was initiated as a privatization contract in 1998, and then was re-bid to a conventional cost reimbursable type contract in December 2000. In May 2002, Critical Decision - 3b - Preliminary Construction - was approved, which authorized basemat concrete and concrete walls to grade. In April 2003, a revised Performance Baseline (Critical Decision - 2) and Full Construction Authorization (Critical Decision - 3c) were formally approved for the Waste Treatment and Immobilization Plant Project. The first concrete placement for the Analytical Laboratory was in July 2004.

3. Baseline and Validation Status

(Fiscal Quarter)

	TEC, PED	TEC, Construction	TEC, Total	OPC Except D&D	OPC, D&D	OPC, Total	TPC
FY 2007	0	267,140	267,140	0	0	0	267,140
FY 2008	0	676,000	676,000	0	0	0	676,000
FY 2009	0	676,000	676,000	0	0	0	676,000
FY 2010	0	790,000	790,000	0	0	0	790,000
FY 2011	0	790,000	790,000	0	0	0	790,000

Note: FY 2007 budget submittal values above did not include the facility costs prior to FY 2006. These prior year costs (FY 2001 - FY 2005, included in Line Item 01-D-416) were added to the FY 2008 budget submittal values to provide the total estimated cost for the facility.

A revised Performance Baseline for the overall Waste Treatment and Immobilization Plant Project was validated and approved on December 22, 2006, with a Total Project Cost of \$12,263,000,000. The estimated Analytical Laboratory portion of the current Total Project Cost is \$790,000,000.

4. Project Description, Justification, and Scope

The Analytical Laboratory is a vital production link that drives waste vitrification process control and waste form qualification for the main production facilities, i.e., Pretreatment, High-Level Waste and Low-Activity Waste facilities. The facility is a four-story building that covers an area about the size of one football field, with a building volume of over 2.5 million cubic feet. Overall construction will include 12,000 cubic yards of concrete, 1,700 tons of structural steel, and 7 miles of piping. The Lab's importance centers on its around-the-clock ability to analyze waste samples from the Pretreatment Facility, as well as from the two vitrification facilities, with its key function being to ensure the final glass product meets all regulatory requirements and standards. Nearly 10,000 waste samples per year will be analyzed in the Analytical Laboratory.

The Laboratory will incorporate features and capabilities necessary to ensure efficient operations including: (1) receipt/handling of Hanford Tank Farm samples for waste feed acceptance, (2) process control, (3) waste form qualification testing, (4) environmental and authorization basis compliance, and (5) limited technology testing. The Laboratory contains eight main areas: (1) administrative areas, (2) 14 radiological laboratories which house fume hoods and related equipment to support low-activity sample analysis activities, (3) 14 hot cells that house equipment necessary for high-activity waste analysis activities, (4) maintenance and decontamination areas that house tools and equipment necessary to support facility maintenance and operations, (5) mechanical and utility areas house equipment that provide ventilation, electricity, laboratory gases, and water supplies, (6) below grade Radioactive Liquid Waste Disposal system cells and pits house vessels and equipment for handling effluents from the processes and operations of the lab, (7) two bulk storage tanks - one tank contains liquid nitrogen and

the other holds liquid argon which supports lab operations, and (8) pressurized helium bottle storage area.

FY 2009 Accomplishments:

Design Activities:

- Continued to move design toward completion, with the following significant achievements:
 - Completed Title II Design and Engineering activities (those activities that would support a bid for construction and procurements had the project been administered in the manner of a design-bid-build project).

Procurement Activities:

- Maintained a backlog of materials supporting construction, with the following significant achievements:
 - Received eight C5 safe change High Efficiency Particulate Air filter housings.
 - Received the mechanical handling hot cell equipment.

Construction Activities:

- Continued installation of piping, hangers, and other commodities, with the following significant achievements:
 - Completed approximately 55 percent of heating ventilation and air conditioning duct and support installation.
 - Completed formwork, rebar, embed, concrete placement for the hot cell north end wall.

Planned FY 2010 Activities:

Design Activities:

- Continue to move design toward completion, with the following significant achievements:
 - Complete mechanical system confirmed calculations and process and instrumentation diagrams.

Procurement Activities:

- Maintain backlog of materials supporting construction, with the following significant achievements:
 - Receive the waste transfer system equipment.
 - Receive autosampler equipment including sample delivery equipment for the hot cell, fume hoods and receipt docking stations.
 - Receive two axial filter housings.

Construction Activities:

- Continue installation of piping, hangers, and other commodities, with the following significant achievements:
 - Complete formwork, reinforcing bar, embeds, and concrete placement for elevated slab over the C5 pit.
 - Complete approximately 90 percent of heating ventilation and air conditioning duct and support installation.

Planned FY 2011 Activities:

Construction Activities:

- Complete approximately 90 percent of bulk piping installation.
- Complete approximately 70 percent of bulk conduit installation.

- Complete installation of Heating Ventilation and Air Conditioning equipment on the second floor, northwest corner.

The following table provides the status for each phase by the end of each fiscal year: accomplished for FY 2009, planned for FY 2010, and proposed for FY 2011.

Phase	FY 2009	FY 2010	FY 2011
Design	79%	85%	86%
Procurement	74%	80%	81%
Construction	60%	69%	79%
Commissioning	7%	8%	8%
Overall ^a	48%	53%	56%

^a The WTP project Design/Engineering total percent complete calculations factor in Research and Testing, Process Engineering, and Environmental & Nuclear Safety costs which are in addition to the five facilities costs.

The project is being conducted in accordance with the project management requirements in DOE O 413.3A, *Program and Project Management for the Acquisition of Capital Assets*, and all appropriate project management requirements have been met.

5. Financial Schedule

(dollars in thousands)

Appropriations	Obligations	Costs
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Total Estimated Cost (TEC)

Construction

FY 2005 ^a	125,948	125,948	116,790
FY 2006	44,552	44,552	25,966
FY 2007	59,000	59,000	62,975
FY 2008	44,590	44,590	54,490
FY 2009	65,000	65,000	60,455
FY 2010	55,000	55,000	36,961
FY 2011	2,500	2,500	21,601
FY 2012	25,000	25,000	25,927
FY 2013	35,000	35,000	35,427
FY 2014	30,000	30,000	35,538
FY 2015	56,000	56,000	58,101
FY 2016	70,000	70,000	63,095
FY 2017	85,000	85,000	78,835
FY 2018	75,000	75,000	86,843
FY 2019	17,410	17,410	23,828
FY 2020	-	-	3,168
Total, Construction	790,000	790,000	790,000

^a The FY2005 line is based on facility costs prior the split of the WTP into the five facilities

The following table provides a breakdown of current and planned spending by design, procurement, construction, and commissioning for the next few fiscal years (in thousand of dollars):

Phase	FY 2009	FY 2010	FY 2011
Design	17,735	7,754	7,840
Procurement	11,180	10,708	1,384
Construction	28,367	15,955	10,259
Commissioning	3,173	2,544	2,118
Total	60,455	36,961	21,601

6. Details of Project Cost Estimate

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline ^c
Total Estimated Cost (TEC)			
Design (PED)			
Total, PED	N/A	N/A	N/A
Construction			
Site Preparation	n/a	n/a	n/a
Engineering/Design	116,118	108,000	n/a
Equipment/Procurement ^a	109,274	106,500	n/a
Facility Construction ^b	148,744	162,000	426,000
Commissioning ^c	249,389	243,500	n/a
Technical Support/Transition	14,549	19,300	n/a
Contingency/Fee ^d	151,926	150,700	n/a
Total, Construction	790,000	790,000	426,000
Total, TEC	790,000	790,000	426,000
Contingency, TEC	[151,926]	[150,700]	n/a
Other Project Cost (OPC)	N/A	N/A	N/A
Contingency, OPC			
Total, TPC	790,000	790,000	426,000
Total, Contingency	[151,926]	[150,700]	n/a

Notes:

^a Equipment/Procurement dollars represent of costs of plant equipment, plant material, and Acquisition Services.

^b Facility Construction dollars represent construction costs through system turnover.

^c Commissioning dollars represent the cost of Start-up, Cold Commissioning, and Hot Commissioning.

^dContingency/Fee represents the contractor's Management Reserve, Fee, and DOE Project Contingency.

^e The value listed in the "Original Validated Baseline - Facility Construction" is a total number for all the values that would normally appear in this column. A breakout for the March 2003 Baseline is not available, as until FY 2006 the facilities were not separated but totaled for the whole project, and the current breakout methodology was implemented in FY 2008.

7. Funding Profile History

Request		(\$K)								
		Prior Years	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	Outyears	Total
FY 2008 Performance Baseline	TEC	339,090	40,000	20,000	39,000	20,000	20,000	25,000	172,910	676,000
	OPC	0	0	0	0	0	0	0	0	0
	TPC	339,090	40,000	20,000	39,000	20,000	20,000	25,000	172,910	676,000
FY 2009	TEC	339,090	60,000	30,000	45,000	20,000	20,000	25,000	136,910	676,000
	OPC	0	0	0	0	0	0	0	0	0
	TPC	339,090	60,000	30,000	45,000	20,000	20,000	25,000	136,910	676,000
FY 2010	TEC	339,090	55,000	5,000	10,000	35,000	35,000	45,000	265,910	790,000
	OPC	0	0	0	0	0	0	0	0	0
	TPC	339,090	55,000	5,000	10,000	35,000	35,000	45,000	265,910	790,000
FY 2011	TEC	339,090	55,000	2,500	25,000	35,000	30,000	35,000	268,410	790,000
	OPC	0	0	0	0	0	0	0	0	0
	TPC	339,090	55,000	2,500	25,000	35,000	30,000	35,000	268,410	790,000

8. Related Operations and Maintenance Funding Requirements

See the discussion in the 01-D-416, Waste Treatment and Immobilization Plant project level data sheet.

9. Required D&D Information

See the discussion in the 01-D-416, Waste Treatment and Immobilization Plant project level data sheet.

10. Acquisition Approach

See the discussion in the 01-D-416, Waste Treatment and Immobilization Plant project level data sheet.

The following facility milestone dates are based on the contractor's December 2008 Internal Replan and revised contract signed in January 2009.

Analytical Laboratory Milestones

Milestone Title	Milestones - January 2009
Start Construction	August 2, 2004 A
Complete Design	September 30, 2012
Substantially Complete Construction*	December 31, 2012
Complete Construction	June 30, 2014
A=Actual date construction started which followed approval of CD-3C	
* Contract Milestones-January 2009 Contract	

01-D-16C, Balance of Facilities, Hanford, WA

1. Significant Changes

The most recent DOE Order 413.3A approved Critical Decision for the overall Waste Treatment and Immobilization Plant Project is Critical Decision-2 and Critical Decision-3c, approved on 4/21/2003, with a Total Project Cost of \$5,781,000,000 and Critical Decision-4 of July 2011. The latest approved Baseline Change was on December 22, 2006 with a Total Project Cost of \$12,263,000,000 and Critical Decision-4 of November 2019.

This Construction Project Data Sheet is an update of the FY 2010 Construction Project Data Sheet. The estimated cost, schedule dates, and accomplishments included with this Construction Project Data Sheet are based on March 2009 project data.

The current Total Project Cost for the Balance of Facilities is \$1,210,000,000. Facility milestone dates are consistent with the revised January 2009 contract.

A Federal Sub-Project Director with a current level II certification has been assigned to the Balance of Facilities per the DOE Project Management Career Development Program.

2. Design, Construction, and D&D Schedule

(fiscal quarter or date)

	CD-0	CD-1	PED Complete	CD-2	CD-3	CD-4	D&D Start	D&D Complete
FY 2007	4Q FY1995	4Q FY1996	4Q FY2007	3Q FY2003	3Q FY2003	3Q FY2008	N/A	N/A
FY 2008	4Q FY1995	4Q FY1996	4Q FY2009	3Q FY2003	3Q FY2003	2Q FY2012	N/A	N/A
FY 2009	4Q FY1995	4Q FY1996	4Q FY2011	3Q FY2003	3Q FY2003	1Q FY2014	N/A	N/A
FY 2010	4Q FY1995	4Q FY1996	1Q FY2015	3Q FY2003	3Q FY2003	1Q FY2020	N/A	N/A
FY 2011	4Q FY1995	4Q FY1996	1Q FY2015	3Q FY2003	3Q FY2003	1Q FY2020	N/A	N/A

CD-0 – Approve Mission Need

CD-1 – Approve Alternative Selection and Cost Range

CD-2 – Approve Performance Baseline

CD-3 – Approve Start of Construction

CD-4 – Approve Start of Operations or Project Closeout

D&D Start – Start of Demolition & Decontamination (D&D) work

D&D Complete – Completion of D&D work

Notes:

1. The FY 2009 Budget Request date for 'PED Complete' is based on the June 2007 Execution Revision schedule.
2. The FY 2008 Budget Request date for 'CD-4' of 2Q FY 2012 represented the completion of physical construction of the facility. In the FY 2009 Budget Request, the 'CD-4' date represents the completion of construction, start-up, commissioning, and the transfer of the Balance of Facilities to the operations contractor (based on the Early LAW concept).
3. The FY 2010 Budget Request 'PED Complete' and 'CD-4' dates are from the revised contract signed January 2009, and the 'CD-4' date now represents the completion of construction, start-up, commissioning and the transfer of the WTP Project to the operations contractor.

The Mission Need (Critical Decision - 0) for the Waste Treatment and Immobilization Plant Project was approved in September 1995, followed by Critical Decision - 1 in September 1996, and Critical Decision - 2 in August 1998. The Waste Treatment and Immobilization Plant Project was initiated as a privatization contract in 1998, and then was re-bid to a conventional cost reimbursable type contract in December 2000. In October 2001, Critical Decision - 3a - Limited Construction - was approved, which authorized site work and utilities. In April 2003, a revised Performance Baseline (Critical Decision - 2) and Full Construction Authorization (Critical Decision - 3c) were formally approved for the Waste Treatment and Immobilization Plant Project.

3. Baseline and Validation Status

(Fiscal Quarter)

	TEC, PED	TEC, Construction	TEC, Total	OPC Except D&D	OPC, D&D	OPC, Total	TPC
FY 2007	0	596,741	596,741	0	0	0	596,741
FY 2008	0	1,137,000	1,137,000	0	0	0	1,137,000
FY 2009	0	1,137,000	1,137,000	0	0	0	1,137,000
FY 2010	0	1,210,000	1,210,000	0	0	0	1,210,000
FY 2011	0	1,210,000	1,210,000	0	0	0	1,210,000

Note: FY 2007 budget submittal values above did not include the facility costs prior to FY 2006. These prior year costs (FY 2001 - FY 2005, included in Line Item 01-D-416) were added to the FY 2008 budget submittal values to provide the total estimated cost for the facility.

A revised Performance Baseline for the overall Waste Treatment and Immobilization Plant Project was validated and approved on December 22, 2006, with a Total Project Cost of \$12,263,000,000. The estimated Balance of Facilities portion of the current Total Project Cost is \$1,210,000,000.

4. Project Description, Justification, and Scope

The Balance of Facilities comprises 20 support buildings (165,000 square feet in footprint) and approximately 100 systems across the 65-acre plant site, providing interconnecting utilities and support to the Pretreatment, High-Level Waste, and Low-Activity Waste facilities and to the Analytical Laboratory. The Balance of Facility construction entails 900 tons of structural steel, 17,000 cubic yards of concrete, 30 miles of piping, 110 miles of electrical cable, and over 2.3 million cubic yards of earthwork. While not directly involved with the processing or vitrification of radiological material, these facilities make up the overall services infrastructure essential to operation of the plant.

The Balance of Facilities infrastructure and facilities are comprised of the following groups: power, steam, water, air, process support, waste facilities, and miscellaneous support buildings. The power group consists of three switchgear buildings and two diesel generator facilities. The steam group consists of a steam plant and a fuel oil facility. The water group consists of cooling towers, water treatment facility, chiller/compressor facility, and the firewater facility. The air group is made up of the compressors. The process support group consists of the glass former storage facility, wet chemical storage facility, and the anhydrous ammonia storage facility. The waste facilities group consists of the spent melter staging pad, failed melter storage facility, and the non-dangerous, non-radioactive effluent facility. The miscellaneous support buildings group includes the administration building, simulator facility, warehouse, and site infrastructure (roads, grading, lights, sanitary waste, storm drains, etc.).

FY 2009 Accomplishments:

Design Activities:

- Continued to move design toward completion, with the following significant achievements:
 - Issued for construction the building foundation design for Glass Former Control Building.
 - Issued fabrication piping isometrics and pipe support drawings for Anhydrous Ammonia Facility.

Procurement Activities:

- Maintained backlog of materials supporting construction, with the following significant achievements:
 - Awarded the purchase order for the anhydrous ammonia vaporizers skids.

Construction Activities:

- Continued installation of piping, hangers, and other commodities, with the following significant achievements:

The following table provides design and site construction status for the overall Balance of Facilities grouping; including, progress specific to individual facilities and work that supports multiple facilities. The "Balance of Facilities common scope" listed here comprises mostly design work that is common to the facilities; "site work" consists of the general earthwork and utilities across the Waste Treatment and Immobilization Plant construction site and between facilities, and is not associated with a particular facility.

Facility	Engineering % Complete Nov 09	Construction % Complete Nov 09	Scheduled Completion Date
Guard House Facility	100.0%	100.0%	Complete
Erected Tanks – Process/Potable	100.0%	100.0%	Complete
Maintenance Shop	100.0%	100.0%	Complete
Warehouse Building	100.0%	100.0%	Complete
Fire Water Pump House Facility	100.0%	100.0%	Complete
Steam Plant Facility	100.0%	99.1%	Oct 2012
Balance of Facilities Switchgear Building	97.1%	89.4%	Jul 2010
Cooling Tower Facility	100.0%	99.5%	Mar 2010
Water Treatment Building	100.0%	79.6%	Jul 2010
Fuel Oil Facility	100.0%	95.9%	Apr 2010
Anhydrous Ammonia	90.2%	0.5%	Dec 2012
Chiller Compressor Plant	99.7%	93.6%	Mar 2012
Non-Dangerous, Non-Radioactive Effluent Facility	98.4%	86.6%	Apr 2012
Glass Former Storage Facility	96.9%	33.5%	Aug 2012
Failed Melter Storage Facility	14.1%	2.4%	Jun 2013
Switchgear Building	98.1%	89.2%	Jun 2011
Administration Building	23.9%	0.0%	Mar 2014
Simulator Facility	100.0%	77.4%	Mar 2014
Wet Chemical Storage Facility	68.4%	0.0%	Sep 2014
Diesel Generators Facility	54.1%	0.0%	Oct 2015

Note: The percentages of completion have been adjusted to reflect a replan of the baseline, which may have resulted in lower percentages of completions than previously reported.

Planned FY 2010 Activities:

Design Activities:

- Continue to move design toward completion, with the following significant achievements:
 - Complete Title II mechanical handling design (those activities that would support a bid for construction and procurements had the project been administered in the manner of a design-bid-build project).
 - Issue for construction slab and wall foundation design for wet chemical storage facility.

Procurement Activities:

- Maintain backlog of materials supporting construction, with the following significant achievements:
 - Deliver two leak detection boxes.
 - Deliver two diesel fuel tanks.

Construction Activities:

- Complete construction of the Water Treatment Building.
- Complete installation of the cathodic protection system (scope to support the early temporary system energization for underground pipe protection).

Planned FY 2011 Activities:

Procurement Activities:

- Award purchase order on 4.16kV emergency diesel generator.
- Receive and accept the anhydrous ammonia system.

The following table provides the status for each phase by the end of each fiscal year: accomplished for FY 2009, planned for FY 2010, and proposed for FY 2011.

Phase	FY 2009	FY 2010	FY 2011
Design	77%	85%	90%
Procurement	42%	44%	54%
Construction	64%	68%	72%
Commissioning	11%	12%	13%
Overall ^a	52%	55%	59%

^a The WTP project Design/Engineering total percent complete calculations factor in Research and Testing, Process Engineering, and Environmental & Nuclear Safety costs which are in addition to the five facilities costs.

The project is being conducted in accordance with the project management requirements in DOE O 413.3A, *Program and Project Management for the Acquisition of Capital Assets*, and all appropriate project management requirements have been met.

5. Financial Schedule

(dollars in thousands)

Appropriations	Obligations	Costs
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Total Estimated Cost (TEC)

Construction

FY 2005 ^a	330,148	330,148	330,080
FY 2006	64,352	64,352	41,610
FY 2007 ^b	57,000	51,300	54,573
FY 2008 ^c	71,345	77,045	63,198
FY 2009	75,000	75,000	55,531
FY 2010	50,000	50,000	42,331
FY 2011	5,000	5,000	51,198
FY 2012	55,000	55,000	55,087
FY 2013	70,000	70,000	68,455
FY 2014	105,000	105,000	112,232
FY 2015	82,500	82,500	90,869
FY 2016	90,000	90,000	83,573
FY 2017	65,000	65,000	57,740
FY 2018	55,000	55,000	62,192
FY 2019	34,655	34,655	32,099
FY 2020	-	-	9,232
Total, Construction	1,210,000	1,210,000	1,210,000

^a The prior year appropriations and obligation have been updated to reflect a more current estimate of the anticipated utilization of the non-facility specific carryover funding remaining in the WTP line item 01-D-416. The FY 2005 line is based on facility costs prior the split of the WTP into the five facilities.

^b 10 percent of the FY 2007 Appropriation has been held back as a result of not achieving Secretarial certification of the contractor's Earned Value Management System by September 30, 2007. The certification was received in FY 2008, at which time the \$69,000,000 will be obligated to the project. Balance of Facilities portion of the hold-back is \$5,700,000.

^c FY 2008 Enacted Appropriations reflect a reduction of \$1,301,000 due to the FY 2008 Government-wide Rescission of 0.91 percent.

The following table provides a breakdown of planned spending by design, procurement, construction, and commissioning for the next few fiscal years (in thousand of dollars):

Phase	FY 2009	FY 2010	FY 2011
Design	17,149	10,748	10,122
Procurement	10,372	4,431	14,752
Construction	24,833	25,550	21,757
Commissioning	3,178	1,602	4,568
Total	55,531	42,331	51,199

6. Details of Project Cost Estimate

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline ^c
Total Estimated Cost (TEC)			
Design (PED)			
Total, PED	N/A	N/A	N/A
Construction			
Site Preparation	n/a	n/a	n/a
Engineering/Design	165,828	171,796	n/a
Equipment/Procurement ^a	149,494	151,508	n/a
Facility Construction ^b	441,970	433,681	610,000
Commissioning ^c	233,979	240,015	n/a
Technical Support/Transition	16,762	21,200	n/a
Contingency/Fee ^d	201,967	191,800	n/a
Total, Construction	1,210,000	1,210,000	610,000
Total, TEC	1,210,000	1,210,000	610,000
Contingency, TEC	[201,967]	[191,800]	n/a
Other Project Cost (OPC)	N/A	N/A	N/A
Contingency, OPC			
Total, TPC	1,210,000	1,210,000	610,000
Total, Contingency	[201,967]	[191,800]	n/a

Notes:

^a Equipment/Procurement dollars represent of costs of plant equipment, plant material, and Acquisition Services.

^b Facility Construction dollars represent construction costs through system turnover.

^c Commissioning dollars represent the cost of Start-up, Cold Commissioning, and Hot Commissioning.

^d Contingency/Fee represents the contractor's Management Reserve, Fee, and DOE Project Contingency.

^e The value listed in the "Original Validated Baseline - Facility Construction" is a total number for all the values that would normally appear in this column. A breakout for the March 2003 Baseline is not available, as until FY 2006 the facilities were not separated but totaled for the whole project, and the current breakout methodology was implemented in FY 2008.

7. Funding Profile History

Request		(\$K)								Total
		Prior Years	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	Outyears	
FY 2008 Performance Baseline	TEC	597,845	40,000	20,000	39,000	50,000	45,000	35,000	310,155	1,137,000
	OPC	0	0	0	0	0	0	0	0	0
	TPC	597,845	40,000	20,000	39,000	50,000	45,000	35,000	310,155	1,137,000
FY 2009	TEC	597,845	110,000	65,000	60,000	50,000	45,000	35,000	174,155	1,137,000
	OPC	0	0	0	0	0	0	0	0	0
	TPC	597,845	110,000	65,000	60,000	50,000	45,000	35,000	174,155	1,137,000
FY 2010	TEC	597,845	50,000	5,000	50,000	75,000	105,000	90,000	237,155	1,210,000
	OPC	0	0	0	0	0	0	0	0	0
	TPC	597,845	50,000	5,000	50,000	75,000	105,000	90,000	237,155	1,210,000
FY 2011	TEC	597,845	50,000	5,000	55,000	70,000	105,000	82,500	244,655	1,210,000
	OPC	0	0	0	0	0	0	0	0	0
	TPC	597,845	50,000	5,000	55,000	70,000	105,000	82,500	244,655	1,210,000

8. Related Operations and Maintenance Funding Requirements

See the discussion in the 01-D-416, Waste Treatment and Immobilization Plant project level data sheet.

9. Required D&D Information

See the discussion in the 01-D-416, Waste Treatment and Immobilization Plant project level data sheet.

10. Acquisition Approach

See the discussion in the 01-D-416, Waste Treatment and Immobilization Plant Project level data sheet.

The following facility milestone dates are based on the contractor's December 2008 Internal Replan and revised contract signed in January 2009.

Balance of Facilities Milestones

Milestone Title	Milestones - January 2009
Start Construction (Site Work)	November 15, 2001 A
Complete Construction Water Treatment Building*	July 27, 2010
Complete Chiller Compressor Plant Construction*	March 22, 2012
Design Complete	December 2014
Set two Emergency Diesel Generators and Complete Site Energization*	May 29, 2015
Complete Construction	January 2017
A=Actual date construction started which followed approval of CD-3B	
* Contract Milestones-January 2009 Contract	

01-D-16D, High-Level Waste Facility, Hanford, WA

1. Significant Changes

The most recent DOE Order 413.3A approved Critical Decision for the overall Waste Treatment and Immobilization Plant Project is Critical Decision-2 and Critical Decision-3c, approved on 4/21/2003, with a Total Project Cost of \$5,781,000,000 and Critical Decision-4 of July 2011. The latest approved Baseline Change was on December 22, 2006 with a Total Project Cost of \$12,263,000,000 and Critical Decision-4 of November 2019.

This Construction Project Data Sheet is an update of the FY 2010 Construction Project Data Sheet. The estimated cost, schedule dates, and accomplishments included with this Construction Project Data Sheet are based on March 2009 project data.

The current Total Project Cost for the High-Level Waste Facility is \$3,240,000,000. Facility milestone dates are consistent with the revised January 2009 contract.

A Federal Project Director with interim certification level III has been assigned to the Waste Treatment and Immobilization Plant Project.

2. Design, Construction, and D&D Schedule

(fiscal quarter or date)

	CD-0	CD-1	PED Complete	CD-2	CD-3	CD-4	D&D Start	D&D Complete
FY 2007	4Q FY1995	4Q FY1996	4Q FY2007	3Q FY2003	3Q FY2003	3Q FY2008	N/A	N/A
FY 2008	4Q FY1995	4Q FY1996	4Q FY2010	3Q FY2003	3Q FY2003	2Q FY2017	N/A	N/A
FY 2009	4Q FY1995	4Q FY1996	2Q FY2013	3Q FY2003	3Q FY2003	1Q FY2020	N/A	N/A
FY 2010	4Q FY1995	4Q FY1996	1Q FY2016	3Q FY2003	3Q FY2003	1Q FY2020	N/A	N/A
FY 2011	4Q FY1995	4Q FY1996	1Q FY2016	3Q FY2003	3Q FY2003	1Q FY2020	N/A	N/A

CD-0 – Approve Mission Need

CD-1 – Approve Alternative Selection and Cost Range

CD-2 – Approve Performance Baseline

CD-3 – Approve Start of Construction

CD-4 – Approve Start of Operations or Project Closeout

D&D Start – Start of Demolition & Decontamination (D&D) work

D&D Complete – Completion of D&D work

Notes:

1. The FY 2009 Budget Request date for 'PED Complete' is based on the June 2007 Execution Revision schedule.
2. The FY 2008 Budget Request 'CD-3' date of 3Q FY 2002 represented the start of physical construction of the facility. The FY 2009 Budget Request 'CD-3' date represents the CD-3c date approval, which authorized full construction. Note that CD - 3a and CD - 3b were approved prior to allow for pre-construction activities.
3. The FY 2008 Budget Request date for 'CD-4' of 2Q FY 2017 represented the completion of physical construction of the facility. In the FY 2009 Budget Request, the 'CD-4' completion date represents the completion of construction, start-up, commissioning, and the transfer of the WTP Project to the operations contractor.
4. The FY 2010 Budget Request 'PED Complete' date is based on the revised contract signed in January 2009.

The Mission Need (Critical Decision-0) for the Waste Treatment and Immobilization Plant Project was approved in September 1995, followed by Critical Decision - 1 in September 1996, and Critical

Decision - 2 in August 1998. The Waste Treatment and Immobilization Plant Project was initiated as a privatization contract in 1998, and then was re-bid to a conventional cost reimbursable type contract in December 2000. In May 2002, Critical Decision - 3b - Preliminary Construction - was approved, which authorized basemat concrete and concrete walls to grade, and allowed the first concrete placement for the High-Level Waste Facility in July 2002. In April 2003, a revised Performance Measurement Baseline (Critical Decision - 2) and Full Construction Authorization (Critical Decision - 3c) were formally approved for the Waste Treatment and Immobilization Plant Project.

3. Baseline and Validation Status

(Fiscal Quarter)

	TEC, PED	TEC, Construction	TEC, Total	OPC Except D&D	OPC, D&D	OPC, Total	TPC
FY 2007	0	1,512,664	1,512,664	0	0	0	1,512,664
FY 2008	0	3,308,000	3,308,000	0	0	0	3,308,000
FY 2009	0	3,308,000	3,308,000	0	0	0	3,308,000
FY 2010	0	3,240,000	3,240,000	0	0	0	3,240,000
FY 2011	0	3,240,000	3,240,000	0	0	0	3,240,000

Note: FY 2007 budget submittal values above did not include the estimated facility costs prior to FY 2006. These prior year costs (FY 2001 - FY 2005, included in Line Item 01-D-416) were added to the FY 2008 budget submittal values to provide the total estimated cost for the facility.

A revised Performance Measurement Baseline for the overall Waste Treatment Plant project was validated and approved on December 22, 2006, with a Total Project Cost of \$12,263,000,000. The estimated High-Level Waste Facility portion of the current Total Project Cost is \$3,240,000,000.

4. Project Description, Justification, and Scope

The High-Level Waste Facility will process the most radioactive and dangerous tank waste at Hanford. The six-story facility covers an area 275 feet wide by 440 feet long and 95 feet tall, with a total building volume of 8.6 million cubic feet. Overall construction will include 11,600 tons of structural steel, 88,000 cubic yards of concrete, 576 tons of heating and ventilation ductwork, 30 miles of piping, and 293 miles of electrical cable.

The High-Level Waste Facility will receive the high-level waste fraction from the Pretreatment Facility. This facility contains two melters for vitrifying the high-level waste fraction into glass. The two melters have a combined design capacity (name plate) and combined treatment capacity (at 70 percent of plant availability) of 6.0 metric tons and 4.2 metric tons of glass per day, respectively. The vitrified waste is poured into stainless steel canisters that are 2 feet in diameter by 14.5 feet tall, and weigh more than 4 tons each. The canisters will be temporarily stored at the Hanford Site before eventually being shipped to a federal geological repository for disposal.

FY 2009 Accomplishments:

Design Activities:

- Released the remaining concrete embed drawings for fabrication to support construction of the second to third floor walls of the facility.
- Issued the High Level Waste Form Compliance Plan and Waste Form Qualification Report.

- Completed final design of the High Level Waste Melter Assembly to incorporate changes resulting from the more conservative Revised Ground Motion (seismic) criteria.
- Completed Research and Technology simulant testing on the redesigned auto-sampler system.

Procurement Activities:

- Accelerated fabrication/delivery of concrete embedments to support near-term construction needs and increase backlog materials to support construction for the next 6-months
- Accepted delivery of key materials and equipment, including the High Level Waste Offgas system High-Efficiency Mist Eliminators and second to third floor concrete embedments and pipe connection assemblies
- Completed fabrication, testing, delivery and receipt of Melter Cave #1 and #2 shield doors
- Awarded the contract for the vertical shield door recovery assembly and the Thermal Catalytic Oxidizer, a major component of the High Level Waste process Offgas System.

Construction Activities:

- Completed forming, rebar, and placement of concrete for 30 walls and 16 slabs on the first to second floor for a total of 5,480 cubic yards of concrete placed
- Continued civil build out; and installation of piping, hangers, heating, ventilation, and air-conditioning duct, and other commodities
- Installed major plant structural components including:
 - Canister transfer cart maintenance crane steel/rails
 - Melter #2 pour tunnel canister transfer cart maintenance room crane and shield door
 - Filter cave crane maintenance shield door frame assembly.

Planned FY 2010 Activities:

Design Activities:

- Complete Heating, Ventilation and Air Conditioning Title II design
- Complete Autosampler system design
- Issue civil engineering drawings for slabs at the fourth floor elevation
- Freeze the electrical single-line design.

Procurement Activities:

- Complete fabrication and delivery of the first High Level Waste Melter Assembly
- Complete fabrication, testing, delivery and acceptance of Melter cave #1 crane maintenance shield door
- Receive and accept two Melter feed vessel agitators
- Increase backlog of materials supporting construction to greater than 6-months to increase construction efficiency.

Construction Activities:

- Complete forming, rebar, and placement of concrete for 25 walls and 11 slabs on the first to third floors for a total of 4,720 cubic yards of concrete placed
- Complete erection of structural steel between the first and second floors
- Complete setting of six shield doors for Melter caves #1 and #2
- Continue civil build out; and installation of piping, hangers, heating, ventilation, and air-conditioning duct, and other commodities at the basement, first and second floors in accordance with the master schedule

- Complete prerequisite civil/structural construction to release the installation of pipe hangers at the first floor elevation.

Planned FY 2011 Activities:

Design Activities:

- Complete Title II Civil Engineering Design
- Complete Architectural Design.

Procurement Activities:

- Maintain backlog of materials supporting construction to greater than 6-months to increase construction efficiency
- Receive the High Efficiency Particulate Air filter housings and dampers for the primary ventilation system
- Receive a Plant Wash Vessel
- Receive High Level Waste Melter Offgas Treatment Process System fans.

Construction Activities:

- Complete forming, rebar, and placement of concrete for 50 walls and slabs on the second to third floors for a total of 7,000 cubic yards of concrete placed
- Continue civil build out; and installation of piping, hangers, heating, ventilation, and air-conditioning duct, and other commodities
- Install High Efficiency Particulate Air filter housings in the Filter Cave
- Complete installation of the stainless steel liners in Pour Tunnels #1 and #2.

The following table provides the status for each phase by the end of each fiscal year: accomplished for FY 2009, planned for FY 2010, and proposed for FY 2011.

Phase	FY 2009	FY 2010	FY 2011
Design	81%	87%	91%
Procurement	53%	67%	85%
Construction	26%	33%	43%
Commissioning	2%	3%	4%
Overall ^a	49%	57%	65%

^aThe WTP project Design/Engineering total percent complete calculations factor in Research and Testing, Process Engineering, and Environmental & Nuclear Safety costs which are in addition to the five facilities costs.

The project is being conducted in accordance with the project management requirements in DOE Order 413.3A, *Program and Project Management for the Acquisition of Capital Assets*, and all appropriate project management requirements have been met.

5. Financial Schedule

(dollars in thousands)

Appropriations	Obligations	Costs
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Total Estimated Cost (TEC)

Construction

FY 2005 ^a	821,536	821,536	704,700
FY 2006	102,964	102,964	121,991
FY 2007 ^b	177,000	154,300	115,124
FY 2008 ^c	175,389	198,089	176,302
FY 2009	125,000	125,000	202,998
FY 2010	160,000	160,000	239,707
FY 2011	260,178	260,178	197,090
FY 2012	230,000	230,000	214,420
FY 2013	155,000	155,000	172,211
FY 2014	135,000	135,000	142,932
FY 2015	160,000	160,000	165,076
FY 2016	190,000	190,000	181,464
FY 2017	215,000	215,000	203,967
FY 2018	165,000	165,000	208,137
FY 2019	167,933	167,933	144,584
FY 2020	-	-	49,297
Total, Construction	3,240,000	3,240,000	3,240,000

^aThe prior year appropriations and obligation have been updated to reflect a more current estimate of the anticipated utilization of the non-facility specific carryover funding remaining in the WTP line item 01-D-416. The FY 2005 line is based on facility costs prior the split of the WTP into the five facilities.

^b10 percent of the FY 2007 Appropriation has been held back as a result of not achieving Secretarial certification of the contractor's Earned Value Management System by September 30, 2007. The certification was received in FY 2008, at which time the \$69,000,000 was obligated to the project. High-Level Waste's portion of the hold-back is \$22,700,000.

^cFY 2008 Enacted Appropriations reflect a reduction of \$1,611,000 due to the FY 2008 Government-wide Rescission of 0.91 percent.

The following table provides a breakdown of current and planned spending by design, procurement, construction, and commissioning for the next few fiscal years (in thousand of dollars):

Phase	FY 2009	FY 2010	FY 2011
Design	62,447	42,873	30,963
Procurement	51,572	104,809	64,806
Construction	85,047	85,226	92,409
Commissioning	3,932	6,800	8,912
Total	202,998	239,708	197,090

6. Details of Project Cost Estimate

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline ^c
Total Estimated Cost (TEC)			
Design (PED)			
Total, PED	N/A	N/A	N/A
Construction			
Site Preparation	n/a	n/a	n/a
Engineering/Design	676,441	671,562	n/a
Equipment/Procurement ^a	650,335	686,037	n/a
Facility Construction ^b	949,174	937,015	1,650,000
Commissioning ^c	272,272	248,386	n/a
Technical Support/Transition	50,731	53,000	n/a
Contingency/Fee ^d	641,047	644,000	n/a
Total, Construction	3,240,000	3,240,000	1,650,000
Total, TEC	3,240,000	3,240,000	1,650,000
Contingency, TEC	[641,047]	[644,000]	n/a
Other Project Cost (OPC)	N/A	N/A	N/A
Contingency, OPC			
Total, TPC	3,240,000	3,240,000	1,650,000
Total, Contingency	[641,047]	[644,000]	n/a

Notes:

^aEquipment/Procurement dollars represent of costs of plant equipment, plant material, and Acquisition Services.

^bFacility Construction dollars represent construction costs through system turnover.

^cCommissioning dollars represent the cost of Start-up, Cold Commissioning, and Hot Commissioning.

^dContingency/Fee represents the contractor's Management Reserve, Fee, and DOE Project Contingency.

^eThe value listed in the "Original Validated Baseline - Facility Construction" is a total number for all the values that would normally appear in this column. A breakout for the March 2003 Baseline is not available, as until FY 2006 the facilities were not separated but totaled for the whole project, and the current breakout methodology was implemented in FY 2008.

7. Funding Profile History

Request		(\$K)								
		Prior Years	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	Outyears	Total
FY 2008 Performance	TEC	1,401,889	175,000	180,000	182,000	210,000	255,000	280,000	624,111	3,308,000
	OPC	0	0	0	0	0	0	0	0	0
Baseline	TPC	1,401,889	175,000	180,000	182,000	210,000	255,000	280,000	624,111	3,308,000
FY 2009	TEC	1,401,889	120,000	140,000	180,000	210,000	260,500	280,000	715,611	3,308,000
	OPC	0	0	0	0	0	0	0	0	0
	TPC	1,401,889	120,000	140,000	180,000	210,000	260,500	280,000	715,611	3,308,000
FY 2010	TEC	1,401,889	160,000	240,000	220,000	170,000	140,000	170,000	738,111	3,240,000
	OPC	0	0	0	0	0	0	0	0	0
	TPC	1,401,889	160,000	240,000	220,000	170,000	140,000	170,000	738,111	3,240,000
FY 2011	TEC	1,401,889	160,000	260,178	230,000	155,000	135,000	160,000	737,933	3,240,000
	OPC	0	0	0	0	0	0	0	0	0
	TPC	1,401,889	160,000	260,178	230,000	155,000	135,000	160,000	737,933	3,240,000

8. Related Operations and Maintenance Funding Requirements

See the discussion in the 01-D-416, Waste Treatment and Immobilization Plant project level data sheet.

9. Required D&D Information

See the discussion in the 01-D-416, Waste Treatment and Immobilization Plant project level data sheet.

10. Acquisition Approach

See the discussion in the 01-D-416, Waste Treatment and Immobilization Plant project level data sheet. The following facility milestone dates are based on the December 2008 Internal Re-plan and revised contract signed in January 2009.

High-Level Waste Facility Milestones

Milestone Title	Milestones - January 2009
Construction	July 10, 2002 A
Complete Design	November 30, 2015
Complete Construction	September 30, 2016
Start Cold Commissioning*	June 30, 2018
Complete Hot Commissioning*	July 30, 2019
A=Actual date construction started which followed approval of CD-3B	
* Contract Milestones-January 2009 Contract	

01-D-16E, Pretreatment Facility, Hanford, WA

1. Significant Changes

The most recent DOE Order 413.3A approved Critical Decision for the overall Waste Treatment and Immobilization Plant Project is Critical Decision-2 and Critical Decision-3c, approved on 4/21/2003, with a Total Project Cost of \$5,781,000,000 and Critical Decision-4 of July 2011. The latest approved Baseline Change was on December 22, 2006 with a Total Project Cost of \$12,263,000,000 and Critical Decision-4 of November 2019.

This Construction Project Data Sheet is an update of the FY 2010 Construction Project Data Sheet. The estimated cost, schedule dates, and accomplishments included with this Construction Project Data Sheet are based on March 2009 project data.

The current Total Project Cost for the Pretreatment Facility is \$4,939,000,000. Facility milestone dates are consistent with the revised January 2009 contract.

A Federal Sub-Project Director with a current level III certification has been assigned to the Pretreatment Facility, per the DOE Project Management Career Development Program.

2. Design, Construction, and D&D Schedule

(fiscal quarter or date)

	CD-0	CD-1	PED Complete	CD-2	CD-3	CD-4	D&D Start	D&D Complete
FY 2007	4Q FY1995	4Q FY1996	4Q FY2007	3Q FY2003	3Q FY2003	3Q FY2008	N/A	N/A
FY 2008	4Q FY1995	4Q FY1996	3Q FY2013	3Q FY2003	3Q FY2003	2Q FY2017	N/A	N/A
FY 2009	4Q FY1995	4Q FY1996	1Q FY2013	3Q FY2003	3Q FY2003	1Q FY2020	N/A	N/A
FY 2010	4Q FY1995	4Q FY1996	4Q FY2015	3Q FY2003	3Q FY2003	1Q FY2020	N/A	N/A
FY 2011	4Q FY1995	4Q FY1996	4Q FY2015	3Q FY2003	3Q FY2003	1Q FY2020	N/A	N/A

CD-0 – Approve Mission Need

CD-1 – Approve Alternative Selection and Cost Range

CD-2 – Approve Performance Baseline

CD-3 – Approve Start of Construction

CD-4 – Approve Start of Operations or Project Closeout

D&D Start – Start of Demolition & Decontamination (D&D) work

D&D Complete – Completion of D&D work

Notes:

- 1) The FY 2009 Budget Request date for ‘PED Complete’ was based on the June 2007 Execution Revision schedule.
- 2) The FY 2008 Budget Request ‘CD-3’ date of 3Q FY 2002 represented the start of physical construction of the facility. The FY 2009 Budget Request ‘CD-3’ date represents the CD - 3c date approval, which authorized full construction. Note that CD - 3a and CD - 3b were approved prior to allow for pre-construction activities.
- 3) The FY 2008 Budget Request date for ‘CD-4’ of 2Q FY 2017 represented the completion of physical construction of the facility. In the FY 2009 Budget Request the ‘CD-4’ completion date of 1Q FY 2020 represents the completion of construction, start-up, commissioning and the transfer of the facility to the operations contractor.

The Mission Need (Critical Decision - 0) for the Waste Treatment and Immobilization Plant Project was

approved in September 1995, followed by Critical Decision - 1 in September 2006, and Critical Decision - 2 in August 1998. The Waste Treatment and Immobilization Plant Project was initiated as a privatization contract in 1998, and then was re-bid to a conventional cost reimbursable type contract in December 2000. In May 2002, Critical Decision - 3b - Preliminary Construction - was approved, which authorized basemat concrete and concrete walls to grade, and allowed the first concrete placement for the Pretreatment Facility in November 2002. In April 2003, a revised Performance Baseline (Critical Decision - 2) and Full Construction Authorization (Critical Decision - 3c) were formally approved for the Waste Treatment and Immobilization Plant Project.

3. Baseline and Validation Status

(Fiscal Quarter)

	TEC, PED	TEC, Construction	TEC, Total	OPC Except D&D	OPC, D&D	OPC, Total	TPC
FY 2007	0	2,343,745	2,343,745	0	0	0	2,343,745
FY 2008	0	5,394,000	5,394,000	0	0	0	5,394,000
FY 2009	0	5,394,000	5,394,000	0	0	0	5,394,000
FY 2010	0	4,939,000	4,939,000	0	0	0	4,939,000
FY 2011	0	4,939,000	4,939,000	0	0	0	4,939,000

Note: FY 2007 budget submittal values above did not include the facility costs prior to FY 2006. These prior year costs (FY 2001 - FY 2005, included in line item 01-D-416) were added to the FY 2008 budget submittal values to provide the total estimated cost for the facility.

A revised Performance Baseline for the overall Waste Treatment Plant project was validated and approved on December 22, 2006, with a Total Project Cost of \$12,263,000,000. The estimated Pretreatment Facility portion of the Total Project Cost is \$4,939,000,000.

4. Project Description, Justification, and Scope

The largest of all Waste Treatment and Immobilization Plant facilities, the Pretreatment Facility, is a twelve-story building with 490,000 square feet of floor space and a foot print of approximately two football fields. It is constructed of 112,000 cubic yards of concrete and 16,400 tons of structural steel, and contains 527,000 feet (100 miles) of piping.

The Pretreatment Facility will separate radioactive tank waste into high-activity waste and low-activity waste fractions and transfer the segregated waste to the High-Level Waste Facility and the Low-Activity Waste Facility for vitrification. The facility has the design capacity (name plate) and treatment capacity (at 70 percent plant availability) to process 3,740 metric tons and 2,260 metric tons, respectively, of low-activity waste sodium per year, and a design capacity (name plate) and treatment capacity (at 70 percent plant availability) to process 1,225 metric tons and 860 metric tons, respectively, of high-activity as-delivered solids per year. The main pretreatment processes include filtration to separate the high curie solids from the low-activity liquids, evaporation to remove excess water, and an ion exchange system to remove cesium from the tank waste. The processing of the waste will be accomplished in black cells (isolated from entry) and a hot cell (remotely accessible) which are located in concrete structures in the center of the building. A hardened control room building and an annex building will be located adjacent to the Pretreatment Facility.

FY 2009 Accomplishments:

Design Activities:

- Released design of remaining 13 of 50 reinforced concrete walls between the 56-foot and 77-foot elevations (third to fourth floors). This release provided an additional 1,250 cubic yards of concrete for construction to place.
- Released roof framing drawings at elevation 116 ft (roof), for the fabrication of the main building roof structure. This release took the total steel released to date to 13,500 tons out of 16,500 tons, and completed the release of the main Pretreatment building structure
- Issued all pipe isometric drawings for the Low-Activity Waste feed receipt area. This enabled construction to install the pipe in the black cells for four Low-Activity Waste feed receipt storage vessels.
- Issued closure package and closure record for the External Flowsheet Review Team issue M12, validation of caustic leaching and ultra-filtration performance.

Construction Activities:

- Installed the 12-foot square by 9-inch thick 20 ton waste handling area spent filter radiological shield door into its final position. Installation of the door allowed the structure above the door to be completed.
- Completed erection of the building main frame steel work at the west end of the building from elevation 56-foot to 77-foot (third to fourth floors). This completed the steelwork erection for the first eight column lines at this elevation.

Planned FY 2010 Activities:

Design Activities:

- Release design of the final 13 of 47 12-inch thick reinforced concrete floor slabs at the 77-foot elevation (fourth floor) for construction. This release provides an additional 1,100 cubic yards of concrete for construction to place.
- Release design for the final 9 of 36 reinforced concrete walls between the 77-foot and 98-foot elevation (fourth to fifth floor walls). This release provides an additional 650 cubic yards of concrete for construction to place.
- Finalize and issue closure package and closure record for the External Flowsheet Review Team issue M3, vessel mixing testing program.
- Complete design of all piping racks in the Pretreatment facility.
- Complete the installation of all walls from the 56 foot to the 77 foot elevations except for two construction openings.

Procurement Activities:

- Deliver the three demister units for the Pretreatment filter cave to the material handling facility. Successful completion of the Material Receiving Report to enable construction forces to withdraw the exchanger for installation in the Pretreatment filter cave.

Construction Activities:

- Install two hot cell shield doors (80 ton and 104 ton).
- Complete all structural steel installations from the 56 foot to the 77 foot elevations.

Planned FY 2011 Activities:

Procurement Activities:

- Deliver for installation the Cesium Ion Exchange spiral plate heat exchangers (feed coolers).
- Receive the Cesium Nitric Acid Recovery re boiler and heat exchanger. This allows it's installation in the hot cell planning area 21.

Construction Activities:

- Complete the vessel upgrades for three spent resin collection and dewatering vessels to incorporate the revised seismic assessment criteria. The upgrades could include stiffening the pipe work nozzle connections and additional supports to the vessel internals.
- Lift into position the lower pipe module for the Low-Activity Waste feed receipt cell. The module contains approx 13,000 feet of stainless steel pipe, is 37-feet by 54-feet, and weighs 70 tons. The module will be located above the 48-foot diameter Low-Activity Waste feed receipt vessel.
- Set support frame structures for process jumpers and process equipment in the hot cell.
- Place the 112-ton, 14-foot diameter by 30-foot tall Ultrafiltration feed preparation vessel in the black cell located on the South side of the facility.

The following table provides the status for each phase by the end of each fiscal year: accomplished for FY 2009, planned for FY 2010, and proposed for FY 2011.

Phase	FY 2009	FY 2010	FY 2011
Design	76%	83%	91%
Procurement	39%	52%	72%
Construction	30%	37%	44%
Commissioning	2%	2%	3%
Overall ^a	46%	54%	63%

^a The WTP project Design/Engineering total percent complete calculations factor in Research and Testing, Process Engineering, and Environmental & Nuclear Safety costs which are in addition to the five facilities costs.

The project is being conducted in accordance with the project management requirements in DOE Order 413.3A, *Program and Project Management for the Acquisition of Capital Assets*, and all appropriate project management requirements have been met.

5. Financial Schedule

(dollars in thousands)

Appropriations	Obligations	Costs
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Total Estimated Cost (TEC)

Construction			
FY 2005 ^a	1,174,323	1,170,267	1,136,272
FY 2006 ^b	147,515	151,571	154,288
FY 2007	211,000	170,400	130,570
FY 2008 ^c	250,698	291,298	239,496
FY 2009	265,000	265,000	303,805
FY 2010	325,000	325,000	362,286
FY 2011	415,000	415,000	402,439
FY 2012	315,000	315,000	312,500
FY 2013	380,000	380,000	392,397
FY 2014	360,000	360,000	361,159

(dollars in thousands)

	Appropriations	Obligations	Costs
FY 2015	335,000	335,000	336,815
FY 2016	235,000	235,000	228,071
FY 2017	225,000	225,000	216,217
FY 2018	255,000	255,000	260,499
FY 2019	45,464	45,464	101,559
FY 2020	-	-	627
Total, Construction	4,939,000	4,939,000	4,939,000

^a The FY 2005 line is based on facility costs prior the split of the WTP into the five facilities.

^b The WTP Project received an extra obligation of \$4,056,000 in FY 2006 to recover a holdback in FY 2005.

^c 10 percent of the FY 2007 Appropriation has been held back as a result of not achieving Secretarial certification of the contractor's Earned Value Management System by September 30, 2007. The certification was received in FY 2008, at which time the \$69,000,000 was obligated to the project. Pretreatment's portion of the hold-back is \$40,600,000.

The following table provides a breakdown of current and planned spending by design, procurement, construction, and commissioning for the next few fiscal years (in thousands of dollars):

Phase	FY 2009	FY 2010	FY 2011
Design	129,420	86,890	76,764
Procurement	85,223	155,367	195,015
Construction	82,402	109,124	114,199
Commissioning	6,761	10,905	16,461
Total	303,805	362,286	402,439

6. Details of Project Cost Estimate

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline ^e
Total Estimated Cost (TEC)			
Design (PED)			
Total, PED	N/A	N/A	N/A
Construction			
Site Preparation	n/a	n/a	n/a
Engineering/Design	1,104,011	1,070,440	n/a
Equipment/Procurement ^a	1,049,151	1,066,188	n/a
Facility Construction ^b	1,563,618	1,537,407	1,920,000
Commissioning ^c	405,464	365,965	n/a
Technical Support/Transition	70,210	58,500	n/a
Contingency/Fee ^d	746,546	840,500	n/a
Total, Construction	4,939,000	4,939,000	1,920,000
Total, TEC	4,939,000	4,939,000	1,920,000
Contingency, TEC	[746,546]	[840,500]	n/a
Other Project Cost (OPC)	N/A	N/A	N/A
Contingency, OPC			
Total, TPC	4,939,000	4,939,000	1,920,000

(dollars in thousands)

Current Total Estimate	Previous Total Estimate	Original Validated Baseline ^c
[746,546]	[840,500]	n/a

Total, Contingency

Notes:

^a Equipment/Procurement dollars represent of costs of plant equipment, plant material, and Acquisition Services.

^b Facility Construction dollars represent construction costs through system turnover.

^c Commissioning dollars represent the cost of Start-up, Cold Commissioning, and Hot Commissioning.

^d Contingency/Fee represents the contractor's Management Reserve, Fee, and DOE Project Contingency.

^e The value listed in the "Original Validated Baseline - Facility Construction" is a total number for all the values that would normally appear in this column. A breakout for the March 2003 Baseline is not available, as until FY 2006 the facilities were not separated but totaled for the whole project, and the current breakout methodology was implemented in FY 2008.

7. Funding Profile History

Request		(\$K)								
		Prior Years	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	Outyears	Total
FY 2008 Performance Baseline	TEC	2,048,536	345,000	340,000	320,000	365,000	340,000	325,000	1,310,464	5,394,000
	OPC	0	0	0	0	0	0	0	0	0
	TPC	2,048,536	345,000	340,000	320,000	365,000	340,000	325,000	1,310,464	5,394,000
FY 2009	TEC	2,048,536	300,000	400,000	320,000	365,000	334,500	325,000	1,300,964	5,394,000
	OPC	0	0	0	0	0	0	0	0	0
	TPC	2,048,536	300,000	400,000	320,000	365,000	334,500	325,000	1,300,964	5,394,000
FY 2010	TEC	2,048,536	325,000	380,000	335,000	355,000	360,000	315,000	820,464	4,939,000
	OPC	0	0	0	0	0	0	0	0	0
	TPC	2,048,536	325,000	380,000	335,000	355,000	360,000	315,000	820,464	4,939,000
FY 2011	TEC	2,048,536	325,000	415,000	315,000	380,000	360,000	335,000	760,464	4,939,000
	OPC	0	0	0	0	0	0	0	0	0
	TPC	2,048,536	325,000	415,000	315,000	380,000	360,000	335,000	760,464	4,939,000

8. Related Operations and Maintenance Funding Requirements

See the discussion in the 01-D-416, Waste Treatment and Immobilization Plant project level data sheet.

9. Required D&D Information

See the discussion in the 01-D-416, Waste Treatment and Immobilization Plant project level data sheet.

10. Acquisition Approach

See the discussion in the 01-D-416, Waste Treatment and Immobilization Plant project level data sheet.

The following facility milestone dates are based on the contractor's December 2008 Internal Replan and revised contract signed in January 2009.

Pretreatment Facility Milestones

Milestone Title	Milestones - January 2009
Start Construction	November 21, 2002 A
Complete Design	July 2015
Complete Construction	March 2016
Start Cold Commissioning*	September 30, 2017
Complete Hot Commissioning*	February 28, 2019
A=Actual date construction started which followed approval of CD-3B	
* Contract Milestones-Jan. 09 Contract	

Savannah River

Funding by Site

(dollars in thousands)

	FY 2009 Current Appropriation	FY 2009 Current Recovery Act Appropriation	FY 2010 Current Appropriation	FY 2011 Request
Savannah River National Laboratory	58,500	0	61,480	61,000
Savannah River Operations Office	19,800	0	18,300	18,330
Savannah River Site	1,144,443	1,615,400	1,130,169	1,138,469
Total, Savannah River	1,222,743	1,615,400	1,209,949	1,217,799

Site Overview

The Savannah River Site is a Department of Energy (DOE) industrial complex dedicated to the reduction of risks through safe stabilization, treatment, and disposition of legacy nuclear materials, spent nuclear fuel, waste and waste units, and facilities. Activities include a National Nuclear Security Administration program that supports the DOE national security and non-proliferation programs, and support activities at the Savannah River National Laboratory.

American Recovery and Reinvestment Act Activities

The Savannah River Site American Recovery and Reinvestment Act (ARRA) activities are funded at \$1,615,400,000. Specifically, this funding will accelerate the shipment of more than 4,500 cubic meters of transuranic waste out of South Carolina for permanent disposal at the Waste Isolation Pilot Plant, accelerate in-situ decommissioning of two nuclear materials production reactors (P and R Reactors), and cleanup of contaminated areas throughout the site (e.g., A Area, D Area, E Area, M Area), reducing the site's industrial area by 40 percent, or 79,000 acres, by September 2011. ARRA work also includes the refurbishment of existing tank waste infrastructure and systems involving numerous long-lead equipment procurements. The American Recovery and Reinvestment Act funding will accelerate transuranic waste disposal by four years from 2016, and the decommissioning of the nuclear facilities by at least five years.

Site Description

The Savannah River Site is 310 square miles in size with 1,000 facilities concentrated within only 10 percent of the total land area. As cleanup activities are completed, it is anticipated that future nuclear operations will typically be located within the site's central interior. The land surrounding such locations provides a protective buffer for such activities. Other locations on site (i.e. less distant and near to the site perimeter to promote fuel conservation and enhance transportation access/egress) may be considered for other types of missions/operations. Selected excess EM facilities and inactive waste units are being deactivated, decommissioned, and remediated, as warranted. Facility decommissioning alternatives include demolition and in-situ disposal.

Site Cleanup Strategy/Scope of Cleanup

The EM completion strategy provides a comprehensive risk-based approach to the EM cleanup project by disposition of radioactive liquid waste through vitrification of the high activity component at the Defense Waste Processing Facility and disposal of the low-activity component through Saltstone; use of existing Savannah River Site facilities to receive, store, and disposition aluminum-clad spent nuclear fuel; disposition excess plutonium using Savannah River Site facilities; disposition legacy transuranic waste to the Waste Isolation Pilot Plant; decommissioning of all EM facilities that are not required for continuing missions; remediation of waste units, as warranted; and use existing Savannah River Site waste treatment, storage, and disposal capabilities to efficiently and safely complete the EM cleanup project and support other Savannah River Site tenants. The scope of cleanup completed at the Savannah River Site includes 368 inactive waste units that have been completed out of a total of 515 waste units; and 248 excess facilities that have been decommissioned out of a total of 973 excess facilities.

The Savannah River Site cleanup strategy has three primary objectives: (1) eliminate or minimize nuclear materials, spent nuclear fuel, and waste through safe stabilization, treatment, and/or disposition; (2) reduce the costs of continuing operations and surveillance and maintenance; and (3) decommission all EM-owned facilities, except those identified for transfer to another Program Secretarial Office, and remediate groundwater and contaminated soils consistent with the Area Completion Strategy, and the Groundwater Management Strategy and Implementation Plan.

Site Completion (End-State)

The EM lifecycle planning estimate range is 2038 to 2040. Inactive waste units will be remediated by employing an area-by-area completion strategy and any contaminated groundwater will be remediated, undergoing remediation, or monitored to ensure protection of human health and the environment. Units at which residual materials are left in place will be under institutional controls, comprised of access restrictions, inspections, maintenance, and monitoring. Concurrently with the area completions, all EM facilities will be decommissioned.

Regulatory Framework

The DOE-Savannah River Operations Office and its contractors will continue to work proactively with the South Carolina Department of Health and Environmental Control, the Environmental Protection Agency-Region 4, the Nuclear Regulatory Commission, the Defense Nuclear Facilities Safety Board, oversight groups, and stakeholders to facilitate the accomplishment of the environmental cleanup and risk reduction objectives at Savannah River Site. There are several key agreements that facilitate the cleanup of the Site. Subsequent to State-initiated enforcement actions, several key settlement agreements have been entered into with the State of South Carolina.

The *Federal Facility Agreement for the Savannah River Site* ensures that environmental releases, and potential releases of contaminants are investigated and appropriate action is taken to protect human health and the environment. This agreement is legally enforceable (with fines and penalties possible for noncompliance) and is required under Federal Regulation because the Savannah River Site is listed on the Environmental Protection Agency National Priorities List.

The *Savannah River Site Area Completion Strategy* addresses all of the known or potential contaminant releases to the environment from operable units, site evaluation areas, and remnants of decommissioned

facilities. The Strategy is to combine the investigations, assessments, and cleanup actions for several waste units which saves time, reduces documentation, lowers costs, and facilitates the EM completion of entire industrial areas, each contributing to Site footprint reduction.

Public Law 107-107, Section 3155, Disposition of Surplus Defense Plutonium at the Savannah River Site, Aiken, South Carolina requires a disposition pathway out of the State of South Carolina for all Plutonium transferred to the Savannah River Site.

National Defense Authorization Act for Fiscal Year 2001 (Public Law 106-398) as modified by subsection (b) of Section 3115, Continuation of Processing; Treatment, and Disposition of Legacy Nuclear Materials, of the National Defense Authorization Act for Fiscal Year 2004 (Public Law 108-136) requires H-Canyon/HB-Line to continue operations and be in a high state of readiness and shall provide technical staff necessary to operate and maintain such a facility.

The Savannah River Site Treatment Plan requires radioactive mixed waste to be treated to hazardous waste standards within an agreed-upon schedule. Radioactive liquid waste is an example of radioactive mixed waste. The Site Treatment Plan is enforceable by a consent order signed by the Department of Health and Environmental Control and Savannah River.

Saltstone Disposal Facility Industrial Solid Waste Landfill Permit contains milestone commitments related to salt waste treatment and disposition. Saltstone Disposal Facility is operated as a Class 3 Industrial Solid Waste Landfill (Permit #025500-1603). The State of South Carolina permitted Saltstone Disposal Facility under its authority pursuant to Subpart D of the Resource Conservation and Recovery Act and Chapter 61, Article 107 (Solid Waste Management) of the South Carolina Health and Environmental Control Regulations, Subpart 16, Industrial Solid Waste Landfills.

Section 3116 of the Ronald W. Reagan National Defense Authorization Act allows the Secretary of Energy, in consultation with the Nuclear Regulatory Commission, to determine when waste from reprocessing of spent nuclear fuel is appropriate for onsite disposition as other than high-level waste when certain criteria are met. In addition to the Nuclear Regulatory Commission consultation, the Savannah River Site must obtain South Carolina Department of Health and Environmental Control approval on closure documentation required by the Industrial Waste Water Permit issued by the South Carolina Department of Health and Environmental Control prior to initiating tank closure activities.

Nuclear Cooperation Agreements govern the shipment and receipt of Foreign Research Reactor Spent Nuclear Fuel. Savannah River Site has received and expects to receive additional Foreign Research Reactor Spent Nuclear Fuel through FY 2019 that has restrictions regarding the use and/or recycling of the fuel.

Critical Project Uncertainties and Assumptions

Program-specific uncertainties that could have significant impacts on individual projects and may impact the overall cleanup scope, schedule, and costs have been identified:

- Delays in off-site disposal would require increased storage capacity for high-level waste and spent nuclear fuel;

- Controlling sources of soil/groundwater contamination through sustained area-by-area completion is critical to aquifer/stream protection and risk reduction, and will support passive and natural groundwater remedies that are critical to reducing the cost of long term stewardship;
- Uncertainties within the radioactive liquid waste disposition program (i.e., the waste determination process under section 3116 of the FY 2005 National Defense Authorization Act) could delay tank closures;
- Uncertainties associated with the disposition path for the Savannah River Site heavy water could delay final closure of L-Area and increase disposition costs;
- Nuclear nonproliferation concerns are leading to continual increases in the amount, type, and schedule of Foreign Research Reactor fuel returns;
- Fuel Receipts are expected near term to be 80 percent Foreign Research Reactor Fuel; 20 percent Domestic Research Reactor Fuel;
- Uncertainties in the disposition strategy for excess plutonium stored at sites by EM;
- Uncertainty in sludge inventory and characteristics of tank waste that could adversely affect disposition costs and schedules;
- Resource Conservation and Recovery Act Permit commitments and Federal Facility Agreement milestones will be met contingent upon successful negotiation with the Environmental Protection Agency Region 4 and South Carolina Department of Health and Environmental Control. Negotiations will be required to reflect delaying Area Completions, re-sequencing associated Integrator Operable Unit activities, and delaying groundwater activities;
- A delay in the start of Salt Waste Processing Facility beyond FY 2013 could delay site completion and compliance with regulatory commitment dates for facility start-up and tank closures;
- DOE will continue to consolidate nuclear materials at the Savannah River Site;
- H-Area nuclear material processing facilities are scheduled to operate through September 30, 2019, to process the currently planned nuclear materials; however, restricting current plutonium loading limits (897g/m^3), would either cause the Canyon to operate beyond September 30, 2019, or alternative disposal paths in glass high-level waste canisters would have to be identified;
- Preparations for shipment of Spent Fuel from L-Area to H-Canyon for disposition must be complete in early FY 2011 in order to begin disposition of Spent Fuel in mid FY 2011;
- Infrastructure upgrades will be needed to maintain reliable H-Canyon/HB-Line operations to 2019;
- Future use of the Savannah River Site remains non-residential; and
- DOE will successfully re-negotiate the Salt Waste Processing Facility operational start date specified under the Saltstone Disposal Facility Landfill permit to be consistent with the approved Critical Decision-3.

Interdependencies

Execution of the EM cleanup project at Savannah River Site involves numerous interfaces with other organizations, both-on and off-site. Since EM is the major Savannah River Site program, it provides landlord services to other organizations, primarily the National Nuclear Security Administration.

National Nuclear Security Administration – Nuclear Nonproliferation – Plutonium Disposition – Nuclear Fuel Supply

Savannah River Site has been selected as the location for the construction and operation of facilities to dispose of approximately 34 metric tons of surplus weapons-usable plutonium. Currently, the Department is studying a number of options to transition the Plutonium Preparation Project/Pit Disassembly and Conversion Facility, from two independent construction projects, to one combined

project located within the K-Area at the Savannah River site under the National Nuclear Security Administration.

National Nuclear Security Administration – Nuclear Nonproliferation Program – Enriched Uranium Blend-Down

The United States has declared a total of 174.3 metric tons of highly enriched uranium surplus to future weapons needs. Savannah River Site processes and blends highly enriched uranium fuel and other material to low enriched uranium for shipment to the Tennessee Valley Authority vendor for processing and fabrication into commercial reactor fuel assemblies. Approximately 4.7 metric tons of other highly enriched uranium materials were shipped to a Tennessee Valley Authority contractor facility for blend down. The H-Canyon facility (via the Enriched Uranium Disposition Project) will be used to additionally blend down up to 21 metric tons of enriched uranium for transfer to the Tennessee Valley Authority through 2019. Of the 21 metric tons of enriched uranium, an initial amount of 5.6 metric tons has been identified for dissolution through the Canyon by September 30, 2010. Processing, blend down to Low Enriched Uranium and delivery to Tennessee Valley Authority will be complete, for this initial amount, in FY 2011. The material will be added to the Interagency Agreement by a Modification signed by the Tennessee Valley Authority and the Department on April 17, 2009.

Transuranic Waste Disposal

Transuranic waste is being characterized and processed for shipment to the Waste Isolation Pilot Plant. Shipments of transuranic waste drums began in FY 2001. The Waste Isolation Pilot Plant provides both personnel at Savannah River Site who characterize material for shipment, and certain equipment required for transuranic waste processing. Elimination of the transuranic waste inventory at Savannah River Site depends on the continued operation and acceptance of transuranic waste at the Waste Isolation Pilot Plant.

Hazardous and Mixed Waste Disposal

Mixed Low-level waste is a low-level radioactive waste which contains hazardous constituents, and is managed in accordance with DOE Order 435.1, Radioactive Waste Management and hazardous waste regulations. Hazardous mixed-waste generated at the Savannah River Site includes such materials as lead, solvents, paints and pesticides. Therefore the continued operation and cleanup of the Savannah River Site depends on the ability to ship this hazardous waste to offsite vendors. The Nevada Test Site is currently available for disposal of treated mixed waste providing applicable regulatory requirements and waste acceptance criteria are met.

Low-Level Waste Disposal

Some low-level radioactively contaminated material such as small and large pieces of equipment, gloves, soil and material that cannot be proven free of radioactive contamination which are generated at the Savannah River Site are disposed of at other DOE locations (e.g., Nevada Test Site) or at commercial sites. Therefore, the continued cleanup of the Savannah River Site depends on the shipment of these materials to other sites for disposal.

Naval Reactor Waste

Waste, such as reactor components, is routinely received from Naval Reactors. These components are disposed of in E Area.

Nuclear Material Consolidation and Surveillance

The Savannah River Site has one of largest protection Category I facilities in the DOE complex. This unique facility facilitates the consolidation of excess special nuclear material from around the complex in one place at a significant savings to the DOE complex. In addition, the Savannah River Site performs surveillance and monitoring operations on this material to assure continued safe storage.

Tennessee Valley Authority

As previously mentioned, over 23 metric tons of excess highly enriched uranium at Savannah River Site has been dispositioned by both dilution and shipment (over 18 metric tons) to the Tennessee Valley Authority vendors, Areva, and by direct shipment (approximately 4.7 metric tons) to Nuclear Fuel Services. Areva also provides natural uranium for blending. To deinventory H, L, and K Areas, Savannah River Site depends on the Tennessee Valley Authority to provide and accept these materials. Modifications to the Interagency Agreement between the Department of Energy and the Tennessee Valley Authority will continue to be used as the mechanism for establishing the transfer of Low Enriched Uranium to the Tennessee Valley Authority.

Idaho National Laboratory

Shipment of neptunium-237 from the H Canyon was completed in 2009 to the Idaho Laboratory for future plutonium-238 production. Additionally, spent nuclear fuel (containing enriched uranium) will be exchanged between Savannah River Site and Idaho National Laboratory (no earlier than FY 2013). The aluminum-based spent nuclear fuel (at Savannah River Site plus any received from Idaho National Laboratory) will be stored in L-Basin awaiting shipment to H-Canyon for processing and blend-down to low enriched uranium. The non-aluminum based spent nuclear fuel at Savannah River Site is planned to be shipped to the Idaho National Laboratory to be consolidated for packaging with the non-aluminum based spent nuclear fuel already there.

Enriched Uranium Receipts from National Nuclear Security Administration Sites (Y-12 Oak Ridge, Los Alamos, Lawrence Livermore and others)

K-Area will accept enriched uranium materials for lag storage and subsequent shipment to the H-Canyon and HB-Line for processing and blend-down to low enriched uranium in accordance with the Enriched Uranium Disposition Project (as previously discussed).

Contract Synopsis

Savannah River Site operates under two main contracts. One contract is for the management and operation of the Site, and the other supports the tank liquid waste system project. The management and operating contract is with Savannah River Nuclear Solutions, LLC, and the new Liquid Waste System contract was awarded to Savannah River Remediation, LLC, which completed transition July 2009.

In addition, the Salt Waste Processing Facility is a major capital line-item project supporting site cleanup that is not managed by either the managing and operating contractor or the liquid waste contract. The Department of Energy contracted the design, construction and one year of operations under a cost-plus-incentive fee structure with Parsons Infrastructure and Technology.

Cleanup Benefits

Savannah River Site is implementing a cleanup strategy utilizing a project management approach. Currently, 100 percent of the Savannah River Site's nuclear materials that were identified in the Defense

Nuclear Facilities Safety Boards' Recommendation 94-1/2000-1 have been stabilized (54 milestones representing 143,518 items).

Specific program benefits realized from the EM cleanup project are significant. The Area Completion Project is reducing the site's contamination footprint and is reaching consensus with regulators for cleanup decisions and future site use. In addition, the non-compliant radioactive liquid waste tanks are the highest environmental and human health risks in the State of South Carolina according to the South Carolina Department of Health and Environmental Control. Removal of radioactive liquid waste will be completed, and upon completion, the facilities that supported these projects must be deactivated and decommissioned. In addition, the physical locations of the facilities must be closed under the Comprehensive Environmental Response, Compensation, and Liability Act, or other governing permits and laws. The Federal Facility Agreement commitment is to close all non-compliant tanks by FY 2022.

H Canyon and HB Line is the only operational radiological separation facility in the United States. Savannah River Site has consolidated spent nuclear fuel from three storage basins to a single storage basin; all Savannah River Site 94-1/2001 commitments have been met; and all Mk-16/Mk-22 fuel has been dissolved and dispositioned. Additional materials are being dispositioned from across the DOE complex. Legacy transuranic waste is being shipped to the Waste Isolation Pilot Plant nearly three decades ahead of the original schedule.

Direct maintenance and repair at the Savannah River Site is estimated to be \$149,782,000.

Funding Schedule by Activity

In FY 2011, EM is proposing to transfer existing PBSs from the currently established control points of 2035 Completions, Nuclear Material Stabilization and Disposition, and Tank Farm Activities to newly created control points of Cleanup and Waste Disposition and Site Risk Management Operations. These new controls points are being proposed in order to better align EM activities with our overall cleanup strategy at the site.

The funding table below provides a non-comparable display of the PBSs between control points.

	(dollars in thousands)		
	FY 2009	FY 2010	FY 2011
Defense Environmental Cleanup			
Savannah River Site			
2035 Accelerations			
SR-0100 / Savannah River Community and Regulatory Support	6,355	18,300	0
SR-0101 / Savannah River Community and Regulatory Support	13,445	0	0
SR-0040C / Nuclear Facility D&D - 2035	1,552	0	0
SR-0012 / SNF Stabilization and Disposition	30,662	38,768	0
SR-0030 / Soil and Water Remediation	35,513	0	0
SR-0013 / Solid Waste Stabilization and Disposition	42,099	0	0
Subtotal, 2035 Accelerations	129,626	57,068	0
Cleanup and Waste Disposition			
SR-0100 / Savannah River Community and Regulatory Support	0	0	18,330

	(dollars in thousands)		
	FY 2009	FY 2010	FY 2011
Nuclear Material Stabilization and Disposition			
SR-0011C / NM Stabilization and Disposition	361,343	391,625	0
Site Risk Management Operations			
SR-0014C / Radioactive Liquid Tank Waste Stabilization and Disposition-2035	0	0	806,233
SR-0011C / NM Stabilization and Disposition	0	0	370,042
SR-0012 / SNF Stabilization and Disposition	0	0	23,194
Subtotal, Site Risk Management Operations	0	0	1,199,469
Tank Farm Activities			
SR-0014C / Radioactive Liquid Tank Waste Stabilization and Disposition-2035	731,774	761,256	0
Total, Savannah River Site	1,222,743	1,209,949	1,217,799

The funding table below provides a comparable display of the PBSs between control points.

	(dollars in thousands)		
	FY 2009	FY 2010	FY 2011
Defense Environmental Cleanup			
Savannah River Site			
Cleanup and Waste Disposition			
SR-0100 / Savannah River Community and Regulatory Support	6,355	18,300	18,330
SR-0101 / Savannah River Community and Regulatory Support	13,445	0	0
SR-0040C / Nuclear Facility D&D - 2035	1,552	0	0
SR-0030 / Soil and Water Remediation	35,513	0	0
SR-0013 / Solid Waste Stabilization and Disposition	42,099	0	0
Subtotal, Cleanup and Waste Disposition	98,964	18,300	18,330
Site Risk Management Operations			
SR-0014C / Radioactive Liquid Tank Waste Stabilization and Disposition-2035	731,774	761,256	806,233
SR-0011C / NM Stabilization and Disposition	361,343	391,625	370,042
SR-0012 / SNF Stabilization and Disposition	30,662	38,768	23,194
Subtotal, Site Risk Management Operations	1,123,779	1,191,649	1,199,469
Total, Savannah River Site	1,222,743	1,209,949	1,217,799

Performance Measure Summary

	Complete through FY 2009	Complete through FY 2010	Complete through FY 2011	Life-Cycle	FY 2011 % Complete
Savannah River					
Geographic Sites Eliminated (number of sites)	0	0	0	1	0%
Depleted and Other Uranium packaged for disposition (Metric Tons)	11,536	11,536	11,536	23,182	49.8%
Enriched Uranium packaged for disposition (Number of Containers)	3,085	3,184	3,184	3,184	100.0%
High-Level Waste packaged for final disposition (Number of Containers)	2,795	2,981	3,278	6,300	52.0%
Industrial Facility Completions (Number of Facilities)	232	232	232	759	30.6%
Liquid Waste in Inventory eliminated (Thousands of Gallons)	2,110	2,810	3,510	33,100	10.6%
Liquid Waste Tanks closed (Number of Tanks)	2	2	4	51	7.8%
Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	105,064	105,564	105,564	137,579	76.7%
Material Access Areas eliminated (Number of Material Access Areas)	2	2	2	3	66.7%
Nuclear Facility Completions (Number of Facilities)	11	11	11	191	5.8%
Plutonium Metal or Oxide packaged for long-term storage (Number of Containers)	919	919	919	919	100.0%
Plutonium or Uranium Residues packaged for disposition (Kilograms of Bulk)	490	490	490	490	100.0%
Radioactive Facility Completions (Number of Facilities)	8	8	8	40	20.0%
Remediation Complete (Number of Release Sites)	369	369	369	515	71.7%
Spent Nuclear Fuel packaged for final disposition (Metric Tons of Heavy Metal)	3	3	3	40	7.5%
Transuranic Waste shipped for disposal (Cubic meters) – Contact Handled	6,165	6,165	6,165	15,590	39.5%
Transuranic Waste shipped for disposal (Cubic meters) – Remote Handled	17	17	17	68	25.0%

Detailed Justification

In FY 2011, EM is proposing to transfer existing PBSs from the currently established control points of 2035 Completions, Nuclear Material Stabilization and Disposition, and Tank Farm Activities to newly created control points of Cleanup and Waste Disposition and Site Risk Management Operations. These new controls points are being proposed in order to better align EM activities with our overall cleanup strategy at the site.

The Detailed Justification Table below has been comparably adjusted to reflect the PBSs within the new control points in order to aid in the review process.

(dollars in thousands)

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
Remediation Complete (Number of Release Sites)	369	369	369	515	72.0%
Key Accomplishments (FY 2009)/Planned Milestones (FY 2010/FY 2011)					
<ul style="list-style-type: none"> ▪ Submit Federal Facility Agreement Appendix E (Outyear Milestones) (FY 2009) ▪ Issue Record of Decision for M Area Operable Unit (Includes 19 sub-units with 19 associated milestones) (FY 2009) ▪ Start C Area Burning/Rubble Pit and Old C Area Burning/Rubble Pit Remedial Action (FY 2009) ▪ Complete Periodic Monitoring and Submit the Steel Creek Integrator Operable Unit Periodic Report # 3 (FY 2009) ▪ Initiate the Savannah River Floodplain Swamp Integrator Operable Unit Second Phase II Field Start (FY 2009) ▪ Submit Record of Decision for P Area Operable Unit (Includes 9 sub-units with 9 associated milestones) (FY 2009) ▪ Start Remedial Action for M Area Operable Unit (Includes 19 sub-units with 19 associated milestones) (FY 2009) 					

SR-0040C / Nuclear Facility D&D – 2035

1,552

0

0

This PBS can be found within the Defense Environmental Cleanup appropriation.

An integral part of the cleanup mission for the Office of Environmental Management is the decommissioning of facilities constructed in support of nuclear materials production. At the start of FY 2003, there were 1,013 major facilities to be decommissioned, or to be transitioned to a non-EM organization.

In FY 2011, the following activity is planned:

- No planned activities in FY 2011; the scope of work typically covered in this PBS is being executed with ARRA funding.

Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
No metrics associated with this PBS					

SR-0101 / Savannah River Community and Regulatory Support

13,445

0

0

This PBS can be found within the Defense Environmental Cleanup appropriation.

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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This project provides independent environmental monitoring and emergency management activities by the States of South Carolina and Georgia under either an Agreement in Principle or a grant.

In FY 2011, the following activities are planned:

- No activities planned. Scope transferred to PBS SR-0100/Savannah River Community and Regulatory Support.

Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
No metrics associated with this PBS					

SR-0100 / Savannah River Community and Regulatory Support

6,355 18,300 18,330

This PBS can be found within the Defense Environmental Cleanup appropriation.

The purpose and scope of this project is to provide support that enables the Savannah River Site to perform its missions and cleanup objectives. Support activities include archaeological research, geological surveys, ecological research, natural resource management, forestry management, project management, Historically Black Colleges and Universities, and the DOE Summer Diversity Intern Program. Other activities include support and development of a long-term observation network to monitor water level, flow paths, and water quality. This project also provides independent environmental monitoring and emergency management activities by the States of South Carolina and Georgia under either an Agreement in Principle or a grant. The project scope also includes support for the South Carolina Department of Health and Environmental Control, for oversight and implementation of the Federal Facility Agreement. This project scope also includes the operation and maintenance of a public reading room for Savannah River documents to support communication and stakeholder involvement, and Payments-In-Lieu-Of-Taxes for three South Carolina counties (Aiken, Allendale, and Barnwell). Support is provided to the Citizens Advisory Board to include facilitators, technical advisors, meeting rooms, and other expenses.

In FY 2011, the following activities are planned:

- Conduct forest management activities to sustain the Savannah River Sites natural resources.
- Conduct cultural resource management regulatory requirements, through technical reviews of the National Environmental Policy Act and Comprehensive Environmental Response, Compensation, and Liabilities Act documents for National Historic Preservation Act negotiations.
- Provide technical expertise in the conduct of geological surveys and natural resource management.

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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- Execute grant programs with Historically Black Colleges and Universities focusing on scientific research related to environmental issues.
- Continue grant for South Carolina Department of Health Environmental Control oversight of environmental monitoring, Federal Facility Agreement and Site Treatment Plan.
- Continue Payments-in-Lieu-of-Taxes to Aiken, Allendale, and Barnwell counties.
- Provide independent environmental monitoring and emergency management activities.

Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
No metrics associated with this PBS					

SR-0011C / NM Stabilization and Disposition

361,343

391,625

370,042

This PBS can be found within the Defense Environmental Cleanup appropriation.

The H Area facilities will continue to stabilize and disposition enriched uranium materials through the middle of FY 2011. The materials planned and proposed to be dispositioned in H Area include: highly-enriched uranium solutions; miscellaneous fuels; plutonium residues; enriched uranium residues; and other legacy materials identified by DOE. These facilities will be deactivated by the end of FY 2023. Funding for the Highly Enriched Uranium Blend Down program, which was previously funded by the National Nuclear Security Administration, are included in this PBS. These facilities also have the capability to disposition certain plutonium materials through the liquid waste system.

This PBS scope also includes the Receiving Basin for Off-Site Fuels facility which has been de-inventoried, deactivated and placed in long-term surveillance.

Additional scope in this PBS is the operation of K-Area as a storage and surveillance facility for stabilized special nuclear materials. The receipt, storage, and disposition of materials at the Savannah River Site allows for de-inventory and shutdown of other DOE complex sites, providing substantial risk reduction and significant mortgage reduction savings to the Department.

The K Reactor process area will be maintained in a safe and environmentally sound shutdown condition. The K-Area will continue to serve as a material storage facility for unirradiated highly enriched uranium, tritiated heavy water, and plutonium. The K-Area Material Storage Facility will also continue to serve as an International Atomic Energy Agency control protocol facility for plutonium oxide.

The K-Area Interim Surveillance capability to perform destructive and non-destructive surveillance in accordance with DOE Standard-3013 is being installed in K-Area. The DOE STD-3013 surveillance

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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and repackaging capability will be operated for management of legacy inventories within the K-Area Material Storage Facility. Plutonium that meets the criteria for disposition via the DOE mixed-oxide fuel program may be transferred for disposition by FY 2019.

DOE plans to ship surplus non-pit weapons-grade plutonium to the Savannah River Site from the Los Alamos National Laboratory, and Lawrence Livermore National Laboratory. This material will be received and stored at K-Area Material Storage.

In FY 2011, the following activities are planned:

- Continue to receive weapons grade surplus non-pit plutonium from the Los Alamos National Laboratory, and Lawrence Livermore National Laboratory.
- Perform surveillance of materials in storage in accordance with DOE-STD-3013 and the surveillance and monitoring plan.
- Continue surveillance and maintenance of the F Area Materials Storage Facility (235-F) as well as for the Receiving Basin for Off-Site Fuels Facility. Develop a program to reduce the risk to personnel and the environment by reducing the residual plutonium-238 contamination in the F Area Materials Storage Facility (235-F).
- Continue processing nuclear materials as well as purchase of cold chemicals and other materials for operations of H Canyon and HB Line.
- Support L to H shipments to H Canyon.
- Perform H Canyon/HB Line infrastructure upgrades.

Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
Enriched Uranium packaged for disposition (Number of Containers)	3,085	3,184	3,184	3,184	100.0%
Depleted and Other Uranium packaged for disposition (Metric Tons)	11,536	11,536	11,536	23,182	50.0%
Key Accomplishments (FY 2009)/Planned Milestones (FY 2010/FY 2011)					
<ul style="list-style-type: none"> ▪ Complete Superkukla processing pending DOE Government Furnished Services and Items release of material for processing (FY 2009) ▪ Complete Conceptual Design Plutonium Preparation Project (FY 2009) ▪ Continue disposition of depleted uranium oxide (FY 2009) ▪ Continued surveillance capability of 3013 cans in compliance with DOE-STD-3013 (FY 2009/September 2011) ▪ Continued operations of the K Area Material Storage Facility (FY 2009/September 2011) 					

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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- Complete Dissolution and Purification of Un-irradiated Highly Enriched Uranium (March 2011)
- Develop a program to reduce the residual plutonium-238 contamination in F Area Materials Storage Facility (235-F) (September 2011)

SR-0012 / SNF Stabilization and Disposition **30,662** **38,768** **23,194**

This PBS can be found within the Defense Environmental Cleanup appropriation.

This PBS covers the scope and funding for the legacy spent nuclear fuel originating from Atomic Energy Commission and DOE activities, and non-legacy spent nuclear fuel, originating in both Foreign and Domestic Research Reactors (including Gap Material) which is being transferred to the Savannah River Site for safe, secure storage pending disposition. All spent fuel activities at Savannah River are conducted in a single area and consolidated for storage in a single basin.

This PBS also includes 1,600 metric tons of heavy water stored in various locations that will be dispositioned by the end of FY 2020. Some of the heavy water is significantly tritiated. Disposition alternatives are being explored. All deactivation activities under this PBS are scheduled to be completed by FY 2022 and the facilities transferred to PBS SR-0040C, Nuclear Facility Decontamination and Decommissioning.

In FY 2011, the following activities are planned:

- Facility surveillance and maintenance activities, including maintenance of equipment, facility, grounds, instrumentation, and infrastructure.
- Provide safe storage of all spent nuclear fuel.

Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
Spent Nuclear Fuel packaged for final disposition (Metric Tons of Heavy Metal)	3	3	3	40	8.0%
Key Accomplishments (FY 2009)/Planned Milestones (FY 2010/FY 2011)					
<ul style="list-style-type: none"> ▪ Spent Nuclear Fuel Receipts - Receive Foreign Research Reactor Fuel, receive Domestic Research Reactor Fuel. (FY 2009) ▪ Maintain L Area spent nuclear fuel receipt, storage, and shipping facilities in an operable condition capable of supporting planned program requirements. (FY 2009) ▪ Ship Spent Nuclear Fuel to H-Area (April 2011) 					

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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**SR-0014C / Radioactive Liquid Tank Waste
Stabilization and Disposition-2035**

731,774 761,256 806,233

This PBS can be found within the Defense Environmental Cleanup appropriation.

This PBS supports the mission of the tank waste program at the Savannah River Site, to safely and efficiently treat, stabilize, and dispose of approximately 37 million gallons of legacy radioactive waste currently stored in 49 underground storage tanks.

The Savannah River Site plans to: reduce the volume of tank waste by evaporation to ensure that storage tank space is available to receive additional legacy waste from ongoing nuclear material stabilization and waste processing activities; pre-treat the radioactive waste as sludge and salt waste; vitrify sludge and high curie/high actinide high-level waste at the Defense Waste Processing Facility into canisters and then store the canisters; treat and dispose of the low-level tank waste as saltstone grout; treat and discharge evaporator overheads through the Effluent Treatment Project; empty and permanently close in place using grout all waste tanks and support systems; and ensure that risks to the environment and human health and safety from tank waste operations are eliminated or reduced to acceptable levels.

To comply with state and federal regulatory agreements, all storage tanks must be empty by 2028. This project also includes the design, construction, and operation of the Salt Waste Processing Facility to safely separate the high-activity fraction from the low-activity fraction of the salt waste stored in underground tanks at Savannah River. Processing salt waste through the Salt Waste Processing Facility is planned to begin in FY 2013 to maintain adequate tank space required to support Defense Waste Processing Facility operations, expedite processing of liquid waste consistent with the current strategy, and ensure that the site meets its Federal Facilities Agreement commitments for tank waste disposition. Interim salt processing operations are on going using the Modular Caustic Side Solvent Extraction Unit and the Actinide Removal Process until the Salt Waste Processing Facility starts in FY 2013 to ensure enough tank space is generated to support the Defense Waste Processing Facility feed preparation and tank closure activities.

For the Salt Waste Processing Facility (05-D-405), a total of \$155,524,000 for construction was appropriated in FY 2009 and \$234,118,000 was appropriated in FY 2010 and \$256,951,000 is requested in FY 2011 to continue construction.

In FY 2011, the following activities are planned:

- Continue operation of interim salt processing facilities.
- Support H Canyon receipts of newly generated waste.
- Continue operation of the Defense Waste Processing Facility and complete 297 canisters of glass waste.

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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- Continue construction of the Salt Waste Processing Facility.
- Continue operation of F and H Tank Farms.
- Continue Bulk Waste Removal operations in order to meet a Federal Facilities Agreement commitment in FY 2011 and to support the Defense Waste Processing Facility feed preparation, Actinide Removal Process and Modular Caustic Side Extraction feed preparation, as well as support of tank closure activities.
- Support Tank 48 Return to Service Project.
- Support tank closure activities in order to meet Federal Facility Agreement commitments in FY 2012.
- Continue saltstone production and disposal operations as well as vault construction.
- Continue the Effluent Treatment Facility operations.
- Continue modifications to liquid waste facilities, systems, and waste transfer lines in support of the Salt Waste Processing Facility project.
- Initiate Glass Waste Storage Building #3 project planning.

Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
Liquid Waste in Inventory eliminated (Thousands of Gallons)	2,110	2,810	3,510	33,100	11.0%
Liquid Waste Tanks closed (Number of Tanks)	2	2	4	51	8.0%
High-Level Waste packaged for final disposition (Number of Containers)	2,795	2,981	3,278	6,300	52.0%
Key Accomplishments (FY 2009)/Planned Milestones (FY 2010/FY 2011)					
<ul style="list-style-type: none"> ▪ Complete Enhanced Final Design (FY 2009) ▪ Complete Mechanical Cleaning of Tanks 18 and 19 (FY 2009) ▪ Complete Basemat – Central Processing Area (FY 2009) ▪ Complete Processing Low Organic Salt Waste Processing (FY 2009) ▪ Complete Deck at 116' - Central Processing Area (April 2010) ▪ Complete Delivery - Large ASME Vessels (August 2010) ▪ Submit F Tank Farm Draft Waste Determination Basis Document to the Nuclear Regulatory Commission (September 2010) 					

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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- Complete Bulk Waste Removal Operations for 2 Tanks (September 2010)
- Produce 186 Canisters of Vitrified High Level Waste (September 2010)
- Complete Dark Cells Deck at 139' – Central Processing Area (April 2011)
- Produce 297 Canisters of Vitrified High Level Waste (September 2011)

Total, Savannah River	1,222,743	1,209,949	1,217,799
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Explanation of Funding Changes

In FY 2011, EM is proposing to transfer existing PBSs from the currently established control points of 2035 Completions, Nuclear Material Stabilization and Disposition, and Tank Farm Activities to newly created control points of Cleanup and Waste Disposition and Site Risk Management Operations. These new controls points are being proposed in order to better align EM activities with our overall cleanup strategy at the site.

The Explanation of Funding Changes Table below has been comparably adjusted to reflect the PBSs within the new control points in order to aid in the review process.

FY 2011 vs. FY 2010 (\$000)

Defense Environmental Cleanup

Savannah River Site

Cleanup and Waste Disposition

SR-0100 / Savannah River Community and Regulatory Support

- No significant change. 30

Site Risk Management Operations

SR-0011C / NM Stabilization and Disposition

- Decrease is associated with a completion of the californium shuffler and one time funding for the K Area purification vault in FY 2010. -21,583

SR-0012 / SNF Stabilization and Disposition

- Decrease is due to the elimination of foreign and domestic fuel shipment receipts. -15,574

SR-0014C / Radioactive Liquid Tank Waste Stabilization and Disposition-2035

FY 2011 vs. FY 2010 (\$000)

- Increase is due to an increase to the Tank 48 Return to Service Project and Bulk Waste Removal to support tank closure acceleration.

44,977

Total, Savannah River

7,850

**Salt Waste Processing Facility, Savannah River Site, Aiken, South Carolina
(Construction 05-D-405) - (SR-0014C)**

1. Significant Changes

In an Energy Systems Acquisition Advisory Board briefing on December 8, 2008, the Deputy Secretary of Energy approved Critical Decision 3 with a total project cost of \$1,339,548,586 for the Salt Waste Processing Facility. A Federal Project Director, Level IV has been assigned to this project. This project data sheet is an update of the fiscal year 2010 project data sheet.

2. Design, Construction, and D&D Schedule

(fiscal quarter or date)

	CD-0	CD-1	PED Complete	CD-2	CD-3	CD-4	D&D Start	D&D Complete
FY 2005	06/25/2001	4Q FY2004	4Q FY2005	4Q FY2005	4Q FY2005	4Q FY2008	N/A	N/A
FY 2006	06/25/2001	4Q FY2004	3Q FY2006	3Q FY2006	3Q FY2006	4Q FY2009	N/A	N/A
FY 2007	06/25/2001	4Q FY2004	1Q FY2008	3Q FY2007	3Q FY2007	1Q FY2011	N/A	N/A
FY 2008	06/25/2001	4Q FY2004	1Q FY2008	3Q FY2007	3Q FY2007	1Q FY2011	N/A	N/A
FY 2007 Notification	06/25/2001	4Q FY2004	4Q FY2008	4Q FY2007	4Q FY2008	1Q FY2014	N/A	N/A
FY 2009	06/25/2001	4Q FY2004	4Q FY2008	4Q FY2007	4Q FY2008	1Q FY2014	N/A	N/A
FY 2008 Reprogramming	06/25/2001	4Q FY2004	4Q FY2008	4Q FY2007	1Q FY2009	1Q FY2014	N/A	N/A
FY 2010	06/25/2001	4Q FY2004	4Q FY2008	4Q FY2007	1Q FY2009	1Q FY2016	N/A	N/A
FY 2011	06/25/2001	4Q FY2004	4Q FY2008	4Q FY2007	1Q FY2009	1Q FY2016	N/A	N/A

CD-0 – Approve Mission Need

CD-1 – Approve Alternative Selection and Cost Range

CD-2 – Approve Performance Baseline

CD-3 – Approve Start of Construction

CD-4 – Approve Start of Operations or Project Closeout

D&D Start – Start of Demolition & Decontamination (D&D) work

D&D Complete – Completion of D&D work

	(Fiscal Quarter or Date)							
	Performance Baseline Validation	CD-2/3A	CD-3B	CD-3				
FY 2005	N/A	N/A	N/A	N/A				
FY 2006	N/A	N/A	N/A	N/A				
FY 2007	N/A	N/A	N/A	N/A				
FY 2008	N/A	N/A	N/A	N/A				
FY 2007 Notification	4Q2007	4Q2007	2Q2008	N/A				
FY 2009	4Q2007	4Q2007	3Q2008	N/A				
FY 2008 Reprogramming	4Q2007	4Q2007	4Q2008	N/A				
FY 2010	4Q2007	4Q2007	4Q2008	1Q2009				
FY 2011	4Q2007	4Q2007	4Q2008	1Q2009				

CD-2/3A - Site Preparation, Early Construction and Long Lead Procurement

CD-3B - Early Construction and Long Lead Procurement

3. Baseline and Validation Status

(Fiscal Quarter)

	TEC, PED	TEC, Construction	TEC, Total	OPC Except D&D	OPC, D&D	OPC, Total	TPC
FY 2005	TBD	TBD	TBD or N/A	TBD	N/A	TBD or N/A	TBD or N/A
FY 2006	78,917	252,014	330,931	107,207	0	107,207	438,138
FY 2007	228,600	331,000	559,600	120,400	0	120,400	680,000
FY 2008	228,705	497,199	725,904	173,433	0	173,433	899,337
FY 2007 Notification	228,797	497,199	725,996	173,341	0	173,341	899,337
FY 2009	228,705	497,199	725,904	173,433	0	173,433	899,337
FY 2008 Reprogram	243,705	482,199	725,904	173,433	0	173,433	899,337
FY 2010	243,705	895,151	1,138,856	200,692	0	200,692	1,339,548
FY 2011	243,705	895,151	1,138,856	200,692	0	200,692	1,339,548

4. Project Description, Justification, and Scope

This project scope includes construction of a facility to treat large quantities of waste from reprocessing and other liquids generated by nuclear materials production operations at the Savannah River Site.

Approximately 37,000,000 gallons of this waste is being stored on an interim basis in 49 underground waste storage tanks. Of the 37,000,000 gallons, approximately 3,000,000 gallons are sludge waste and approximately 34,000,000 gallons are salt waste, consisting of 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 processing and vitrification, and new waste is being transferred to the radioactive liquid waste tanks. In addition, water required for salt cake removal from the tanks and processing is presently expected to result in approximately 84 million gallons of salt and supernate solution to be processed. Continued, long-term storage of this liquid waste

in underground tanks poses an environmental risk.

To comply with state and federal regulatory agreements, all non-compliant storage waste tanks must be empty by 2028. The Department built the Defense Waste Processing Facility to vitrify radioactive liquid waste into a stable form and store it for eventual disposal in a geologic repository. The ability to safely process the salt component of the radioactive liquid waste stored in underground storage tanks at the Savannah River Site is a crucial prerequisite for completing radioactive liquid waste disposal. Without a suitable method for salt management, the Department would not be able to place the radioactive liquid waste in a configuration acceptable for safe disposal.

This project scope includes design, construction, and cold commissioning of the Salt Waste Processing Facility, to safely separate the high-activity fraction from the low-activity fraction of the radioactive liquid salt waste stored in underground tanks at the Savannah River Site. 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 processing also includes a separation step to remove strontium, uranium, plutonium and neptunium from the waste by sorption onto granular monosodium titanate followed by filtration.

The Salt Waste Processing Facility presently has a waste processing nameplate capacity of a nominal 7.3 million gallons per year. The Salt Waste Processing Facility will consist of all buildings, equipment, and services required to provide a fully functioning facility for processing salt waste. The Salt Waste Processing Facility 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 closed-cell 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.

A formal technical and programmatic risk assessment has been performed. The risk assessment concluded that the technical and programmatic risks are manageable.

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 is on the critical path for establishing the coupled feed.

In response to Defense Nuclear Facility Safety Board concerns on radiological materials, the Department of Energy Savannah River Operations Office directed development of an Enhanced Preliminary Design that implemented a Performance Category 3 confinement approach on November 23, 2005.

In May 2007, development of a bottoms-up cost estimate was completed to support the Critical Decision-2 package, and further adjusted based on comments received from an External Independent Review, which resulted in a project cost estimate of \$899,337,000. The primary drivers for this \$220 million increase over the rough order of magnitude estimate were increased technical requirements

resulting from the implementation of National Quality Assurance Standard 1 in lieu of International Standards Organization Standard 9001, resolution of structural/geotechnical issues, and additional Performance Category 3 requirements not identified during the initial rough order of magnitude estimate process. In addition, changes in how the project interpreted guidance on classification of Operating Funds as either Other Project Costs or Operating Costs accounted for approximately \$53 million of the \$220 million increase.

Early in the execution of Critical Decision 2/3A activities, design issues surrounding inability to secure sufficient critical design resources began to impact completion of design activities. This situation was further exacerbated by the volatility of the market, which began affecting the Critical Decision 3A procurements. Mitigation strategies were developed to deal with these issues. The revised Critical Decision 3 baseline was developed using the 90 percent design drawings, which required additional material and associated labor to install, and incorporating the cost of realized risk of material cost increases and design delays. As a result of the new baseline and additional funding required to adequately address risks, the total project cost for the Salt Waste Processing Facility is \$1,339,548,586, an increase of \$440,211,586 over the Critical Decision 2 baseline estimate.

Cost and schedule confidence levels were established at Critical Decision 3. The 80 percent confidence completion date is October 2015, which includes 126 weeks of schedule contingency. At the 95 percent confidence cost is \$1,340 million.

Critical Decision - 0: Approve Mission Need - June 2001

Critical Decision - 1: Approve Preliminary Baseline Range - August 2004

Independent Review of Contractors Earned Value Management System - June 2005 (with a follow-up review in January 2008)

Critical Decision - 2/3a: Approve Performance Baseline/ Start of Construction (Long Lead Procurement/Site Preparation/Limited Construction) - September 2007

Critical Decision - 3b: Start of Construction (Long Lead Procurement/Limited Construction) - September 2008

Critical Decision - 3: Approve Start of Construction - December 2008

Critical Decision - 4: Approve Start of Operations - October 2015

The project is being conducted in accordance with the project management requirements in DOE O 413.3A and DOE M 413.3-1, Program and Project Management for the Acquisition of Capital Assets, and all appropriate project management requirements have been met.

5. Financial Schedule

(dollars in thousands)

Appropriations	Obligations	Costs
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Total Estimated Cost (TEC)

PED

FY 2003	4,842	4,842	0
FY 2004	51,198	51,198	11,539
FY 2005	23,469	23,469	30,204
FY 2006	34,990	34,990	48,195
FY 2007	104,296	104,296	75,600
FY 2008	24,910	24,910	57,863
FY 2009	0	0	16,588
FY 2010	0	0	3,716
Total, PED	243,705	243,705	243,705

Construction

FY 2005	5,792	5,792	0
FY 2006	495	495	0
FY 2007	0	0	1,907
FY 2008	72,199	72,199	63,640
FY 2009	155,524	155,524	93,367
FY 2010	234,118	234,118	255,944
FY 2011	256,951	256,951	278,777
FY 2012	170,071	170,071	191,897
FY 2013	1	1	9,619
Total, Construction	895,151	895,151	895,151

TEC

FY 2003	4,842	4,842	0
FY 2004	51,198	51,198	11,539
FY 2005	29,261	29,261	30,204
FY 2006	35,485	35,485	48,195
FY 2007	104,296	104,296	77,507
FY 2008	97,109	97,109	121,503
FY 2009	155,524	155,524	109,955
FY 2010	234,118	234,118	259,660
FY 2011	256,951	256,951	278,777
FY 2012	170,071	170,071	191,897
FY 2013	1	1	9,619
Total, TEC	1,138,856	1,138,856	1,138,856

Other Project Cost (OPC)

OPC except D&D

FY 2006	22,447	22,447	22,447
FY 2007	9,048	9,048	9,048
FY 2008	9,715	9,715	7,715
FY 2009	13,133	13,133	9,729
FY 2010	25,202	25,202	26,553
FY 2011	30,605	30,605	31,956
FY 2012	32,579	32,579	33,930
FY 2013	57,963	57,963	59,314
FY 2014	0	0	0

(dollars in thousands)			
	Appropriations	Obligations	Costs
Total, OPC except D&D	200,692	200,692	200,692
OPC			
FY 2006	22,447	22,447	22,447
FY 2007	9,048	9,048	9,048
FY 2008	9,715	9,715	7,715
FY 2009	13,133	13,133	9,729
FY 2010	25,202	25,202	26,553
FY 2011	30,605	30,605	31,956
FY 2012	32,579	32,579	33,930
FY 2013	57,963	57,963	59,314
FY 2014	0	0	0
Total, OPC	200,692	200,692	200,692
Total Project Cost (TPC)			
FY 2003	4,842	4,842	0
FY 2004	51,198	51,198	11,539
FY 2005	29,261	29,261	30,204
FY 2006	57,932	57,932	70,642
FY 2007	113,344	113,344	86,555
FY 2008	106,824	106,824	129,218
FY 2009	168,657	168,657	119,684
FY 2010	259,320	259,320	286,213
FY 2011	287,556	287,556	310,733
FY 2012	202,650	202,650	225,827
FY 2013	57,964	57,964	68,933
FY 2014	0	0	0
Total, TPC	1,339,548	1,339,548	1,339,548

FY 2008: Includes a Congressional Reprogramming of \$15,000,000 from the construction project (05-D-405) to Project Engineering and Design (03-D-414)

6. Details of Project Cost Estimate

(dollars in thousands)			
	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design (PED)			
Design	234,085	234,085	206,705
Contingency	9,620	9,620	37,000
Total, PED	243,705	243,705	243,705
Construction			
Site Preparation	27,263	27,263	27,263
Equipment	141,000	141,000	89,508
Other Construction	492,128	492,128	316,428
Contingency	234,760	234,760	49,000
Total, Construction	895,151	895,151	482,199
Total, TEC	1,138,856	1,138,856	725,904

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Contingency, TEC	244,380	244,380	86,000
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning	0	0	0
Conceptual Design	14,133	14,133	14,445
Start-Up	117,724	117,724	96,940
Contingency	30,450	30,450	22,000
Other OPC	38,385	38,385	40,048
Total, OPC except D&D	200,692	200,692	173,433
D&D			
D&D	0	0	0
Contingency	0	0	0
Total, OPC	200,692	200,692	173,433
Contingency, OPC	30,450	30,450	22,000
Total, TPC	1,339,548	1,339,548	899,337
Total, Contingency	274,830	274,830	108,000

7. Funding Profile History

Request		Prior Years	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	Out-years	Total
FY 2004	TEC	69,000	TBD	TBD						
	OPC	11,967	TBD	TBD						
	TPC	80,967	TBD	TBD						
FY 2005	TEC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	OPC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TPC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FY 2006	TEC	336,040	0	0	0	0	0	0	0	336,040
	OPC	103,960	0	0	0	0	0	0	0	103,960
	TPC	440,000	0	0	0	0	0	0	0	440,000
FY 2007 Performance Baseline	TEC	559,600	0	0	0	0	0	0	0	559,600
	OPC	120,400	0	0	0	0	0	0	0	120,400
	TPC	680,000	0	0	0	0	0	0	0	680,000
FY 2008	TEC	455,987	103,613	0	0	0	0	0	0	559,600
	OPC	44,000	5,000	71,400	0	0	0	0	0	120,400
	TPC	499,987	108,613	71,400	0	0	0	0	0	680,000
FY 2007 Congressional Notification	TEC	493,608	100,000	95,300	28,532	8,556	0	0	0	725,996
	OPC	55,061	20,726	25,652	56,887	11,960	3,055	0	0	173,341
	TPC	548,669	120,726	120,952	85,419	20,516	3,055	0	0	899,337
FY 2009	TEC	449,715	133,247	105,854	28,532	8,556	0	0	0	725,904
	OPC	55,061	20,726	25,652	56,887	11,960	3,147	0	0	173,433
	TPC	504,776	153,973	131,506	85,419	20,516	3,147	0	0	899,337
	TEC	477,715	234,118	256,951	170,071	1	0	0	0	1,138,856

FY 2010	OPC	54,343	25,202	30,605	32,579	57,963	0	0	0	200,692
	TPC	532,058	259,320	287,556	202,650	57,964	0	0	0	1,339,548
FY 2011	TEC	477,715	234,118	256,951	170,071	1	0	0	0	1,138,856
	OPC	54,343	25,202	30,605	32,579	57,963	0	0	0	200,692
	TPC	532,058	259,320	287,556	202,650	57,964	0	0	0	1,339,548

8. Related Operations and Maintenance Funding Requirements

Start of Operation or Beneficial Occupancy (fiscal quarter or date)	1Q FY2016
Expected Useful Life (number of years)	17
Expected Future Start of D&D	N/A

(Related Funding requirements)

(Dollars in Thousands)

	Annual Costs		Life Cycle Costs	
	Current Total Estimate	Previous Total Estimate	Current Total Estimate	Previous Total Estimate
Operations	63,443	61,686	1,083,957	960,425
Maintenance	10,785	10,686	184,273	184,975
Total, Operations & Maintenance	74,228	72,372	1,268,230	1,145,400

Start of Operation or Beneficial Occupancy (fiscal quarter or date): The operational start date above is based on data used to support the \$1,339.5 million total project cost estimate and associated performance measurement baseline (early finish) completion date. Should the projected schedule contingency of 126 weeks be fully realized, then the start of operation milestone would move out to the first quarter of fiscal year 2016.

9. Required D&D Information

Area	Square Feet
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This project is new construction which does not replace an existing facility. As part of the Office of Environmental Managements cleanup efforts, sites have established unique projects to perform Decontamination and Decommissioning. An estimated 2,200,000 square feet of buildings will have been removed from the Savannah River Sites inventory from fiscal year 2003 through fiscal year 2006. The square footage of this project will be offset against the Savannah River Site Decontamination and Decommissioning program's banked excess.

10. Acquisition Approach

The project acquisition strategy included the use of two separate contractors to perform conceptual design, which reduced project risk. Both contractors identified and managed technical and program risks through completion of conceptual design. Following completion of conceptual design, the Department selected one of the two contractors to perform preliminary and final design, construction, commissioning, and one year of operations. Design services were obtained through a competed contract with an Engineering, Procurement, and Construction contractor. The negotiated contract is a Cost-Plus-Incentive Fee arrangement, which also includes construction and commissioning services. Management and Operating contractor staff will be involved in areas concerning high level waste system interfaces, feed, and product specifications, etc.

Closure Sites

Funding by Site and Location

(dollars in thousands)

	FY 2009 Current Appropriation	FY 2009 Current Recovery Act Appropriation	FY 2010 Current Appropriation	FY 2011 Request
Closure Sites				
Closure Sites Administration	13,209	0	8,225	6,375
Fernald	2,100	0	0	0
Miamisburg	30,574	19,700	33,243	0
Total, Closure Sites	45,883	19,700	41,468	6,375

The Mound site will be completed by the end of FY 2010. Total operational management of the long-term stewardship mission at the Miamisburg Closure Project will be transferred to DOE's Office of Legacy Management in FY 2011.

Mound

Site Overview

The Miamisburg Mound Plant was built in the late 1940s to support research and development, testing, and production activities for DOE's defense nuclear weapons complex and energy research programs. The Miamisburg Closure Project contractor declared physical completion of environmental cleanup on July 31, 2006, and DOE accepted completion of that scope in March 2007. Subsequently, Congress directed additional remediation of Operable Unit 1 at this site. The Miamisburg Closure Project will be completed in FY 2010 and total operational management of the long-term stewardship mission at Miamisburg Closure Project will be transferred to DOE's Office of Legacy Management in FY 2011 to include total funding transfer of \$27,603,000.

American Recovery and Reinvestment Act (ARRA) Activities

The Mound American Recovery and Reinvestment Act activities are funded at \$19,700,000. American Recovery and Reinvestment Act funding will be used for remediation of Operable Unit 1 (historic landfill). Work at the site will result in the completion of the necessary excavation, waste management and disposal of the contaminated soils, provide verification samples and reports, backfill, and accomplish site restoration of the Operable Unit 1 Project Area to acceptable standards.

Site Description

The Miamisburg Closure Project site is located in Miamisburg, Ohio, 10 miles southwest of Dayton and 31 miles north of Cincinnati. The Miamisburg Mound plant's mission involved production of components, which contained plutonium-238, polonium-210, tritium, and large quantities of high explosives. This mission continued until 1994, when these activities were transferred to other DOE facilities.

Site Cleanup Strategy/Scope of Cleanup

Solid waste stabilization and disposition activities included the collection, storage, and disposition of waste, primarily waste generated from contaminated soil cleanup and waste from the decontamination and demolition of site buildings, including low-level waste, low-level mixed waste, transuranic waste, hazardous waste, and solid waste streams. Soil and building contamination was dominated by residual spread of thorium and plutonium. The site contractor declared physical completion in July 2006.

Operable Unit 1 (Historic Landfill) met the requirements under Comprehensive Environmental Response, Compensation, and Liability Act and had been accepted by the United States Environmental Protection Agency and Ohio Environmental Protection Agency. However, in FY 2006 Congress directed DOE to develop a mutually acceptable remedy with the Miamisburg Mound Community Improvement Corporation for Operable Unit 1 with an appropriation not to exceed \$30,000,000. A prioritized exhumation was the agreed upon remedy. Subsequently, a competitive procurement took place in FY 2006 and the EM Consolidated Business Center awarded an Indefinite Delivery/Indefinite Quantity contract in October 2006. During FY 2007, an additional \$4,500,000 was provided from available project funds to support additional remediation of high priority Operable Unit 1 areas. The available funds were expended and the site was returned to a protective state in FY 2008. In the FY 2009 Omnibus Budget, Congress provided an additional \$4,757,500 and the American Recovery and Reinvestment Act provided \$19,700,000 to resume the remediation of the Operable Unit 1 landfill to a level which will allow for the removal of an anticipated Environmental Protection Agency “No Dig” restriction. This is a Miamisburg Mound Community Improvement Corporation stipulation for their acceptance of the transfer of the Operable Unit 1 land parcel.

Final site remediation is projected in September 2010, including Operable Unit 1. Total operational management of the long-term stewardship mission at Miamisburg Closure Project will be transferred to DOE’s Office of Legacy Management in FY 2011.

Site Completion (End State)

The site contractor declared physical completion of the Miamisburg Closure Project in July 2006, and DOE completed their physical acceptance review and declared physical acceptance in March 2007. The Office of Legacy Management assumed operational control responsibility for the site in October 2006 and will assume total operational management of the long-term stewardship mission at Miamisburg Closure Project in FY 2011.

Regulatory Framework

In 1993 DOE/United States Environmental Protection Agency and the Ohio Environmental Protection Agency signed the Federal Facility Agreement.

Critical Site Uncertainties and Assumptions

Total operational management of the long-term stewardship mission at Miamisburg Closure Project will be transferred to DOE’s Office of Legacy Management in FY 2011.

Interdependencies

Wastes generated through remediation of Operable Unit 1 require commercial off-site disposal.

Contract Synopsis

An Indefinite Delivery/Indefinite Quantity contract with Accelerated Remediation Company for the Operable Unit 1 and Potential Release Site 441 was awarded in October 2006, and was planned to be completed in April 2008. Potential Release Site 7 scope was added to the Accelerated Remediation Company contract and was completed in 2009. As a result of additional funding provided by Congress and the American Recovery and Reinvestment Act in FY 2009, remediation of the Operable Unit 1 Landfill was resumed and will be completed in late FY 2010. Total operational management of the long-term stewardship mission at Miamisburg Closure Project will be transferred to DOE's Office of Legacy Management in FY 2011.

Cleanup Benefits

Closure and turnover of 24 buildings and 306 acres to the Miamisburg Mound Community Improvement Corporation were expected to be completed by the end of FY 2008. However, the Miamisburg Mound Community Improvement Corporation indicated they would not accept any portion of the Operable Unit 1 site which includes a Comprehensive Environmental Response, Compensation, and Liability Act no-dig restriction. As a result, additional funding was provided in FY 2009 to resume remediation of the Operable Unit 1 area. It is expected that this level of funding will be sufficient to remove the no-dig restriction and that the Miamisburg Mound Community Improvement Corporation will accept the parcel of land containing Operable Unit 1. Total operational management of the long-term stewardship mission at Miamisburg Closure Project will be transferred to DOE's Office of Legacy Management in FY 2011.

Funding Schedule by Activity

	(dollars in thousands)		
	FY 2009	FY 2010	FY 2011
Defense Environmental Cleanup			
Closure Sites			
CBC-0100-RF / CBC Post Closure Administration - Rocky Flats	9,302	6,375	6,375
CBC-0100-FN / CBC Post Closure Administration - Fernald	2,019	1,850	0
CBC-0100-MD / CBC Post Closure Administration - Mound	1,888	0	0
OH-FN-0030 / Soil and Water Remediation-Fernald	2,100	0	0
OH-MB-0030 / Soil and Water Remediation-Miamisburg	4,224	5,097	0
OH-MB-0100 / Miamisburg Post-Closure Administration	26,350	28,146	0
Subtotal, Closure Sites	45,883	41,468	6,375
Total, Defense Environmental Cleanup	45,883	41,468	6,375
Total, Closure Sites	45,883	41,468	6,375

Performance Measure Summary

	Complete through FY 2009	Complete through FY 2010	Complete through FY 2011	Life-Cycle	FY 2011 % Complete
Closure Sites					
Geographic Sites Eliminated (number of sites)	6	6	6	6	100.0%
Depleted and Other Uranium packaged for disposition (Metric Tons)	0	0	0	0	100.0%
Industrial Facility Completions (Number of Facilities)	441	441	441	441	100.0%
Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	616,927	616,927	616,927	616,927	100.0%
Material Access Areas eliminated (Number of Material Access Areas)	7	7	7	7	100.0%
Nuclear Facility Completions (Number of Facilities)	15	15	15	15	100.0%
Plutonium Metal or Oxide packaged for long-term storage (Number of Containers)	1,895	1,895	1,895	1,895	100.0%
Plutonium or Uranium Residues packaged for disposition (Kilograms of Bulk)	103,901	103,901	103,901	103,901	100.0%
Radioactive Facility Completions (Number of Facilities)	136	136	136	136	100.0%
Remediation Complete (Number of Release Sites)	549	549	549	549	100.0%
Transuranic Waste shipped for disposal (Cubic meters) - CH	15,036	15,036	15,036	15,036	100.0%

Detailed Justification

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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CBC-0100-FN / CBC Post Closure Administration - Fernald

2,019 1,850 0

This PBS can be found within the Defense Environmental Cleanup appropriation.

This Post-Closure Administration PBS scope includes the Fernald Closure Project regulatory support, Human Resource Management, Budget and Financial support, and administration of Freedom of Information and Privacy Act programs at the Fernald closure site.

In FY 2011, the following activities are planned:

- No activities are planned for the Fernald Project.

(dollars in thousands)

FY 2009	FY 2010	FY 2011
---------	---------	---------

Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
No metrics associated with this PBS					
Key Accomplishments (FY 2009)/Planned Milestones (FY 2010/FY 2011)					
<ul style="list-style-type: none">Complete record-of-decision for final disposition of waste currently held at WCS facility in Texas (October 2009)					

CBC-0100-MD / CBC Post Closure Administration - Mound

1,888 0 0

This PBS can be found within the Defense Environmental Cleanup appropriation.

This Post-Closure Administration PBS provides funding for the Mound Closure Project regulatory support, Human Resource Management, Budget and Financial support, and administration of Freedom of Information and Privacy Act programs at the closure site.

In FY 2011, the following activities are planned:

- Transfer to the Office of Legacy Management in FY 2011.

Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
No metrics associated with this PBS					

CBC-0100-RF / CBC Post Closure Administration - Rocky Flats

9,302 6,375 6,375

This PBS can be found within the Defense Environmental Cleanup appropriation.

The scope of this PBS is to provide site litigation support related to the continuing class actions and other civil litigation activities of former site contractors. This support does not include closure contract litigation support costs incurred by the Rocky Flats site closure contractor.

The Rocky Flats Closure Project achieved site closure in FY 2006. However, ongoing litigation support will continue until all litigation involving the Department of Energy or former Rocky Flats contractors is resolved. The EM Consolidated Business Center has assumed responsibility for the litigation associated with the Rocky Flats Site.

All litigations associated with the Rocky Flats Site are planned to be completed in FY 2011.

In FY 2011, the following activities are planned:

- Fund the end of the Rocky Flats Closure Project's legal requirements and court orders.

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
No metrics associated with this PBS					

OH-FN-0030 / Soil and Water Remediation-Fernald **2,100** **0** **0**

This PBS can be found within the Defense Environmental Cleanup appropriation.

The Soil and Water Remediation Project includes the characterization, remediation, and certification of all environmental media (soil, below-grade debris, and water). As of October 2006, Fernald had completed 100 percent of the contractually required remediation work.

In FY 2011, the following activities are planned:

- No activities are planned for the Fernald Project.

Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
Remediation Complete (Number of Release Sites)	2	2	2	2	100.0%

**OH-MB-0030 / Soil and Water Remediation-
Miamisburg** **4,224** **5,097** **0**

This PBS can be found within the Defense Environmental Cleanup appropriation.

This project remediates contaminants that were released into the environment during operation of the Mound Plant from 1940 through 1994. The site contractor declared physical completion of the Miamisburg Closure Project in July 2006, and DOE completed their physical acceptance review and declared physical acceptance in March 2007. The Office of Legacy Management will assume full operational responsibility for the site in FY 2011.

In FY 2011, the following activities are planned:

- Transfer to the Office of Legacy Management in FY 2011.

Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
Depleted and Other Uranium packaged for disposition (Metric Tons)	0	0	0	0	100.0%
Remediation Complete (Number of Release Sites)	178	178	178	178	100.0%

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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OH-MB-0100 / Miamisburg Post-Closure Administration

26,350 28,146 0

This PBS can be found within the Defense Environmental Cleanup appropriation.

This PBS supported Post-Closure Contract liabilities such as pension, retiree medical and life insurance. This scope is defined under Financial Accounting Standard 87 (Employers' Accounting for Pension), Financial Accounting Standard 106 (Employers' Accounting for Post-Retirement Benefits Other Than Pension), and estimated workers' compensation. Total operational management of the long-term stewardship mission at Miamisburg Closure Project will be transferred to DOE's Office of Legacy Management in FY 2011.

In FY 2011, the following activities are planned:

- Transfer to the Office of Legacy Management in FY 2011.

Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
No metrics associated with this PBS					

Total, Closure Sites

45,883 41,468 6,375

Explanation of Funding Changes

FY 2011 vs. FY 2010 (\$000)

Defense Environmental Cleanup

Closure Sites

Closure Sites Administration

CBC-0100-FN / CBC Post Closure Administration - Fernald

- Decrease is due to a decrease in legal requirements, court orders and post-closure administrative costs. -1,850

Miamisburg

OH-MB-0030 / Soil and Water Remediation-Miamisburg

- Project Completed. Decrease reflects the transfer of funding and responsibility for the Miamisburg Closure Project to the Office of Legacy Management. -5,097

OH-MB-0100 / Miamisburg Post-Closure Administration

- Project Completed. Decrease reflects the transfer of funding and responsibility for the Miamisburg Closure Project to the Office of Legacy Management. -28,146

Total, Closure Sites

-35,093

NNSA Sites

Funding by Site and Location

(dollars in thousands)

	FY 2009 Current Appropriation	FY 2009 Current Recovery Act Appropriation	FY 2010 Current Appropriation	FY 2011 Request
NNSA Sites				
California Site Support	0	0	238	238
Nevada	75,674	44,325	65,674	66,000
NNSA Service Center/Separations Processing Research Unit (SPRU)	19,443	51,775	17,938	15,547
Lawrence Livermore National Laboratory	688	0	910	635
Los Alamos National Laboratory	224,639	211,775	196,500	196,953
Pantex	1,000	0	0	0
Sandia National Laboratories	3,000	0	2,864	0
Total, NNSA Sites	324,444	307,875	284,124	279,373

NNSA Sites

The Department's Office of Environmental Management is responsible for the safe and efficient cleanup of the environmental legacy at the following National Nuclear Security Administration Sites: Lawrence Livermore National Laboratory-Livermore Site 300, Los Alamos National Laboratory, Nevada Test Site, Pantex Plant, Sandia National Laboratories, and the Separations Process Research Unit.

The Pantex Plant was completed in FY 2009 and transitioned into long-term stewardship and was funded by the National Nuclear Security Administration beginning in FY 2009. Also in FY 2010, the environmental monitoring and maintenance of the majority of corrective measures implemented in previous years at Lawrence Livermore National Laboratory Site 300 became the responsibility of the National Nuclear Security Administration with the exception of one area Operable Unit 9 Building 812 at Lawrence Livermore National Laboratory Site 300, which extends the completion of Lawrence Livermore National Laboratory Site 300 to FY 2014.

Lawrence Livermore National Laboratory

Site Overview

Lawrence Livermore National Laboratory is a National Nuclear Security Administration multi-disciplinary research and development center focusing on weapons development and stewardship and homeland security. The only Environmental Management program remaining at Lawrence Livermore National Laboratory is the Site 300 environmental restoration project. Operable Unit 9 Bldg. 812 Firing Table will remain the responsibility of EM until remediation of this area is complete, currently scheduled for FY 2014.

Site Description

Lawrence Livermore National Laboratory Site 300 is an 8,000-acre site located about 15 miles east of Livermore, California with limited development, primarily used for explosive hydrodynamic testing and analysis of weapons components. The surrounding is a sparsely populated rural agricultural land. There is soil and groundwater contamination on-site and limited groundwater contamination off-site.

Site Cleanup Strategy/Scope of Cleanup

The cleanup strategy is a risk-based and regulatory compliant approach that focuses first on those contaminant plumes and sources that are the greatest contributors to risk. The overall goal is to ensure that risks to the public and workers are controlled, followed by work to clean up soil and groundwater using a risk-based methodology.

Site Completion (End State)

At completion, all required groundwater and/or soil vapor extraction and treatment facilities will have been constructed and fully operational. Groundwater monitoring and risk and hazard management will continue. Legacy waste will have been disposed of offsite and the Newly Generated Waste program will be transferred to National Nuclear Security Administration. The last remaining cleanup area is Operable Unit 9, the Building 812 Firing Table, currently scheduled for completion in FY 2014.

Near-Term Projects:

Site 300 Completion - Recent results of a characterization study at Operable Unit 9 Building 812 Firing Table, as discussed in the project's Risk Management Plan since 2004, indicated that contamination levels exceed cleanup standards in this area and the regulators have directed cleanup action be taken. A Remedial Investigation/Feasibility Study is currently under review by the regulatory agencies to define alternatives for the remediation needed in this area.

Regulatory Framework

The Environmental Restoration activities at Lawrence Livermore National Laboratory Site 300 are governed by a site-specific Comprehensive Environmental Response, Compensation and Liability Act, Federal Facility Agreement, signed in 1992. A Record of Decision was signed in 2008 establishing ground water cleanup standards for the site as the Federal drinking water Maximum Contaminant Level unless California State Maximum Contaminant Levels are more stringent.

Critical Site Uncertainties and Assumptions

At Site 300, the major uncertainty is the remediation of the depleted uranium contaminated soil at the Operable Unit 9 Building 812 Firing Table. The challenges of the project include the excavation of soil from very steep terrain, large volumes of soil to be remediated and potential impacts to endangered species habitat and surface water drainage ways in the area during excavation and remediation.

Contract Synopsis

The Management and Operating contract with the University of California for operation of Lawrence Livermore National Laboratory expired on September 30, 2007. DOE/National Nuclear Security Administration selected Lawrence Livermore National Security, LLC as the new Management and Operations contractor in a base-plus-incentive-fee contract that began on October 1, 2007. The cleanup work at Site 300 comprises elements of the new contract's performance measures.

Cleanup Benefits

Cleanup of the Lawrence Livermore National Laboratory site has led to the final disposition of legacy waste inventories and the construction of groundwater treatment facilities at the Lawrence Livermore National Laboratory Main Site.

All 22 of the required groundwater and soil vapor extraction and treatment facilities at Lawrence Livermore National Laboratory Site 300 have been constructed and are operational. The soil removal action at the Building 850 Firing Table will be completed in FY2010, and the Operable Unit 9 Building 812 Firing Table remediation is currently scheduled for completion in FY2014.

Los Alamos National Laboratory

Site Overview

Since its inception in 1943 as part of the Manhattan Project, the primary mission of the Los Alamos National Laboratory has been nuclear weapons research and development. In achieving this mission, the Laboratory released hazardous and radioactive materials to the environment through outfalls, stack releases, and material disposal areas. Mixed low-level waste and transuranic waste have been staged in preparation for off-site disposition. Since 1989, the Environmental Management program at Los Alamos National Laboratory has been comprised of activities to address the characterization and cleanup of environmental media (i.e., soil and groundwater), the disposition of legacy waste, and the decontamination and decommissioning of nuclear facilities that are in the path of environmental sites in need of characterization and remediation.

American Recovery and Reinvestment Act Activities

The Los Alamos National Laboratory American Recovery and Reinvestment Act (ARRA) activities are funded at \$197,000,000 for Defense and \$14,775,000 for Non-Defense. Specifically, this funding will support decontamination and decommissioning of original structures at the Los Alamos National Laboratory site as well as work to achieve compliance with the Consent Order between the Department of Energy and the New Mexico Environment Department. Activities include:

- Decontamination and decommissioning of facilities in DP West and East, dating to the Manhattan Project era.
- Characterizing the types and quantities of waste contained in the historical disposal pits and trenches as part of the Material Disposal Area-B cleanup project. This project meets a Consent Order Milestone required by New Mexico Environment Department to be completed by December 30, 2010.
- Installation of 17 new groundwater monitoring wells to support final characterization and corrective measures evaluations for contaminated sites
- Decontamination and decommissioning of the DP Site Tritium Systems Test and Assembly, which was used for polonium, actinide and tritium research and production, and for the civilian fusion reactor program.

Site Description

Los Alamos National Laboratory is located in north-central New Mexico, in Los Alamos County, approximately 60 miles north-northeast of Albuquerque and 25 miles northwest of Santa Fe. The site is approximately 40 square miles and is situated on the Pajarito Plateau, which consists of a series of finger-like mesas separated by deep east-west-oriented canyons cut by streams. The surrounding land is largely undeveloped and large tracts of land North, West, and South of Los Alamos National Laboratory are held by other Federal agencies. In addition, there are four Native American Pueblos that border Los Alamos National Laboratory. There are four distinct geographical areas associated with the cleanup of Los Alamos National Laboratory:

- Town Site - This area includes solid waste management units associated with the Manhattan Project and early Cold War era Los Alamos National Laboratory operations and support. These sites are found on property currently owned by private citizens and local governments.
- Technical Area-21 -This work scope includes evaluation and implementation of corrective measures for material disposal areas A, T, U and V, the former process waste lines, and a broad category of environmental sites referred to as the Delta Prime Site Aggregate. This area served the process facilities in Delta Prime West and Delta Prime East including the Tritium Systems Test Assembly decontamination and decommissioning facility. Aggregates are areas defined in the enforceable State Compliance Order on Consent.
- Technical Area-54 - Former and active waste disposal areas for the Los Alamos National Laboratory are located at Technical Area-54, and the scope of work includes decontamination and decommissioning and the cleanup of several major material disposal areas (G, H, and L).
- Watersheds - There are eight watersheds across the Laboratory that collectively drains all run-offs from the Los Alamos National Laboratory to the Rio Grande. There are more than 650 sites within these eight Watersheds still requiring investigations and remediation.

Site Cleanup Strategy/Scope of Cleanup

Los Alamos National Laboratory has developed a comprehensive and detailed plan for cleanup of Environmental Management legacy waste sites at Los Alamos. This plan integrates the retrieval and disposition of legacy transuranic waste, decommissioning and decontamination of excess facilities at Technical Areas 21 and 54, and final remedy and site completion at approximately 860 remaining Solid Waste Management Units. The Los Alamos National Laboratory conducts assessments and corrective actions at contaminated sites to reduce unacceptable human health and ecological risks, and to reduce the inventory of legacy transuranic waste. The environmental restoration strategy is risk-based and complies with regulatory requirements to provide for future land use scenarios. The transuranic waste disposition strategy is to characterize, package, and ship waste to the Waste Isolation Pilot Plant. The strategy for decontamination and decommissioning and demolition of process-contaminated facilities at TA-21 and waste management facilities at TA-54 allows for characterization and cleanup of Solid Waste Management Units which are collocated in the footprint of the structures.

Site Completion (End State)

The end state for Environmental Management work is: (1) protection and monitoring of the regional aquifer which is the drinking water source for Los Alamos County; (2) cleanup of sites at Los Alamos National Laboratory and surrounding areas to levels appropriate for the intended land use; (3) decontamination, decommissioning, and removal of process contaminated facilities at TA-21 and waste management facilities at TA-54; (4) disposal of all legacy transuranic waste and mixed low-level waste from Los Alamos National Laboratory; and (5) installation of all long-term surveillance and monitoring systems. The lifecycle planning estimate for end date for cleanup is 2015.

Near-Term Projects:

Sediment Removal at LA-SMA-2 – LA-SMA-2 is an area of Polychlorinated Biphenyls and radioactive contamination identified during the characterization of the Upper Los Alamos Aggregate Area. Completion of this project is a requirement under the Consent Order and the completion milestone was added to the Stipulated Penalties list for FY 2010 by the New Mexico Environment Department.

TA-32 Cleanup Project – Supporting Los Alamos County re-development projects by completing cleanup of two Solid Waste Management Units identified as exceeding risk levels during the characterization of the Upper Los Alamos Aggregate Area.

Material Disposal Area H – This is an inactive 0.3-acre site used historically (1960 to 1986) for the disposal of classified solid-form waste. It consists of nine 60-foot deep shafts. The largest component of the inventory, 57 percent, is metal, both radioactive and non-radioactive (24 percent depleted uranium and 33 percent other metals). The Los Alamos National Laboratory has submitted an assessment of potential alternatives for cleanup. The New Mexico Environment Department is currently evaluating these alternatives and has the responsibility for selecting and defending a final remedy.

Cañon de Valle/260 Outfall - The Cañon de Valle/260 outfall includes the characterization and remediation at 140 Solid Waste Management Units/Areas of Concern located within Technical Areas-14, -15, and -16. These Solid Waste Management Units/Areas of Concern are expected to remain as industrial sites under DOE control for the foreseeable future. New Mexico Environment Department has required two wells to be abandoned, a well to be drilled and another deepened; in addition New Mexico Environment Department required an aquifer test work plan by February 2010. Groundwater well drilling was ongoing in FY 2009. The corrective measures implementation for the surface systems will start last quarter FY 2009 and continue through 2010.

Technical Area-21 - This project will characterize and remediate, if necessary, all Solid Waste Management Units within DP Site Aggregate at Technical Area-21, including characterization and construction of final remedies (engineered caps are assumed) at two material disposal areas (material disposal area A and T) and cleanup of three material disposal areas (material disposal area B, U, and V). The Consent Order completion milestone for the Los Alamos/Pueblo Watershed, which includes TA-21, is FY 2012.

Longer-Term Projects:

Corrective Actions - This project includes all investigations and subsequent remediation of Solid Waste Management Units intermixed with active Los Alamos National Laboratory operations. The investigation and cleanup activities for these Solid Waste Management Units (approximately 550) will be coordinated with managers for active mission projects to ensure no disruption of operations. This project includes Solid Waste Management Units in eight watersheds and 20 aggregate areas. The Consent Order requires completion of corrective actions at Sandia Watershed Aggregate Areas by January 2011; Mortandad Aggregate Areas by November 2012; Water Canyon/Canon de Valle, Pajarito, and Ancho/Chaquehui/Frijoles Aggregate Areas to be completed by September 2015.

Watershed Integration - The watershed integration work includes investigation and cleanup of the Canyons (sediments and alluvial groundwater), the investigation and remediation of contaminant plumes found in the intermediate and groundwater aquifers, interim monitoring and reporting of groundwater monitoring data as part of the Facility-Wide Groundwater Monitoring Project. Watershed integration

also executes the storm water management project to assess contaminant transport driven by storm events and takes remedial action to maintain compliance with requirements driven by the Individual Permit issued by the U. S. Environmental Protection Agency. Work conducted for the canyons and site-wide monitoring aggregates are driven by the Consent Order, whereas the Facilities Compliance Agreement and Administrative Order requirements (pending issuance of an individual permit) are separate from the Consent Order. Routine groundwater monitoring conducted in 2005 led to the identification of chromium contamination in regional groundwater at monitoring well R-28 located in Mortandad Canyon. Chromium concentrations at that well are approximately 400 µg/L (ppb) exceeding the New Mexico Environment Department and Environmental Protection Agency standards of 50 µg/L and 100 µg/L, respectively. The Laboratory has prepared and is implementing an “Interim Measures Work Plan” pursuant to a requirement from the New Mexico Environment Department. Objectives of the Interim Measure Work Plan are to determine the primary source(s) of chromium contamination and the nature of operations associated with releases, characterize the present-day spatial distribution of chromium and related constituents, collect data to evaluate the geochemical and physical/hydrologic processes that govern chromium transport, and collect and evaluate data to help guide subsequent investigations and remedy selection.

Technical Area-54 Closure - This area includes evaluation and implementation of corrective measures for material disposal areas G, H, and L. The corrective measures are presumed to be the installation and monitoring of engineered covers and installation and operation of a soil vacuum extraction system at material disposal area L. This area also includes the demolition of the waste staging and characterization buildings at Areas L and G to facilitate the installation of the final covers. This work includes the closure of former and active radioactive waste disposal areas for Los Alamos National Laboratory.

Transuranic Waste - Transuranic waste stored in drums, standard waste boxes, and over-sized containers that equates to 44,000 drum equivalents stored both above and below ground the Los Alamos National Laboratory must be characterized, certified, and shipped in accordance with the Carlsbad Field Office procedures. Some of the waste requires repackaging to remove prohibited items or for size reduction of large items such as glove-boxes. Categories of waste include:

- Pit 9 Transuranic Waste - The Pit 9 transuranic waste retrieval project scope is to retrieve the transuranic waste stored in Pit 9 and place it in an inspectable storage configuration.
- Trenches A–D - Trenches A-D contain 363 casks containing two 30-gallon drums each. This project will include the retrieval of the casks from the trenches and placement of the waste in inspectable storage configuration.
- Remote Handled Transuranic Waste - The remote handled retrieval project scope is to retrieve and ship the transuranic waste and hot cells, perform site characterization to determine final disposition path, and place in an inspectable storage configuration (if required). This project also includes site stabilization and removal of any contaminated soils resulting from any breached containers.

Regulatory Framework

The primary regulatory driver for the Environmental Management Projects at Los Alamos National Laboratory is the March 1, 2005, Compliance Order on Consent. The Consent Order, signed by the New Mexico Environment Department, Los Alamos National Laboratory and DOE, provides the primary requirements for the Los Alamos National Laboratory Environmental Restoration Project, and establishes an enforceable schedule and milestones for corrective actions.

Other drivers include the 1995 Federal Facilities Compliance Agreement, Public Law 105–119, 10 Code of Federal Regulations, Part 830, Nuclear Safety Management, a hazardous waste facility permit for storage and treatment, Federal Facility Compliance Order, the Atomic Energy Act, the Comprehensive Environmental Response, Compensation, and Liability Act, the Toxic Substances Control Act, the Resource Conservation and Recovery Act, the Clean Air Act, and the Individual Permit issued by the U. S. Environmental Protection Agency in February 2009 for storm water management at Los Alamos National Laboratory.

Critical Site Uncertainties and Assumptions

New Mexico Environment Department could continue to increase scope for characterization activities, several additional Phases of characterization have already been imposed on the site in the last 3 years. Also NMED could select more costly remedies for the material disposal areas than assumed in baseline plans, potentially increasing cost and schedule for completion of some of these material disposal areas.

Monitored natural attenuation for groundwater will be accepted as the remedy rather than active remediation processes that can be more expensive and longer in duration.

Regulators will approve cleanup levels for individual sites that correspond to the intended land use, thereby leaving in place some contaminants that do not pose unacceptable health and environmental risks.

The condition of the waste stored below-grade will be no worse than that experienced in the previous transuranic waste inspectable storage retrieval project. Adverse conditions could have negative impacts on the cost and schedule.

Interdependencies

For disposition of legacy waste, Los Alamos National Laboratory is dependent on Government Furnished Services and Items and support from the Carlsbad Field Office in the area of characterization, packaging, and transportation of transuranic waste to the Waste Isolation Pilot Plant.

Contract Synopsis

A new contract was awarded in December 2005 to Los Alamos National Security, LLC, which assumed responsibility on June 1, 2006. This contract is a management and operating cost-reimbursable contract with performance-based provisions. Individual tasks are executed through management and operating issued procurements. Acquisition planning and execution for the Los Alamos National Laboratory Environmental Management Program is conducted by the management and operating contractor. The management and operating contractor awards subcontracts to provide significant flexibility to achieve cleanup in the most cost-effective manner.

Cleanup Benefits

The Environmental Management Projects at Los Alamos National Laboratory support the DOE's mission by addressing legacy waste, legacy waste sites, and groundwater protection consistent with the Consent Order. Regulatory closure of Los Alamos National Laboratory legacy waste sites and completion of the Los Alamos National Laboratory Environmental Restoration Projects support the DOE goal of cleanup at Los Alamos National Laboratory. Cleanup at Los Alamos reduces the DOE footprint, allows for the transfer of lands to the County and other property owners, reduces risk to the citizens of Los Alamos County, surrounding Pueblo lands, and protects groundwater and surface waters of the State.

Nevada Test Site

Site Overview

The Nevada Test Site was the primary location for conducting nuclear tests and was established to conduct tests of both nuclear and conventional explosives in connection with the research and development of nuclear weapons. Field testing was primarily conducted at the Nevada Test Site; however, some storage and transportation experiments were conducted on the Nevada Test and Training Range, formerly known as the Nellis Air Force Range. Atmospheric nuclear weapons tests were initiated in 1951. Portions of the Nevada Test Site and the Nevada Test and Training Range, including the Tonopah Test Range, were used for chemical explosion tests of plutonium- and uranium-bearing materials. Nuclear tests conducted at the Nevada Test Site after July 1962 was underground.

American Recovery and Reinvestment Act

The Nevada Test Site American Recovery and Reinvestment Act (ARRA) activities are funded at \$44,325,000. Specifically, this funding will support the following activities: two ancillary structures will be demolished two new groundwater wells will be drilled in Pahute Mesa; four contaminated soil corrective action units (CAUs) (367, 374, 375, 106) will be characterized; and the RMAD and Pluto Facilities will be demolished. The Nevada Test Site will also maintain capability to dispose of low-level waste from approved generators throughout the DOE complex and mixed low-level waste as allowed under permit conditions as administered by the State of Nevada.

Site Description

The Nevada Test Site is located approximately 65 miles northwest of Las Vegas, Nevada and occupies approximately 1,375 square miles. The Nevada Test Site is surrounded by approximately 4,500 square miles of federally owned and Department of Defense-controlled land. The Nevada Test Site is surrounded by the Nevada Test and Training Range on the north, east, and west, and land managed by the U.S. Department of the Interior, Bureau of Land Management on the south and southwest. The Nevada Test and Training Range, which includes Tonopah Test Range, is used for military training. The Bureau of Land Management lands are used for grazing, mining, and recreation. The Nevada Test Site is in a remote and arid region with approximately 75 percent of its perimeter surrounded by Federal installations with strictly controlled access, and 25 percent adjacent to public lands that are open to public entry.

Site Cleanup Strategy/Scope of Cleanup

The EM program at the Nevada Test Site (including the Nevada Test and Training Range) consists of two primary projects: environmental restoration and waste management. The environmental restoration project scope is to assess and perform appropriate corrective actions at 879 former underground test locations, 113 surface or near-surface soil contamination locations, and more than 1,000 other industrial-type sites. The waste management project supports the completion of cleanup at DOE sites across the United States by maintaining the capability to dispose of low-level waste and mixed low-level waste.

The environmental restoration project scope addresses surface and shallow subsurface radiological soil contamination on the Nevada Test Site and Nevada Test and Training Range. Contamination at these sites is the result of historic nuclear detonations, safety experiments, storage- and transportation-related tests, nuclear reactor development and experiments, nuclear rocket engine tests, and hydronuclear experiments. The industrial-type site restorations address facility decontamination and decommissioning, various historical infrastructure remediation efforts (e.g., septic systems, mud pits, storage tanks, disposal sites, etc.), and conventional weapons cleanup including unexploded ordnance. The underground test area remediation involves geologic and hydrologic characterization, contaminated groundwater transport modeling, contaminant boundary definition and establishment of a monitoring system to protect against the inadvertent use of contaminated groundwater.

Site Completion (End State)

The long-term end state vision for the Nevada Test Site is to restore the environment to a level that will allow the continuation of the national security mission. This vision includes the removal of the contamination that poses an unacceptable risk to workers conducting planned site operations in support of the Nevada Site Office mission and characterizing and stabilizing the remainder of contamination to ensure effluent levels do not spread to the surrounding environment and pose an unacceptable risk to human health and the environment. The lifecycle planning estimate range for the end date of cleanup is 2027 to 2038.

Regulatory Framework

Nevada Site Office work at the Nevada Test Site and Nevada Test and Training Range follows all applicable federal level regulations including the Resource Conservation and Recovery Act, Clean Air Act, Clean Water Act, Atomic Energy Act, DOE Orders, and applicable Nevada specific laws, codes and acts relating to these regulations.

For the environmental restoration project, the primary regulatory process for addressing contaminants on the Nevada Test Site and surrounding areas (Nevada Test and Training Range) is the Federal Facility Agreement and Consent Order (1996).

For the waste management project, the primary regulatory process is the Federal Facility Compliance Act, which requires the Secretary of Energy to develop and submit Site Treatment Plans for the development of treatment capacity and technologies for treating mixed wastes.

Critical Site Uncertainties and Assumptions

The major assumptions are:

- Changes to the current Nevada Site Office regulatory framework, including consent agreements, state and federal regulations, and/or DOE orders will not impact the implementation of the Nevada Site Office EM baselines.
- There will not be a change in plans from limited to complete remediation (i.e., from “close in place” to “clean close”) of contaminated soils areas on the Nevada Test Site or the Nevada Test and Training Range.

- Subsurface contamination in and around the underground nuclear test cavities will not be removed, and post-closure monitoring will be conducted as agreed upon in the site completion reports for the subsurface.
- After subsurface completion, the final long-term hydrologic monitoring program will be defined in the site completion reports for the subsurface.
- Current land-use designations and subsurface intrusion restrictions will continue into the foreseeable future.

Interdependencies

- The Nevada Site Office is dependent on concurrence from the U.S. Air Force on negotiated cleanup levels and plans to develop engineered controls and establish use restrictions.
- Nevada Site Office is dependent on the State of Nevada and other regulators for approval of investigation, characterization, closure, and long-term stewardship plans as stipulated in the Federal Facility Agreement and Consent Order.
- Nevada Site Office is dependent on the State of Nevada for acceptance of mixed low-level waste for disposal at the Nevada Test Site.

Contract Synopsis

There are two primary contractors working on EM activities at Nevada Site Office. The Management and Operating Contractor for the Nevada Test Site is contracted to perform environmental restoration field remediation activities and the waste management scope on the Nevada Test Site (including Nevada Test and Training Range). The Environmental Characterization and Remediation Services Contractor is contracted to perform site investigation and characterization activities on the Nevada Test Site (including Nevada Test and Training Range).

Cleanup Benefits

The near- and long-term benefits for Nevada Site Office environmental restoration efforts include the overall reduction to potential human health and environmental risks, and restoration of the environment to a level that will allow the effective continuation of the national security mission conducted by the Nevada Site Office.

The near-term and long-term benefit for maintaining sufficient low-level and mixed low-level radioactive waste disposal capabilities is to support accelerated cleanup across the DOE complex. Disposing of radioactive waste from storage locations across the DOE complex in engineered disposal facilities at the Nevada Test Site will substantially reduce health and environmental risks at other DOE sites.

Pantex

Site Overview

Pantex has a continuing mission to support nuclear weapons activities for the Nation's stockpile. The primary missions of the Pantex Plant are to: 1) evaluate, retrofit, and repair nuclear weapons in support of life extension programs and certification of weapon safety and reliability programs; 2) dismantle nuclear weapons surplus to the stockpile; 3) sanitize components from dismantled weapons; 4) develop, test, and fabricate chemical and explosive components; and 5) provide interim storage and surveillance of the plutonium components.

Historical waste management practices at the Pantex Plant have resulted in contamination of soils and the upper Perched Aquifer. High explosives, metals, and solvents exist in soils located at the Pantex Plant. The Perched Aquifer contaminant plume has migrated past the Plant boundaries and onto adjacent landowners' properties to the southeast that EM recently purchased to achieve remedial action objectives required by the Record of Decision with Environmental Protection Agency, Region 6.

Site Description

The Pantex Plant is located in the Texas Panhandle, approximately 17 miles northeast of Amarillo, Texas. Pantex was deactivated in 1945 and sold to Texas Technical University as excess government property. In 1951 the Atomic Energy Commission reclaimed approximately 10,000 acres for the manufacturing of high explosives for the nuclear weapons program.

Site Cleanup Strategy/Scope of Cleanup

The legacy environmental cleanup mission at Pantex is complete.

Site Completion (End State)

The legacy environmental cleanup mission at Pantex was completed in FY 2009. The site will remain an active industrial site with 15 of 252 potential release sites remaining in operation. Decontamination and decommissioning activities, completed waste and debris removal completed in FY 2009.

Regulatory Framework

The environmental work is identified and conducted under the requirements of regulatory framework and agreements with Environmental Protection Agency, and the Texas Commission on Environmental Quality.

Critical Site Uncertainties and Assumptions

The legacy environmental cleanup mission at Pantex is complete. It is assumed that no additional actions will be required in the near term to address legacy contamination and that no active sites will be added to the Pantex scope.

Contract Synopsis

The Pantex Plant is operated by Babcock and Wilcox Technical Services Pantex, LLC under a cost-plus-award-fee Management and Operating contract.

Cleanup Benefits

Near Term Benefits: Enhanced onsite worker safety through source reduction efforts and site remediation. Protection of the Ogallala aquifer from cross contamination through the perched aquifer by implementing interim corrective measures such as a pump and treatment system, soil vapor extraction, in-situ bioremediation, and Playa 1 dewatering.

Sandia National Laboratories-New Mexico

Site Overview

The Sandia National Laboratories-New Mexico site is located in Albuquerque, New Mexico. The Sandia National Laboratories Environmental Restoration Project scope includes the remediation of inactive waste disposal and release sites at Albuquerque and other off-site locations. These sites have known or suspected releases of hazardous, radioactive, or mixed waste.

Site Description

The Sandia National Laboratories-New Mexico site is a multi-program national laboratory with research and development programs in a broad range of scientific and technical fields. It is located in Bernalillo County, New Mexico, 6.5 miles east of downtown Albuquerque. Sandia National Laboratories consists of five technical areas and several remote areas covering 2,820 acres in the eastern half of the 118 square miles of Kirtland Air Force Base. The base is situated on two broad mesas bisected by the Tijeras Arroyo and is bound by the Manzano Mountains to the east and the Rio Grande river to the west.

Site Cleanup Strategy/Scope of Cleanup

Environmental restoration at Sandia National Laboratories was initiated to assess and remediate 265 soil contaminated areas following federal, state and local statutes, as well as three groundwater areas. Three soil sites will remain as “deferred active mission sites” and require future remediation (future liability).

Site Completion (End State)

The actual risk level of the site and the expected future land use will be used to determine the end-state for all soil areas being cleaned up. The end-state will be reached when: 1) all of the solid waste management units and the groundwater areas of concern are remediated or remediation systems are constructed and operational, and all waste disposed of; and 2) the site is placed under institutional controls with long-term monitoring in accordance with State and Federal requirements.

Regulatory Framework

The regulatory driver for completing this work is the April 2004 New Mexico Environment Department Compliance Order on Consent.

Critical Site Uncertainties and Assumptions

There are two critical project uncertainties based primarily on the New Mexico Environment Department’s regulatory approval not being in place. First, the work schedule is jeopardized and the risk of added cleanup scope exists due to the regulatory uncertainty. Second, the requirement for additional public review of closure documents could delay completion. Regulatory uncertainty on three groundwater areas will exist until the final remedy that aligns with the exit strategy is received.

Interdependencies

The National Nuclear Security Administration assumed long-term stewardship responsibilities in FY 2007 for the completed 263 soil sites.

Contract Synopsis

The current management and operating contract between DOE and Sandia National Laboratories will exist for the remainder of the Environmental Management Project. Sandia National Laboratories will also keep several sub-contracts active beyond FY 2009 to assist with the completion of administrative regulatory closure requirements.

Cleanup Benefits

At the end of FY 2009, 265 of 268 soil release sites were completed. Three groundwater areas of concern for this project, however, are yet to be completed; these groundwater areas are currently in various stages of characterization.

Separations Process Research Unit

Site Overview

The Separations Process Research Unit is an inactive pilot plant used to research and develop the chemical process to separate plutonium from radioactive material. The Separations Process Research Unit operated from 1950 to 1953. Operation of the Separations Process Research Unit contaminated the nuclear facilities and impacted approximately thirty acres of land where waste containers were managed. Groundwater immediately adjacent to the nuclear facilities and in a limited area where containers were once stored, is also contaminated with radioactivity.

American Recovery and Reinvestment Activities

The Separations Process Research Unit American Recovery and Reinvestment Act (ARRA) activities are funded at \$51,775,000. Specifically, this funding will be used to remove radioactively-contaminated soils from the 15-acre North Field Area, a part of the Separations Process Research Unit Disposition Project, located at the Knolls Atomic Power Laboratory resulting in removal of 6,000 cubic yards of soil. Confirmation sampling will take place and the area will be restored as appropriate and two Separations Process Research Unit nuclear facilities (Buildings G2 and H2) at the Knolls Atomic Power Laboratory, will be decontaminated and decommissioned totaling approximately 50,000 square feet.

Site Description

The Separations Process Research Unit is located within the 170-acre Knolls Atomic Power Laboratory near Schenectady, New York, which is currently operated by the NNSA Naval Reactors Program. The Mohawk River forms the northern boundary of this site. In addition, industrial and residential areas also bound the site.

Site Cleanup Strategy/Scope of Cleanup

The proposed cleanup strategy for the project is to remove the nuclear facilities and remediate the land areas. This approach is consistent with DOE Environmental Management's strategic objectives to eliminate legacy facilities, stabilize and consolidate transuranic waste at the Waste Isolation Pilot Plant, meet site Resource Conservation and Recovery Act Permit investigation and cleanup requirements, eliminate surveillance and maintenance costs of the nuclear facilities, and allow DOE Environmental Management (EM) to close out an agreement with Naval Reactors for the disposition of the Separations Process Research Unit facilities. Upon completion of the Separations Process Research Unit project, the land will be transferred back to the Naval Reactors Program for their continuing mission use.

Site Completion (End State)

Taking into account Naval Reactors' continuing use of this site, and the fact that work with radioactive materials continues, the appropriate DOE Environmental Management end state for this site is to remove the contaminated excess facilities and restore land areas for continued industrial use. The cleanup work is scheduled to end in FY 2011.

Regulatory Framework

The Separations Process Research Unit project scope includes decommissioning and removal of facilities and cleanup activities using DOE's non-time critical removal action authority under the Comprehensive Environmental Response, Compensation, and Liability Act. In addition, the Separations Process Research Unit project has received a Resource Conservation and Recovery Act corrective action-only permit from New York State for investigation and cleanup of residual chemicals in several solid waste management units contained within the project areas.

Critical Site Uncertainties and Assumptions

Project risks currently being managed by the DOE Separations Process Research Unit Field Office and its contractors include the potential for unanticipated amounts of contaminated soil being encountered in the Separations Process Research Unit land areas, the potential for larger than anticipated labor needs for the removal of nuclear facilities, and the potential for encountering unforeseen types of contamination in the nuclear facilities.

Interdependencies

The major interdependency related to the Separations Process Research Unit is the ongoing relationship with Naval Reactors and Knolls Atomic Power Laboratory, as formally documented in a Memorandum of Agreement. Other interdependencies are associated with waste disposition and will include the Waste Isolation Pilot Plant, as well as other waste disposal sites selected by the Separations Process Research Unit contractors. The project will work with these sites to ensure the expeditious transportation of waste and compliance with site waste acceptance criteria.

Contract Synopsis

All contracts awarded since FY 2006 are administered by EM's Consolidated Business Center. A small business contractor was used to accelerate removal of small structures and improve small business involvement with the Separations Process Research Unit Project.

The Separations Process Research Unit Project is also making use of an existing EM Indefinite Delivery/Indefinite Quantity contract in support of both the land environmental restoration and building decontamination and decommissioning. Task orders have been awarded and field work began for both task orders during FY 2009.

Cleanup Benefits

The benefits of completing the Separations Process Research Unit Project are removal of a legacy Cold War project site, consolidation of transuranic waste at the Waste Isolation Pilot Plant, elimination of surveillance and maintenance costs of inactive nuclear facilities, and reutilization of land areas formerly occupied by the Separations Process Research Unit Project by the Naval Reactors Program.

Funding Schedule by Activity

(dollars in thousands)

	FY 2009	FY 2010	FY 2011
Defense Environmental Cleanup			
NNSA Sites			
VL-FOO-0013B-D / Solid Waste Stabilization and Disposition Support - Lawrence Livermore National Laboratory (Defense)	0	238	238
VL-NV-0100 / Nevada Community and Regulatory Support	4,169	2,556	2,562
VL-NV-0030 / Soil and Water Remediation-Nevada Test Site	58,657	58,794	53,840
VL-NV-0080 / Operate Waste Disposal Facility-Nevada	12,848	4,324	9,598
VL-FAO-0101 / Miscellaneous Programs and Agreements in Principle	1,443	2,938	3,047
VL-SPRU-0040 / Nuclear Facility D&D-Separations Process Research Unit	18,000	15,000	12,500
VL-LLNL-0031 / Soil and Water Remediation-Lawrence Livermore National Laboratory - Site 300	688	910	635
VL-LANL-0013 / Solid Waste Stabilization and Disposition-LANL Legacy	100,790	74,523	75,353
VL-LANL-0030 / Soil and Water Remediation-LANL	116,269	121,977	121,600
VL-LANL-0040-D / Nuclear Facility D&D-LANL (Defense)	5,675	0	0
VL-PX-0030 / Soil and Water Remediation-Pantex	1,000	0	0
VL-SN-0030 / Soil and Water Remediation-Sandia	3,000	2,864	0
Subtotal, NNSA Sites	322,539	284,124	279,373
Total, Defense Environmental Cleanup	322,539	284,124	279,373
Non-Defense Environmental Cleanup			
Small Sites			
VL-LANL-0040-N / Nuclear Facility D&D-LANL (Non-Defense)	1,905	0	0
Subtotal, Small Sites	1,905	0	0
Total, Non-Defense Environmental Cleanup	1,905	0	0
Total, NNSA Sites	324,444	284,124	279,373

Performance Measure Summary

	Complete through FY 2009	Complete through FY 2010	Complete through FY 2011	Life-Cycle	FY 2011 % Complete
NNSA Sites					
Geographic Sites Eliminated (number of sites)	7	7	7	12	58.3%
Industrial Facility Completions (Number of Facilities)	4	4	4	4	100.0%
Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	11,393	11,618	12,895	14,332	90.0%
Nuclear Facility Completions (Number of Facilities)	0	0	1	4	25.0%

Radioactive Facility Completions (Number of Facilities)	1	1	2	106	1.9%
Remediation Complete (Number of Release Sites)	3,432	3,468	3,564	5,078	70.2%
Transuranic Waste shipped for disposal (Cubic meters) - CH	3,721	4,680	7,893	14,287	55.3%
Transuranic Waste shipped for disposal (Cubic meters) - RH	16	16	16	94	17.0%

Detailed Justification

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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VL-FOO-0013B-D / Solid Waste Stabilization and Disposition Support - Lawrence Livermore National Laboratory (Defense)

0 238 238

This PBS can be found within the Defense Environmental Cleanup appropriation.

Cleanup activities at Site 300 will be completed in FY 2014. Activities performed in this project will continue to provide funding for:

- Grants to the State of California Regional Water Quality Control Board and the California Department of Toxic Substances Control to provide oversight. This funding is mandated by the Federal Facility Agreement signed by DOE, Environmental Protection Agency, and the State of California.
- Support for site investigations, hydrogeologic studies, regulatory review, and stakeholder liaisons are also managed within this project through wide applicability of these restoration activities. This project will end when all environmental restoration activities are completed at Site 300.

In FY 2011, the following activities are planned.

- Maintain regulatory interactions in support of Building 812 Firing Table cleanup.

Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
No metrics associated with this PBS					

VL-LLNL-0031 / Soil and Water Remediation-Lawrence Livermore National Laboratory - Site 300

688 910 635

This PBS can be found within the Defense Environmental Cleanup appropriation.

The remedial actions required by regulatory decision documents will reduce the risks, overall liability, and mortgage at Site 300 associated with 37 distinct groundwater plumes contaminated with volatile organic compounds, high explosives, nitrate, perchlorate, tritium, and/or depleted uranium. Build-out of the required

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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remediation network system will address risk reduction associated with groundwater contamination and will complete the project.

The Operable Unit 9 Building 812 Firing Table will remain the responsibility of EM until FY 2014 when soil remediation in the area is expected to be complete.

In FY 2011, the following activities are planned.

- Complete remedial investigation/feasibility study for Building 812.

Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
Remediation Complete (Number of Release Sites)	74	74	74	74	100.0%
Key Accomplishments (FY 2009)/Planned Milestones (FY 2010/FY 2011)					
<ul style="list-style-type: none"> ▪ Construct, install, and operate the GW extraction and treatment system in the Pit 7 Complex. (FY 2009) ▪ Removed contaminated surface soil and sand pile at Building 850. (FY 2009) ▪ Complete Building 812 Firing Table Proposed Plan (September 2011) 					

VL-LANL-0013 / Solid Waste Stabilization and Disposition-LANL Legacy

100,790 74,523 75,353

This PBS can be found within the Defense Environmental Cleanup appropriation.

The Solid Waste Stabilization and Disposition Project (PBS-VL-LANL-0013), also known as the Legacy Waste Disposition Project, is comprised of the treatment, storage, and disposal of legacy transuranic and mixed low-level waste generated between 1970 and 1999 at the Los Alamos National Laboratory. The end-state of this project is the safe disposal of legacy waste from Los Alamos National Laboratory.

This project scope is integrated with the Soil and Water Remediation Project (PBS-VL-LANL-0030) which includes compliance activities associated with the New Mexico Environment Department 2005 Compliance Order on Consent. The other driver requiring disposition of this waste is the Site Treatment Plan developed under the authority of the 1995 Federal Facility Compliance Agreement between the National Nuclear Security Administration and the Environmental Protection Agency. The Solid Waste Stabilization and Disposition Project includes disposition of legacy and generated, mixed, low-level waste and is scheduled to be completed by FY 2015. Transuranic Waste Operations continue under Carlsbad Field Office’s Central Characterization Project and the Los Alamos National Laboratory for contact- and remote-handled transuranic waste retrieval and disposition.

In FY 2011, the following activities are planned:

- Continue characterization and certification of transuranic waste for shipment to the Waste Isolation Pilot Plant.

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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In FY 2011, the following activities are planned:

- Completion of Phase II Investigation and submittal of the Phase II Report for Middle Los Alamos Canyon Aggregate Area.
- Completion of characterization activities for Upper Cañada del Buey, Two Mile, and Canyon de Valle Aggregate Areas; Completion of an additional twelve field campaigns; Completion of Investigation Reports for Upper Cañada del Buey, Two Mile, and Canyon de Valle Aggregate Areas; Completion of Investigation and Accelerated Clean-up Work Plans for Pajarito/Three Mile and Two Mile Aggregate Areas; Completion of Corrective Measures Evaluation Plans for Firing Site R-44, MDA AB, and MDA C.
- Completion of the Analytical Report for the General's Tanks; Completion of the Radiological Risk Assessment Report for the General's Tanks; Initiation of the Treatability Study for the General's Tanks; Completion of the Vapor Intrusion Assessment Report for MDA T; Completion of the Corrective Measures Evaluation Report for MDA T; Completion of the Corrective Measures Implementation design for MDA T; Completion of the Vapor Monitoring Reports for MDA V; Completion of the Clean-up and Characterization of SWMU 21-022(b)-99, Industrial Waste Lines
- A portion of the scope of work typically covered in this PBS is being executed with ARRA funding.

Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	5,426	5,426	5,426	5,426	100.0%
Remediation Complete (Number of Release Sites)	1,426	1,456	1,548	2,089	74.0%
Key Accomplishments (FY 2009)/Planned Milestones (FY 2010/FY 2011)					
<ul style="list-style-type: none"> ▪ Complete construction of the material disposal area (MDA) H landfill cap (FY 2009) ▪ Complete final engineered cover for Material Disposition Area H (Technical Area-54). (FY 2009) ▪ Complete construction of 260 Outfall Corrective Measures for alluvial/surface water treatment system. (FY 2009) ▪ Complete investigation and report for Upper Sandia Canyon Aggregate Area (May 2010) ▪ S-Site Aggregate Area Investigation Report (August 2010) ▪ Upper Canada del Buey Aggregate Area Investigation Report (November 2010) ▪ Complete Material Disposition Area T vapor intrusion assessment report (December 2010) ▪ Los Alamos National Laboratory Material Disposition Area B EMRAP - Remedy Completion Report for SWMU 21-015 (MDA B) (December 2010) ▪ Complete Material Disposition Are T CME report (January 2011) 					

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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- Complete phase 2 investigation and report for Middle Los Alamos Canyon Aggregate Area (March 2011)
- Complete and submit CME Plans for Firing Site R-44 (May 2011)
- Complete and submit CME Plans for Material Disposition Area C (May 2011)
- Annual Update of the Interim Facility-Wide Groundwater Monitoring Plan (2011) (May 2011)
- Complete cleanup and cleanup report for Three Mile Aggregate Area (May 2011)
- Complete cleanup and cleanup report of Two Mile Aggregate Area (July 2011)
- Two Mile Aggregate Area Investigation Report (July 2011)
- Complete and submit CME Plans for Material Disposition Area AB (August 2011)
- Individual Permit Reporting and Compliance (Annual Report) (September 2011)

VL-LANL-0040-D / Nuclear Facility D&D-LANL (Defense)

5,675 0 0

This PBS can be found within the Defense Environmental Cleanup appropriation.

There are several facilities excess to the DOE mission at the Los Alamos National Laboratory, including structures at Technical Area-21 and Technical Area-54 that require decommissioning and decontamination, in order to complete the EM mission at the Los Alamos National Laboratory and to maintain compliance with the New Mexico Environment Department Consent Order and the Order.

In FY 2011, the following activities are planned:

- No activities are planned.

Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
Radioactive Facility Completions (Number of Facilities)	0	0	0	99	0%
Key Accomplishments (FY 2009)/Planned Milestones (FY 2010/FY 2011)					
<ul style="list-style-type: none"> ▪ Complete D&D of DP West (FY 2009) ▪ Start D&D Field Work at DP West (October 2009) ▪ Remedy Completion Report for MDA L (July 2011) 					

VL-LANL-0040-N / Nuclear Facility D&D-LANL (Non-Defense)

1,905 0 0

This PBS can be found within the Non-Defense Environmental Cleanup appropriation.

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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The Tritium System Test Assembly Facility was transferred into the EM Program in FY 2003 for continued surveillance and maintenance, limited deactivation, and eventual demolition.

In FY 2011, the following activities are planned:

- No planned activities in FY 2011; the scope of work typically covered in this Program Baseline Summary is being executed with ARRA funding.

Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
Radioactive Facility Completions (Number of Facilities)	0	0	1	6	17.0%
Key Accomplishments (FY 2009)/Planned Milestones (FY 2010/FY 2011)					
<ul style="list-style-type: none"> ▪ Continue surveillance and maintenance activities at the Tritium Systems Test Assembly (FY 2009) ▪ Start demolition of the Tritium Systems Test Assembly (October 2009) 					

VL-NV-0030 / Soil and Water Remediation-Nevada Test Site

58,657 58,794 53,840

This PBS can be found within the Defense Environmental Cleanup appropriation.

The overall objective of this project is to provide for appropriate risk-based remediation of surface and subsurface contamination of industrial and soil contaminated sites. The cleanup is complex due to the number of sites, nature/extent of contamination, and site size/location. The surface contamination includes over 1,000 industrial-type sites and approximately 100 soil contamination sites on the Nevada Test Site and Nevada Test and Training Range. The subsurface contamination includes approximately 900 groundwater contamination sites on the Nevada Test Site. The industrial-type release sites are mainly support facilities and structures that were left after conducting aboveground and underground nuclear tests, surface nuclear engine and reactor experiments, and weapons delivery systems.

Currently, activities at approximately 1,000 industrial-type sites have been completed, and activities at approximately 1,000 other sites are in progress.

In FY 2011, the following activities are planned:

- Complete closure of one contaminated waste site and decontamination and decommissioning of one facility (Test Cell C).
- Continue decontamination and decommissioning activities at the Engine Maintenance, Assembly, and Disassembly Facility.
- Continue progress toward closure of 878 subsurface contaminated release sites on the Nevada Test Site.

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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- Complete the Frenchman Flat Phase II corrective action decision document and corrective action plan.
- Complete Rainier Mesa Phase I source term report.
- Complete Rainier Mesa Phase I contaminant boundary flow and transport model analysis and evaluation.
- Drill two data acquisition wells in Pahute Mesa.
- Complete two Pahute Mesa Phase II well development testing and sampling operations, and complete three well analyses.

Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
Remediation Complete (Number of Release Sites)	1,060	1,061	1,064	2,036	52.0%
Key Accomplishments (FY 2009)/Planned Milestones (FY 2010/FY 2011)					
<ul style="list-style-type: none"> ▪ Submit Corrective Action Unit 130 Closure Report (CR) (FY 2009) ▪ Submit Corrective Action Unit 117 Closure Report (FY 2009) ▪ Submit Corrective Action Unit 166 Closure Report (FY 2009) ▪ Continue underground test area analysis, evaluation, and monitoring network activities on the Nevada Test Site (September 2010/September 2011) ▪ Complete assessment and closure activities for industrial-type sites on the Nevada Test Site and the Tonopah Test Range (September 2010) ▪ Complete Assessment and Closure Activities for Contaminated Waste Sites on the Nevada Test Site and the Tonopah Test Range (September 2011) 					

VL-NV-0080 / Operate Waste Disposal Facility-Nevada **12,848** **4,324** **9,598**

This PBS can be found within the Defense Environmental Cleanup appropriation.

This Project provides low-level waste and mixed low-level waste disposal capability to meet the needs of all DOE sites through FY 2027. The amount of funding requested within this Program Baseline Summary depends on waste forecasts from DOE programs. Continuing the practice begun in FY 2009, non-EM programs will fund a share of this PBS based upon each program’s share of the waste disposed at the Nevada Test Site. Nevada maintains the capability to dispose low-level waste and mixed low-level waste (as allowed under permit conditions as administered by the State of Nevada), and disposal of classified matter from approved generators throughout the DOE complex. Discussions with the State are ongoing regarding the planning and permitting for a new mixed low-level waste disposal cell which could be operational at the end of FY 2011. The total Nevada Test Site low-level waste, mixed low-level waste, and classified matter life-

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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cycle volume from complex-wide generators is projected to be over 1.275 million cubic meters.

In FY 2011, the following activities are planned:

- Support cleanup activities across the DOE complex by disposing of approximately 39,500 cubic meters of low-level and mixed low-level radioactive waste. Of that total, 52 percent is estimated to be generated by ARRA-funded cleanup programs and 10 percent of the total estimated disposal will be mixed low-level waste.
- Continue audits and waste certification reviews in support of generator programs to ensure compliance with the Nevada Test Site Waste Acceptance Criteria.
- Continue developing and maintaining plans, permits, safety basis, and technical and regulatory support for activities such as the Nevada Test Site Resource Conservation and Recovery Act Part B Permit, Mutual Consent Agreement, Site Treatment Plan, and Consent Orders.

Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
No metrics associated with this PBS					
Key Accomplishments (FY 2009)/Planned Milestones (FY 2010/FY 2011)					
<ul style="list-style-type: none"> ▪ Dispose low-level waste and mixed low-level waste (FY 2009) ▪ Dispose low-level waste in support of the DOE Complex; conduct audits; maintain technical/safety documentation (September 2010) ▪ Dispose low-level waste in Support of DOE Complex; Conduct Audits; Maintain Technical/Safety Documentation (September 2011) 					

VL-NV-0100 / Nevada Community and Regulatory Support

4,169 2,556 2,562

This PBS can be found within the Defense Environmental Cleanup appropriation.

This PBS provides support for Agreements in Principle with three state agencies including the Nevada Division of Emergency Management, the Nevada Division of Environmental Protection, and the Nevada Department of Human Resources. This PBS also includes funding for the annual Federal Facilities Agreement and Consent Order fee and a grant with the University of Nevada, Las Vegas.

In FY 2011, the following activities are planned:

- Provide support for State of Nevada regulatory oversight of the Nevada Test Site, for Community Advisory Board activities, and for the agreements and grants with organizations in the State of Nevada.

(dollars in thousands)

			FY 2009	FY 2010	FY 2011
Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
No metrics associated with this PBS					
Key Accomplishments (FY 2009)/Planned Milestones (FY 2010/FY 2011)					
<ul style="list-style-type: none"> Provide Regulator and Stakeholder Funding (FY 2009/September 2010/September 2011) 					

VL-FAO-0101 / Miscellaneous Programs and Agreements in Principle

1,443 2,938 3,047

This PBS can be found within the Defense Environmental Cleanup appropriation.

The New Mexico Agreement in Principle reflects the understanding and the commitments between the parties regarding DOE’s provision to New Mexico of additional technical and financial support for State activities in environmental oversight, and monitoring to provide independent verification of DOE’s compliance with applicable federal, state and local laws, including rules, regulations, and standards at Los Alamos National Laboratory.

In FY 2011, the following activities are planned:

- Support the New Mexico Agreement in Principle.
- Support the Natural Resource Damage Assessment at Los Alamos National Laboratory.

Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
No metrics associated with this PBS					
Key Accomplishments (FY 2009)/Planned Milestones (FY 2010/FY 2011)					
<ul style="list-style-type: none"> New Mexico fulfills Agreement-in-Principle (FY 2009) 					

VL-SPRU-0040 / Nuclear Facility D&D-Separations Process Research Unit

18,000 15,000 12,500

This PBS can be found within the Defense Environmental Cleanup appropriation.

The project objectives are to remove the inactive nuclear facilities and disposition the chemical and radioactive contamination in land areas and return the areas back the Knolls Atomic Power Laboratory for continued mission use by the Naval Reactors Program.

In FY 2011, the following activities are planned:

- Complete the North Field contaminated soil cleanup (15 acres remediated).
- Complete removal of tanks and tanks waste from building H2 vaults.

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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- Complete shipments of all transuranic and other waste from the Site.
- A portion of the scope of work typically covered in this Program Baseline Summary is being executed with ARRA funding.

Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
Transuranic Waste shipped for disposal (Cubic meters) - CH	0	0	50	50	100.0%
Nuclear Facility Completions (Number of Facilities)	0	0	1	4	25.0%
Remediation Complete (Number of Release Sites)	0	4	5	6	83.0%
Key Accomplishments (FY 2009)/Planned Milestones (FY 2010/FY 2011)					
<ul style="list-style-type: none"> ▪ Conduct surveillance and maintenance to allow the facilities (FY 2009) ▪ Tank waste and other process residuals will be consolidated and packaged for shipment. (September 2010) ▪ Clean-up 4 Resource Conservation and Recovery Act Solid Waste Management Units in the Lower Level Rail Bed (September 2010) ▪ Complete Soil Removal for Lower Level (September 2010) ▪ Complete Shipment of transuranic waste (September 2011) ▪ Complete Soil Removal (September 2011) 					

VL-PX-0030 / Soil and Water Remediation-Pantex **1,000** **0** **0**

This PBS can be found within the Defense Environmental Cleanup appropriation.

As of the end of FY 2008, joint approval by the Environmental Protection Agency and the Texas Commission on Environmental Quality result in closure of 237 release sites, with an additional 15 active release sites remaining in operation after project completion in FY 2009.

In FY 2011, no activities are planned:

- Project complete.

Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
Remediation Complete (Number of Release Sites)	237	237	237	237	100.0%

VL-SN-0030 / Soil and Water Remediation-Sandia **3,000** **2,864** **0**

This PBS can be found within the Defense Environmental Cleanup appropriation.

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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In FY 2011, the following activities are planned.

- No activities are planned.

Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
Radioactive Facility Completions (Number of Facilities)	1	1	1	1	100.0%
Remediation Complete (Number of Release Sites)	263	264	264	264	100.0%
Key Accomplishments (FY 2009)/Planned Milestones (FY 2010/FY 2011)					
<ul style="list-style-type: none">▪ Submit Notice of Disapproval (NOD) Response on Tijeras Arroyo Groundwater Investigation Report (FY 2009)▪ Submit NOD Response on Tech Area-V GW on CME Report (FY 2009)▪ Start Mixed Waste Landfill Cover Installation (FY 2009)▪ Start Public Hearing on Chemical Waste Landfill (FY 2009)▪ Submit Final CMI (Resource Conservation and Recovery Act) Report to the New Mexico Environment Department for Chemical Waste Landfill (March 2010)▪ Submit Corrective Measure Implementation (CMI) Report for the Mixed Waste Landfill (MWL) to the New Mexico Environment Department. (March 2010)▪ Complete characterization on 4 new Mixed Waste Landfill Groundwater Wells (May 2010)					

Total, NNSA Sites

324,444

284,124

279,373

Explanation of Funding Changes

FY 2011 vs. FY 2010 (\$000)

Defense Environmental Cleanup

NNSA Sites

Lawrence Livermore National Laboratory

VL-LLNL-0031 / Soil and Water Remediation-Lawrence Livermore National Laboratory - Site 300

- Decrease attributable to the completion of the bench scale treatability study for cleanup of the Building 812 Firing Table. -275

Los Alamos National Laboratory

VL-LANL-0013 / Solid Waste Stabilization and Disposition-LANL Legacy

- The increase is attributable to additional mixed low-level waste shipments of transuranic waste to the Waste Isolation Pilot Plant for disposal. 830

VL-LANL-0030 / Soil and Water Remediation-LANL

- Decrease reflects the base program scope of the Material Disposal Area B cleanup and monitoring wells activities that is now being funded by ARRA. -377

Nevada

VL-NV-0030 / Soil and Water Remediation-Nevada Test Site

- Decrease is due to the completion of release sites associated with buried waste, the completion of monitoring network design. -4,954

VL-NV-0080 / Operate Waste Disposal Facility-Nevada

- The increase is for the share of disposal costs direct-funded by EM. The balance of funds for base disposal operations will be obtained through transfer of funding from other DOE mission programs generating waste and potential other sources. 5,274

VL-NV-0100 / Nevada Community and Regulatory Support

- No significant change. 6

NNSA Service Center/Separations Processing Research Unit (SPRU)

VL-FAO-0101 / Miscellaneous Programs and Agreements in Principle

- No significant change. 109

VL-SPRU-0040 / Nuclear Facility D&D-Separations Process Research Unit

- Decrease reflects the acceleration of the North Field land Remediation and completion of demolition of nuclear facility Buildings G2 and H2 to facilitate return of land to Naval Reactors for future use. -2,500

Sandia National Laboratories

VL-SN-0030 / Soil and Water Remediation-Sandia

FY 2011 vs. FY 2010 (\$000)

-2,864

- The decrease is attributable to the planned work-scope being completed.

Total, NNSA Sites

-4,751

West Valley Demonstration Project

Funding by Site

(dollars in thousands)

	FY 2009 Current Appropriation	FY 2009 Current Recovery Act Appropriation	FY 2010 Current Appropriation	FY 2011 Request
West Valley Demonstration Project	65,500	73,875	58,074	58,074
Total, West Valley Demonstration Project	65,500	73,875	58,074	58,074

Site Overview

The West Valley Demonstration Project is being executed at the site of the only commercial nuclear fuel reprocessing facility to have operated in the United States. The West Valley Demonstration Project is located on the site of the Western New York Nuclear Service Center, of which title is held by the New York State Energy Research and Development Authority. The principal mission of DOE is to satisfy the mandates established by the West Valley Demonstration Project Act of 1980 (Public Law 96-368):

- Solidify, in a form suitable for transportation and disposal, the high-level waste;
- Develop containers suitable for permanent disposal of the solidified high-level waste;
- Transport, in accordance with applicable law, the solidified waste to an appropriate disposal site;
- Dispose of low-level waste and transuranic waste produced by high-level waste solidification activities;
- Decontaminate and decommission tanks and facilities used for solidification of high-level waste, as well as any material and hardware used in connection with the Project, in accordance with Nuclear Regulatory Commission requirements.

American Recovery and Reinvestment Act Activities

The West Valley American Recovery and Reinvestment Act (ARRA) activities are funded at \$73,875,000. Specifically, this funding will be used to begin work on demolition of former process buildings and installation of a system to prevent migration of groundwater contamination. Radioactive waste treatment and disposal activities will also be accelerated to shrink the area of site contamination. American Recovery and Reinvestment Act funds at West Valley will be used to process approximately 1,500 cubic feet of contact-handled transuranic waste, low-level and mixed low-level wastes for off-site disposal.

- Installation of a Tank and Vault Drying System to support reducing risk of liquid releases associated with high-level waste tank heels presently contained in tank bottoms. This work supports the

Environmental Impact Statement Record of Decision to safely manage the tanks in the near-term (up to 30 years) and defer final decision making. It is anticipated that regardless of which final closure option is selected (options include - tank exhumation or closing in place), the Tank and Vault Drying System will be decommissioned and removed.

- Removal of approximately 18,000 gallons of liquids from the Main Plant Process Building to support decontamination and eventual demolition.
- Implementation of mitigation measures for managing the North Plateau Groundwater Plume by installing a permeable treatment wall at the site premises fence line.
- Completion of demolition of the 01-14 building containing sodium bearing waste process equipment.

Site Description

The West Valley Demonstration Project is located approximately 40 miles south of Buffalo, New York. DOE has operational responsibility for approximately 165 acres located near the center of the larger 3,345 acre Western New York Nuclear Service Center, which is owned by the State of New York.

Site Cleanup Strategy/Scope of Cleanup

DOE has completed the first two mandates of the West Valley Demonstration Project Act – solidification of the liquid high-level waste and development of containers suitable for permanent disposal of the high-level waste. There are currently 275 high-level waste canisters that have been produced that are in safe storage within the former spent fuel reprocessing plant. The remaining work to be completed by DOE at West Valley includes (1) shipment of the high-level waste canisters for off-site disposal; (2) disposal of Project-generated low-level waste and transuranic waste; and (3) facility decontamination and decommissioning. Additionally, in accordance with the DOE and New York State Energy Research and Development Authority spent fuel agreement, DOE shipped 125 spent fuel assemblies to the Idaho National Environmental and Engineering Laboratory in July 2003.

The technical, schedule and cost considerations associated with decommissioning of the West Valley Demonstration Project are being considered during development of the Decommissioning and/or Long Term Management Environmental Impact Statement. A Record of Decision is planned for issuance in March 2010. As such, DOE will focus its near-term efforts on waste disposition, process building decontamination and removal of non-essential facilities that can precede in the near-term while the Decommissioning Environmental Impact Statement is completed.

Site Completion (End State)

Until DOE completes its evaluation and analysis of various closure alternatives in the Decommissioning Environmental Impact Statement and issues a Decommissioning Record of Decision, DOE plans to proceed toward Interim End State completion in FY 2011. DOE anticipates that this acceleration can be achieved through the influx of American Recovery and Reinvestment Act funds. The West Valley Demonstration Project Interim End State is defined as:

- Shipment of all low-level waste and transuranic waste generated by DOE as a result of the high-level waste solidification project;

- Deactivation, demolition, and removal of all DOE-managed facilities (foundations remain), with the exception of: 1) former spent nuclear fuel reprocessing facility (Main Plant Process Building) and any other support facilities required for the interim storage of the high-level waste canisters; 2) the Remote-Handled Waste Processing Facility; 3) the Vitrification Facility; and 4) the Waste Tank Farm.
- Removal of major components and decontamination of the Main Plant Process Building;
- Configuring utilities and infrastructure to achieve cost effective long-term storage and maintenance of the Main Plant Process Building and other facilities including the Waste Tank Farm, until off-site transport of the high-level waste canisters can be facilitated;
- Initiate activities to support construction of a Dry Storage Facility for the High Level Waste canisters and removal of the High Level Waste canisters from the Main Plant Process Building.
- Install Permeable Treatment Wall to mitigate North Plateau Sr-90 Plume Expansion

The Decommissioning, and/or Long Term Stewardship Environmental Impact Statement Record of Decision, currently planned in March 2010, will establish long-term activities required to achieve final site end state. DOE will proceed with the actions consistent with the Record of Decision. The Record of Decision will address the following actions:

- Decommissioning of the Waste Tank Farm;
- Remediation of lagoons, sludge ponds and water treatment systems;
- Removal and disposal of facility foundations and contaminated soil;
- Decommissioning and removal of the Remote-Handled Waste Processing Facility;
- Installation of erosion controls and environmental monitoring requirements;
- Implementation of other actions as consistent with the Decommissioning Environmental Impact Statement and Record of Decision;
- Construction of High-level Waste Canister Load-out Facility and a Dry Storage Facility;
- Moving high-level waste canisters from the Main Plant Processing Facility to the Dry Storage Facility;
- Final decommissioning of the Main Plant Process Building and the Vitrification Facility, consistent with Decommissioning Environmental Impact Statement Record of Decision;
- Demolition and removal of any other interim storage support facilities.
- Future demolition and removal of the Dry Storage Facility and support facilities;

- Transition of the site back to the State of New York.

Regulatory Framework

Cleanup and environmental remediation activities at West Valley are governed by the following statutes, regulations, and agreements:

- The West Valley Demonstration Project Act (Public Law 96-368) required the Secretary of Energy to carry out a high-level radioactive waste management project at the Western New York Nuclear Services Center.
- Cooperative Agreement between DOE and New York State Energy Research and Development Authority (1980, amended 1981) implements of the West Valley Demonstration Project Act of 1980. It allows DOE use and control of the 165-acre West Valley Demonstration Project premises and facilities for the purposes and duration of the Project.
- Memorandum of Understanding between DOE and Nuclear Regulatory Commission (1981) identifies roles, responsibilities, terms and conditions agreed to regarding Nuclear Regulatory Commission review and consultation during the course of the Project.
- Stipulation of Compromise Settlement agreement (1987) represents the legal compromise reached between the Coalition on West Valley Nuclear Waste and Radioactive Waste Campaign and the DOE regarding development of a comprehensive Environmental Impact Statement for the Project and for on-site and off-site disposal of low-level waste.
- Supplemental Agreement to the Cooperative Agreement (1991) sets forth special provisions for the preparation of a joint Environmental Impact Statement between the DOE and New York State for facility decommissioning.
- Resource Conservation and Recovery Act 3008(h) Administrative Order on Consent (1992) between the United States Environmental Protection Agency, the New York State Department of Environmental Conservation, DOE and New York State Energy Research and Development Authority regarding Resource Conservation and Recovery Act.
- Cooperative Agreement between the Seneca Nation of Indians and the West Valley Demonstration Project (1996) establishes a framework for inter-governmental relationships between the Seneca Nation of Indians and the DOE with respect to Project activities.
- The Final Environmental Impact Statement for Decommissioning and/or Long Term Stewardship and the associated Record of Decision are scheduled for completion in March 2010. The preferred alternative is Phased Decision making in which the decommissioning would be completed in two phases. Phase 1 activities are expected to take eight to ten years to complete. In addition, during the first phase, this alternative provided for additional site characterization and scientific studies to facilitate consensus decision making for the remaining facilities or areas.

A Phase 2 decision would be made within ten years after the initial DOE Record of Decision and New York State Energy Research and Development Authority Findings Statement if the Phased Decision making Alternative is selected.

Critical Site Uncertainties and Assumptions

The following assumptions support the planning basis for achieving Interim End State completion:

- The Project will be able to disposition higher activity low-level waste off-site, without obstruction, consistent with the 2005 Waste Management Record of Decision.
- Supplemental analyses and amendments to the Record of Decision, as necessary, will allow for off site disposition of other Project waste (e.g., transuranic waste).
- A defense determination for the Project's transuranic waste will be made in FY 2010, which will determine the disposition pathway for this waste. Due to uncertainties in the outcome of the defense determination, the Project's transuranic waste has been integrated into the Department's ongoing Greater Than Class C low-level waste disposal EIS. If a defense determination is made, the defense portion of the waste stream could then be integrated into the complex-wide shipping schedule to support off-site disposition at the Waste Isolation Pilot Plant beginning in FY 2010.
- New York State Energy Research and Development Authority will continue as a joint lead agency in the Environmental Impact Statement process.

The largest uncertainty for defining remaining project scope is the outcome of the Environmental Impact Statement and the Record of Decision.

Interdependencies

Completing the West Valley Demonstration Project Act requires off-site disposal of low-level waste, mixed low-level waste, transuranic waste, and high-level waste. Thus, the project is dependent on other sites for these disposal services. Disposal of non-defense transuranic waste is currently dependent on completion of the Greater Than Class C low-level waste disposal EIS and resulting record(s) of decision.

Contract Synopsis

The contract for completion of the Interim End State at West Valley Demonstration Project was awarded to West Valley Environmental Services in June 2007 and will continue through June 2011. DOE anticipates awarding a contract for implementing the Decommissioning Environmental Impact Statement Record of Decision in 2011.

Cleanup Benefits

West Valley Demonstration Project plans to achieve Interim End State completion in FY 2011. At that point, all of the work that can be accomplished within current regulatory authorities will have been completed including off-site disposition of low-level waste and other waste with a pathway for disposal, decontamination and demolishment of facilities and infrastructure no longer needed to support safe site operations, and decontamination of the Main Plant Process Building. The site will then implement the Decommissioning Environmental Impact Statement Record of Decision issued in 2010.

Funding Schedule by Activity

(dollars in thousands)

	FY 2009	FY 2010	FY 2011
Non-Defense Environmental Cleanup			
West Valley Demonstration Project			
OH-WV-0013 / Solid Waste Stabilization and Disposition-			
West Valley	21,003	12,639	15,917
OH-WV-0040 / Nuclear Facility D&D-West Valley	44,497	45,435	42,157
Subtotal, West Valley Demonstration Project	65,500	58,074	58,074

Performance Measure Summary

	Complete through FY 2009	Complete through FY 2010	Complete through FY 2011	Life-Cycle	FY 2011 % Complete
West Valley Demonstration Project					
Geographic Sites Eliminated (number of sites)	0	0	0	1	0%
High-Level Waste packaged for final disposition (Number of Containers)	275	275	275	275	100.0%
Industrial Facility Completions (Number of Facilities)	13	14	29	29	100.0%
Liquid Waste in Inventory eliminated (Thousands of Gallons)	814	814	814	814	100.0%
Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	27,986	27,986	29,899	29,899	100.0%
Nuclear Facility Completions (Number of Facilities)	3	4	12	14	85.7%
Radioactive Facility Completions (Number of Facilities)	4	4	6	13	46.2%
Transuranic Waste shipped for disposal (Cubic meters) - CH	0	0	571	1,142	50.0%
Transuranic Waste shipped for disposal (Cubic meters) - RH	0	0	277	555	49.9%

Detailed Justification

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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OH-WV-0013 / Solid Waste Stabilization and Disposition-West Valley

21,003 12,639 15,917

This PBS can be found within the Non-Defense Environmental Cleanup appropriation.

The solid waste stabilization and disposition project at the West Valley Demonstration Project involves

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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performed consistent with the Nuclear Regulatory Commission criteria and the Record of Decision to most effectively reduce worker, public, and environmental risks. In December 2009, DOE submitted a Decommissioning Plan for the Main Plant Process Building to the Nuclear Regulatory Commission. DOE is in the process of responding to the Nuclear Regulatory Commission’s Request for Additional Information and anticipates Nuclear Regulatory Commission providing their Technical Evaluation Report in February 2010. To support decontamination and decommissioning efforts, safety management and maintenance at the site are in compliance with federal and state statutes, as well as DOE orders and requirements.

In FY 2011, the following activities are planned:

- Continue decontamination of the Main Plant Process Building.
- A portion of the scope of work typically covered in this PBS is being executed with ARRA funding.
- Maintaining essential services for the site.

Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
Nuclear Facility Completions (Number of Facilities)	3	4	12	14	86.0%
Radioactive Facility Completions (Number of Facilities)	4	4	6	13	46.0%
Industrial Facility Completions (Number of Facilities)	13	14	29	29	100.0%
Key Accomplishments (FY 2009)/Planned Milestones (FY 2010/FY 2011)					
<ul style="list-style-type: none"> ▪ Issue Draft DEIS for Review (FY 2009) ▪ Continue dismantlement/removal of 2 facilities and structures no longer necessary to support safe site operations. (FY 2009) ▪ Complete dismantlement/removal of 10 facilities and structures no longer necessary to support safe site operations. (June 2010) ▪ Complete dispositioning/decontamination of 4 cells/rooms former spent nuclear fuel processing facility and 1 room; cell in the Vit Facility. (June 2010) ▪ Decontaminate 26 cells/rooms/ancillary facilities (September 2010) ▪ WVDP Interim End State Completion - Process building (Former Spent Nuclear Fuel Reprocessing Facility decontaminated and put in a cost effective condition for high-level waste canister storage, low-level waste, and transuranic waste shipped off-site for disposal, non-essential facilities demolished or removed (foundations remain). (September 2011) 					

Total, West Valley Demonstration Project	65,500	58,074	58,074
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Explanation of Funding Changes

FY 2011 vs. FY 2010 (\$000)

Non-Defense Environmental Cleanup

West Valley Demonstration Project

OH-WV-0013 / Solid Waste Stabilization and Disposition-West Valley

- Increase in funding allows completion of the Interim End State scope by 2011; while continuing processing and disposal of newly generated waste; processing of high activity low-level and transuranic waste through the remote-handled waste facility; and packaging and storage of contact-handled and remote-handled transuranic waste.

3,278

OH-WV-0040 / Nuclear Facility D&D-West Valley

- Decrease in funding reflects the effect of the site's shift in focus to concentrate on higher – priority solid waste stabilization work.

-3,278

Total, West Valley Demonstration Project

0

All Other Sites

Funding by Site and Location

(dollars in thousands)

	FY 2009 Current Appropriation	FY 2009 Current Recovery Act Appropriation	FY 2010 Current Appropriation	FY 2011 Request
All Other Sites				
Completed Sites/Program Support	1,100	0	1,200	0
Brookhaven National Laboratory	8,433	42,355	15,000	13,861
California Site Support	187	0	262	0
Argonne National Laboratory	19,479	98,500	10,000	0
Energy Technology Engineering Center	15,000	54,175	10,500	10,679
Inhalation Toxicology Laboratory	272	0	0	0
Moab	40,699	108,350	39,000	31,000
Tuba City	5,000	0	0	0
SLAC National Accelerator Laboratory	4,883	7,925	7,100	3,526
Total, All Other Sites	95,053	311,305	83,062	59,066

The Environmental Management program scope includes cleanup, closure, and post-closure environmental activities at a number of geographic sites across the nation. Most of the sites described in this section of the budget are aligned organizationally with other Department of Energy programs, particularly the Office of Science, and may have continuing missions after EM completes cleanup. Some sites, however, belong to EM and are in the final stages of cleanup and closure or have actually transitioned to post-closure. The sites included in this section are Argonne National Laboratory, Brookhaven National Laboratory, Energy Technology Engineering Center, Inhalation Toxicology Laboratory, Lawrence Berkeley National Laboratory, Moab, and the Stanford Linear Accelerator Center. Below is an overview of the geographic sites that are included in this section of the budget. Sites included in the Non-Defense Post Closure Administration and Program Support are: Energy Technology and Engineering Center, General Electric – Vallecitos, Inhalation Toxicology Laboratory in New Mexico, EM work at Stanford Linear Accelerator Center in California, Argonne National Laboratory in Illinois, Brookhaven National Laboratory in New York, and former Uranium Mill Tailings Remediation Act contractors.

Argonne National Laboratory

Site Overview

Argonne National Laboratory is a DOE Office of Science research and development laboratory with a broad program of research in basic energy and related sciences (such as physical, chemical, material, computer, biomedical and environmental) including operation of several large scientific user facilities. The Laboratory is located about 27 miles southwest of downtown Chicago.

American Recovery and Reinvestment Act Activities

The Argonne National Laboratory American Recovery and Reinvestment Act activities are funded at \$98,500,000. Specifically, this funding will be used to accelerate demolition of excess contaminated facilities and waste cleanout activities. This work includes demolition of Building 330 and the characterization, decontamination and demolition of Building 310, including the below-ground structures, and off-site disposal of the resulting wastes and debris.

In addition, American Recovery and Reinvestment Act funding will provide for the removal of remote-handled transuranic waste from a number of buildings on-site for direct disposal to the Waste Isolation Pilot Plant; and for the removal of additional contact-handled transuranic waste for consolidation at another DOE site. ARRA funding will also be used for the removal of excess materials from the Alpha Gamma Hot Cell, including packaging and disposition of the cell waste and removal of excess nuclear materials from this facility which is a Category 2 (medium level) nuclear facility resulting in a significant achievement for the cleanup of the Argonne National Laboratory.

Site Description

The Argonne National Laboratory cleanup involves two key projects: (1) Long Term Stewardship for Soil and Water Remediation (PBS CH-ANLE-0030); and (2) Nuclear Facility decontamination and decommissioning (PBS CH-ANLE-0040). Post-cleanup residual contamination still remains in several areas of the Argonne National Laboratory site, which require continued monitoring and/or remediation system operation.

The Illinois Environmental Protection Agency has formally issued all “No Further Actions” as appropriate and has signed the Land Use Control Memorandum of Agreement requiring Argonne to maintain the remedial actions and groundwater monitoring. Transfer of groundwater monitoring and surveillance responsibilities to the Office of Science will occur in FY 2010.

Site Cleanup Strategy/Scope of Cleanup

Corrective actions to address contaminated soils and groundwater were conducted under the site Resource Conservation and Recovery Act permit. All corrective actions were completed at the end of FY 2003, with the exception of ongoing activities such as operation and maintenance of remedial actions and groundwater extraction systems, routine groundwater monitoring, and periodic inspection of engineered barriers. Site cleanup focus became completion of the remaining decontamination and decommissioning project. At the end of FY 2008, twelve nuclear facilities were decontaminated and decommissioned, and the final facility (Building 301) was completed in October 2009.

Site Completion (End State)

Current EM site cleanup work was completed in October 2009, along with required regulatory actions.

Site completion for the current EM scope does not include the additional excess facilities and materials that will transfer from the Office of Science to EM in the future. The additional excess remote and

contact handled transuranic wastes transferring to EM will require treatment and eventual disposal at the Waste Isolation Pilot Plant.

Regulatory Framework

Corrective actions to address contaminated soils and groundwater were conducted under the Argonne site Resource Conservation and Recovery Act permit with the Illinois Environmental Protection Agency.

Critical Site Uncertainties and Assumptions

Site completion occurred in October 2009 involving the shipment for disposal of remote-handled transuranic waste. There were no critical site uncertainties associated with the Building 301 project.

Interdependencies

The Argonne Site Office and Argonne National Laboratory work with various State of Illinois agencies such as Illinois Environmental Protection Agency, Illinois Emergency Management Agency, and the State Historic Preservation Agency to execute remaining EM scope. Wastes are typically disposed to local landfills as solid sanitary wastes or to off-site commercial low-level waste disposal sites or the Nevada Test Site for radioactive wastes. Final disposal of the remote-handled transuranic waste required that the Waste Isolation Pilot Plant facility continue to accept remote-handled transuranic waste, and that the shipping corridor remain available from Argonne National Laboratory to the Waste Isolation Pilot Plant.

Contract Synopsis

The current major contract in place for Argonne National Laboratory is a Management and Operating contract. A performance-based management contract was awarded on July 31, 2006, to a new entity, UChicago Argonne LLC, and transition was completed by October 1, 2006.

Cleanup Benefits

Cleanup of additional proposed excess contaminated facilities, and disposal of the additional remote and contact-handled transuranic waste, will reduce the nuclear footprint at Argonne National Laboratory, decrease potential future risk, and demolish aging contaminated buildings that have no foreseeable future use.

Brookhaven National Laboratory

Site Overview

The Brookhaven National Laboratory is a U.S. Department of Energy (DOE) owned multi-disciplinary scientific research center located in the center of Suffolk County on Long Island, about 60 miles east of New York City. The Brookhaven Environmental Management Completion Project addresses the cleanup of the Brookhaven National Laboratory Superfund site as well as the decontamination and decommissioning of two former research reactors: the High Flux Beam Reactor and Brookhaven Graphite Research Reactor. Cleanup criteria are established under a 1992 Interagency Agreement among DOE, the U.S. Environmental Protection Agency, and the New York State Department of Environmental Conservation. The Brookhaven Environmental Management Completion Project is to be considered complete when all required groundwater treatment plants are built and operating, cleanup of soils and the Peconic River are complete, decontamination and decommissioning of the Brookhaven Graphite Research Reactor and the High Flux Beam Reactor are complete, all cleanup, decontamination and decommissioning and legacy wastes are disposed of off-site, and an effective Long-Term Environmental Operations, Safety and Security program was underway.

American Recovery and Reinvestment Act Activities

The Brookhaven National Laboratory American Recovery and Reinvestment Act activities are funded at \$42,355,000. Specifically, this funding will accelerate the removal of the graphite pile from the Brookhaven Graphite Research Reactor, resulting in approximately 60,000 blocks, which will be packaged and prepared for shipping and disposed of off-site, and demolish surplus ancillary structures. American Recovery and Reinvestment Act funding will also be used to accelerate the removal of the A/B waste lines, and contaminated soils at the Former Hazardous Waste Management Facility perimeter area, and the decommissioning and decontamination of two Fan Houses, and isolation of Building 750.

Site Description

Groundwater cleanup is Brookhaven National Laboratory's highest priority because Long Island's sole source aquifer provides the only source of drinking water for local residents. Off-site groundwater is contaminated with volatile organic compounds above State standards and onsite groundwater is contaminated above the drinking water standard with volatile organic compounds and radionuclides tritium and strontium-90. Some soils at Brookhaven National Laboratory are contaminated with radionuclides (primarily cesium-137 and strontium-90) and chemicals (primarily mercury) due to historical practices and spills.

Brookhaven Graphite Research Reactor: The Brookhaven Graphite Research Reactor was the first reactor built solely to provide neutrons for research and was operated from August 1950 to June 1968. This reactor is of concern because releases to the environment have occurred and have caused soil and groundwater contamination with cesium-137 and strontium-90. It is listed as an Area of Concern in the Interagency Agreement. Numerous interim actions have been performed to address high priority

environmental releases. A Record of Decision was signed by the United States Environmental Protection Agency in March 2005 that adopts the interim actions as final and requires removal and off-site disposal of the graphite moderator (pile) and radiation biological shield (bioshield).

High Flux Beam Reactor: The High Flux Beam Reactor, constructed for basic research experiments in physics, chemistry and biology, was permanently shut down in 1999. Decision-making with the regulatory agencies and the community is completed, and culminated with a signed Record of Decision during the summer of 2009 along with the removal and disposal of Control Rod Blades and Beam Plugs in addition to the soil remediation of the Waste Loading Area.

Site Cleanup Strategy/Scope of Cleanup

Brookhaven National Laboratory's highest cleanup priorities involved the cleanup of environmental releases to groundwater, soils, and the Peconic River. These activities make up the CH-BRNL-0030/ Soil and Water Remediation project. High priority activities at the Brookhaven Graphite Research Reactor related to addressing environmental releases were completed in FY 2005. Removal of the reactor internals, graphite moderator (pile), and radiation biological shield (bioshield) are planned for completion in FY 2010. After the removal and off-site disposal of the reactor internals, graphite pile and reactor bioshield an engineered cap around the building and groundwater monitoring wells will be installed. Decontamination and decommissioning of the High Flux Beam Reactor is considered to be the lowest risk and is scheduled to be completed last.

Site Completion (End State)

Completion of the Brookhaven National Laboratory Soil and Water activities in FY 2005 was followed by continuing Long-Term Environmental Operations, Safety, and Security. These activities will continue while the Brookhaven Graphite Research Reactor and High Flux Beam Reactor decontamination and decommissioning is completed. The lifecycle planning estimate for end date for legacy cleanup is 2011. Upon completion of the above currently identified scope within each of the project's Record of Decisions, the Long-Term Environmental Operations, and Safety and Security program will be transferred to the DOE Office of Science, the Brookhaven National Laboratory site landlord.

Regulatory Framework

Brookhaven National Laboratory was added to New York State's list of Inactive Hazardous Waste sites in 1980 and to the federal National Priorities List in 1989. A tri-party Federal Facilities Compliance Agreement, also known as the Interagency Agreement, was subsequently negotiated among the DOE, the U. S. Environmental Protection Agency - Region II, and the New York State Department of Environmental Conservation. The Interagency Agreement integrates the requirements of Comprehensive Environmental Response, Compensation, and Liability Act, the corrective action requirements of the Resource Conservation and Recovery Act, DOE cleanup authorities under the Atomic Energy Act, and any corresponding New York State regulations.

Critical Site Uncertainties and Assumptions

Up through calendar year 2008 the most significant project uncertainty for the High Flux Beam Reactor involved the resolution of the end state with the regulatory agencies and the public. The current assumption involves removing accessible source terms and shrinking the footprint of the facility to reduce long-term surveillance, maintenance and security requirements, and to defer removal of the reactor vessel for 40 to 75 years. This will allow the high source terms to radiologically decay, reducing the risk of radiation exposures to workers during removal and packaging. Deferral of the vessel removal will also greatly simplify the dismantlement, segmentation and packaging of the vessel and will reduce the need for specialized shipping casks and containers to transport the highly radioactive components, reducing the generation of secondary waste streams. DOE continues using the Core Team process with the regulatory agencies and facilitated this decision, and a Record of Decision addressing the end state of the High Flux Beam Reactor was signed in the summer of 2009.

Interdependencies

Waste transportation and disposal constitute the most significant inter-site dependencies. Radioactive waste from decontamination and decommissioning will be disposed of at Nevada Test Site and Energy Solutions in Clive, Utah, (formerly Envirocare of Utah).

Contract Synopsis

DOE's cost-plus-performance-fee contract with Brookhaven Science Associates, as the managing and operating contractor, to perform the DOE science mission at Brookhaven National Laboratory ended on January 4, 2008, but was extended through January 2016. EM-funded cleanup activities involving the completion of the Brookhaven National Laboratory Soil and Water activities, high-priority removals at the Brookhaven Graphite Research Reactor and the High Flux Beam Reactor, and surveillance and maintenance activities at both Reactors are included in this contract.

Cleanup Benefits

Environmental restoration and nuclear facility decommissioning at Brookhaven National Laboratory addresses historical releases by mitigating risks to human health and the environment. Radiological and chemical contamination has been removed, reduced or placed under an active remediation system designed to isolate, and remediate the contamination. The overall benefit is a workplace and environment where immediate threats of exposure to contamination have been mitigated.

Overall, cleanup at Brookhaven National Laboratory, as executed under the Comprehensive Environmental Response, Compensation, and Liability Act and the Brookhaven interagency agreement, designed to take near-term action to reduce the immediate threats to human health and the environment from historical releases of contamination. Long-term actions are a key part of the cleanup strategy with the overall goal of delisting from the National Priorities List.

Soil contamination has been either removed or placed in a safe and stable condition. Groundwater contamination is being addressed by a suite of remediation technologies designed to isolate and remediate the contamination and reduce overall risks. All soil, groundwater and Peconic River response actions are constructed and in various phases of operation and monitoring. Sources of releases have been removed and contamination from inactive nuclear facilities has been addressed in a variety of

facility stabilization, decontamination and decommissioning activities. Final decommissioning is underway.

At the Brookhaven Graphite Research Reactor, removal of the reactor, which includes the reactor internals, the graphite moderator (pile), and the radiation biological shield (bioshield), is the high priority activity that will ultimately remove over 99 percent of the total radiological inventory. The High Flux Beam Reactor is in a safe and stable condition. Environmental releases have been addressed and the facility has undergone extensive stabilization and decontamination. The remaining work is designed to further reduce its radiological inventory at the site. However, because of the high radiation levels associated with final decommissioning, consideration of radioactive decay to safer levels has been evaluated as part of the Comprehensive Environmental Response, Compensation, and Liability Act response action selection process; such the remaining radiological inventory will be addressed.

Energy Technology Engineering Center

Site Overview

The Santa Susana Field Laboratory, owned by the Boeing Company and NASA, is located atop a range of hills between the populous Simi and San Fernando Valleys, north of Los Angeles. The 90-acre Energy Technology Engineering Center, which was DOE's laboratory for nuclear research (non-defense) at the Santa Susana Field Laboratory (2,850 acres), is a collection of facilities within Area IV.

American Recovery and Reinvestment Act Activities

The Energy Technology and Engineering Center American Reinvestment and Recovery Act activities are funded at \$54,175,000. Specifically, this funding will provide the U.S. Environmental Protection Agency to conduct radiological characterization survey assessment, as required of DOE by a congressional mandate, necessary to complete an environmental impact statement and enable completion of site cleanup. American Recovery and Reinvestment Act funding will also supplement on-going Resource Conservation and Recovery Act Facility Investigations and Resource Conservation and Recovery Act Corrective Action for soil and groundwater Solid Waste Management Units and Operable Units.

Site Description

The Energy Technology Engineering Center is surplus to DOE's current mission and is operated by EM solely to complete site cleanup and closure. As such, the current use of the site involves diminishing use of facilities through deactivation, decommissioning, and dismantlement. As a result of past operations, radioactive and chemical contamination exists in several structures (including the Radioactive Materials Handling Facility) and soil, surface, and groundwater.

Site Cleanup Strategy/Scope of Cleanup

Two radiological facilities (comprising 11 buildings) and two sodium facilities (comprising four buildings) remain. The two radiological facilities remaining at Energy Technology Engineering Center are the Radioactive Materials Handling Facility complex (which has a Resource Conservation and Recovery Act permit) and Building 4024 (part of the space nuclear program). There are two sodium facilities: 1) Sodium Pump Test Facility; and 2) the Hazardous Waste Management Facility. In addition, there is an ongoing Resource Conservation and Recovery Act Corrective Action for chemical contamination investigation in soil and groundwater.

DOE is responsible for ten areas of soil contamination that require investigation and potential remediation at Energy Technology Engineering Center. Corrective actions are currently based on a residential land-use assumption. It is anticipated that three to six of the ten units will be excavated to meet projected media cleanup standards.

Three small plumes are contaminated primarily with low levels of trichloroethylene and are included in the site wide Resource Conservation and Recovery Act Corrective Action Program. The Corrective Action program for DOE activities is a small part of the activity for the entire Santa Susana Field Laboratory. The state, which is the regulatory authority, will not allow DOE to proceed independently from the rest of the site. The long-term response actions for the DOE groundwater contamination were transferred to Boeing as part of the 1998 Closure Contract.

Site Completion (End State)

Due to an existing Consent Order and a recent court order to complete an Environmental Impact Statement, the lifecycle planning estimate range is 2018 to 2025. A new acquisition strategy is being developed, as is a strategy for completion of the project scope. Following is a list of remaining activities that are currently projected to achieve EM completion:

- Preparation of the Environmental Impact Statement and Record of Decision.
- Decontamination and demolition of two remaining radiologically contaminated facilities.
- Contaminated Soil and Groundwater Investigation and Cleanup in accordance with the Resource and Recovery Act.
- Demolition of two sodium facilities (not radiologically contaminated). One of the facilities also requires closure pursuant a Resource Conservation and Recovery Act Closure Plan.
- Offsite disposal of all radioactive waste and decommissioned waste.

Regulatory Framework

Regulation of the Energy Technology Engineering Center Closure project is segmented by different regulatory authorities. Prior decontamination and demolition activities of the radiologically contaminated facilities at the Energy Technology Engineering Center site were conducted under Atomic Energy Act authority. The U.S. District Court for the Northern District of California directed the DOE to complete an Environmental Impact Statement and Record of Decision for Area IV of the Santa Susana Field Laboratory in accordance with the National Environmental Policy Act.

The Resource Conservation and Recovery Act chemical cleanup is regulated by the California Department of Toxics Substance Control and is being performed consistent with a signed Consent Order issued by the California Department of Toxic Substances Control in August 2007. DOE is presently renegotiating a revised Resource Conservation and Recovery Act Consent Order and associated schedule for the decontamination and decommissioning work which has been deferred at the Radioactive Material Handling Facility.

State law enacted in January 2008 requires cleanup actions consistent with an agricultural scenario. The agricultural scenario is more restrictive than previously performed cleanup actions at the Energy Technology Engineering Center.

Critical Site Uncertainties and Assumptions

DOE has been ordered to prepare an Environmental Impact Statement and issue a Record of Decision regarding cleanup at Energy Technology Engineering Center. Until the Record of Decision is issued, the full work scope for remediation this site remains uncertain. Further, risks to EM completion at Energy Technology Engineering Center include potential delays in State environmental reviews and final acceptance by the regulators of DOE's approach to soil and groundwater characterization and containment.

The FY 2008 DOE Appropriation language required DOE and the Environmental Protection Agency to enter into an Interagency Agreement for the joint implementation of a radiological characterization survey of the Santa Susana Field Laboratory Area IV. Following additional Congressional input, DOE provided funds to the Environmental Protection Agency to perform an offsite radiological background study via an Interagency Agreement in July 2008. The Environmental Protection Agency survey is a direct input to the Environmental Impact Statement. This survey will be funded by the 2009 American Reinvestment and Recovery Act appropriation.

Contract Synopsis

The current cleanup contract (through September 30, 2011) is held by Boeing. It is a cost-plus-fixed fee/incentive fee contract. The scope is comprehensive in that it includes all of the radioactive contamination (remediated under DOE's Atomic Energy Act authority) and chemical contamination, conducted under the state of California's Resource Conservation and Recovery Act authority.

Cleanup Benefits

The cleanup is protective of human health and the environment using a residential land use scenario. Activities in FY 2009 and FY 2010 will fulfill the congressionally mandated radiological characterization survey and provide assurance that all aspects of radiological contamination on the site have been identified and will be addressed. It also will help ensure all other hazardous soil and groundwater contamination has been identified and allow the DOE to proceed with environmental clean-up and closure.

Moab

Site Overview

The project mission is to remediate uranium mill tailings from the former Atlas Minerals Corporation (Atlas) uranium-ore processing and mill site, contaminated vicinity properties, and contaminated groundwater. DOE became responsible for this mission upon the enactment of the Floyd D. Spence National Defense Authorization Act of 2001. The scope of the Moab UMTRA Project is to excavate approximately 16 million tons of uranium mill tailings and other contaminated material from the former Atlas uranium mill site near Moab, Utah; transport them approximately 30 miles primarily via rail to a disposal cell to be constructed near Crescent Junction, Utah; remediate vicinity properties; and implement active ground water remediation at the Moab site

American Recovery and Reinvestment Act Activities

The Moab American Reinvestment and Recovery Act activities are funded at \$108,350,000. Specifically, this funding will be used to accelerate the removal of 2 million tons of tailings and accelerate completion of the site cleanup by three years, from 2028 to 2025.

Site Description

The DOE Moab project site is approximately 3 miles northwest of the city of Moab, Utah on the west bank of the Colorado River. The site encompasses approximately 435 acres, 130 acres of which is covered by a 12 million cubic yard uranium mill tailings pile..

Site Cleanup Strategy/Scope of Cleanup

DOE's Record of Decision (issued on September 14, 2005) made the decision to relocate the mill tailings pile away from the Colorado River to a DOE-constructed disposal facility near Crescent Junction, Utah via rail transportation. DOE will assess the extent of radiological contamination at the mill site and vicinity properties, characterize the proposed disposal site and construct a disposal cell, excavate and remove the tailings pile to the disposal cell, and remediate local ground water. The remainder of the mill site will be verified to meet radiological standards and then restored to an acceptable condition. Demobilization from the site will complete the on-site activities, except in the case of active ground water restoration. DOE also will investigate unidentified vicinity properties to assess the presence of contamination levels.

Site Completion (End State)

The end state for the Moab Site Project will be achieved after contaminated soil, tailings, vicinity properties, and surface and groundwater are remediated. DOE may place some restrictions on reutilization of the site, depending on how proposed land uses could impact the selected groundwater remedy. The site will then be transferred to the Office of Legacy Management for monitoring and required stewardship. The end state is projected to be 2025.

Regulatory Framework

In October 2000, the Floyd D. Spence National Defense Authorization Act of FY 2001 assigned DOE responsibility to establish a remedial action program and stabilize, dispose of, and control uranium mill tailings and other contaminated material at the Moab uranium-ore processing site and associated vicinity properties. Remediation must be performed in accordance with Title I of the Uranium Mill Tailings Radiation Control Act and the cleanup standards established under 40 CFR 192. The Nuclear Regulatory Commission must concur on the remediation plan.

Critical Site Uncertainties and Assumptions

- Potential rail upgrades and rail transport will be accomplished within expected project cost and schedule.
- Vicinity property characterization will minimize the number of sites requiring remediation.

Interdependencies

Past surveys by the Environmental Protection Agency indicate contaminated vicinity properties may exist and consequently will have to be remediated to Environmental Protection Agency standards. Contaminated materials will be excavated and transported to the disposal cell location.

Contract Synopsis

A remedial action contract and a new technical assistance contract were awarded on June 20, 2007.

Cleanup Benefits

Continued maintenance and surveillance of the groundwater and mill tailings pile area will ensure no further contamination of surrounding areas. Initiating the removal of the approximately 12 million cubic yards of uranium tailings away from the Colorado River will begin to significantly reduce danger to human health and the environment.

SLAC National Accelerator Laboratory

Site Overview

The objectives of EM's remediation project at the SLAC National Accelerator Laboratory are to conduct necessary response actions to a California Regional Water Quality Control Board (Water Board) Order No. R2-2005-0022, issued May 2005. The Order requires necessary long-term groundwater remedies, excavation and disposal of contaminated soils, and transfer of responsibility for long-term operation and maintenance of groundwater treatment systems to the Office of Science at the end of FY 2012 upon project completion. The Oakland Projects Office will oversee the work scope between the Management and Operations contractor and an Indefinite Delivery/Indefinite Quantity contractor. Identified sites will be characterized in order to guide removal actions. The groundwater release sites will be studied and necessary monitoring wells and groundwater treatment systems will be installed.

American Recovery and Reinvestment Act Activities

The SLAC National Accelerator Laboratory American Recovery and Reinvestment Act activities are funded at \$7,925,000. Specifically, this funding will help the project to achieve its 2011 completion goal which is one year earlier than planned. The American Recovery and Reinvestment Act work consists of soil excavation, transportation, disposal, sampling and restoration at ten waste sites and remedial investigations to be conducted at four sites. Approximately 20,000 cubic yards of contaminated soil will be disposed, reducing the EM project footprint by 10 acres. Meeting these objectives will allow DOE-EM to: fulfill ongoing obligations as defined in the DOE lease with Stanford University (April 26, 1962); perform EM's mission of legacy contamination cleanup; comply with the Water Board Order and achieve EM completion of the SLAC National Accelerator Laboratory remediation project. It is expected that EM completion will achieve protection of groundwater and residential land use standards for accessible areas.

Site Description

The SLAC National Accelerator Laboratory is a Federally funded national research laboratory constructed in 1963 and continuously managed and operated by Stanford University under a contract with the United States Department of Energy (DOE). It is located on land owned by Stanford University and leased to DOE. The original lease agreement was signed in 1962 between the Atomic Energy Commission (DOE's predecessor) and Stanford University for a period of 50 years, expiring in 2012. The land containing facilities is part of the original land grant that established Stanford University; the land cannot be sold and must be held in perpetuity by Stanford's trustees to support its educational mission. Land use at the facility is a combination of industrial, educational, and short-term residential. DOE's lease with Stanford University requires "leaving the premises in a safe, clean, and neat condition."

The SLAC National Accelerator Laboratory research program centers on experimental and theoretical research in elementary particle physics using electron beams and a broad program of research in atomic and solid-state physics, chemistry, biology, and medicine using synchrotron radiation. The main accelerator is two miles long – the longest linear accelerator in the world. It is located approximately

two miles west of the main Stanford University campus adjacent to Menlo Park in an unincorporated portion of San Mateo County that is residentially zoned.

Site Cleanup Strategy/Scope of Cleanup

Soil and Groundwater Pollution

The SLAC National Accelerator Laboratory has conducted numerous site investigations as part of its overall Environmental Restoration Program that include extensive soil and groundwater sampling, and the installation of over 100 groundwater monitoring wells. Results of these investigations indicate that soil and groundwater pollution exists at various locations within the SLAC National Accelerator Laboratory site. Constituents of concern for soil are: volatile organic compounds, semi-volatile organic compounds, total petroleum hydrocarbons, polychlorinated biphenyls, lead and tritium. Constituents of concern for groundwater are volatile organic compounds, semi-volatile organic compounds, total petroleum hydrocarbons and tritium. Source areas that contribute to pollutant releases include storage areas and areas where hazardous materials, including volatile organic compounds, semi-volatile organic compounds, polychlorinated biphenyls, total petroleum hydrocarbons, and radionuclides were used or generated. The volatile organic compounds were used as cleaning agents and the polychlorinated biphenyls were used in electrical transformers. Polychlorinated biphenyls are no longer used at the SLAC National Accelerator Laboratory in transformers at concentrations above 500 parts per million. All transformers with polychlorinated biphenyls concentrations above 500 parts per million have been drained, flushed and refilled with non-polychlorinated biphenyls containing oil; however, some residual polychlorinated biphenyls remain in transformers. Generation of radionuclides is the result of facility operations for high-energy particle physics research. Some of these chemicals have been released to the environment, including site soil, groundwater, sediment, and storm water. Several removal actions have been performed for volatile organic compounds, semi-volatile organic compounds, polychlorinated biphenyls, total petroleum hydrocarbons, and metals in soil and groundwater. Currently, evaluation of remedial alternatives addressing soil and groundwater pollution is ongoing.

EM and the Office of Science SLAC National Accelerator Laboratory partitioned project scope responsibilities based on whether the contamination (or suspected contamination) was “legacy waste,” and thus was EM’s responsibility, or operational/storm water management-type contamination, and thus was Office of Science SLAC National Accelerator Laboratory responsibility. It was agreed that in instances where release sites are inaccessible, or could not be currently assessed without interfering with the facility research operations (e.g., under buildings or located in active portions of the facility), the Office of Science SLAC National Accelerator Laboratory has accepted responsibility for them as deferred actions. EM’s strategy is to perform the removal actions in parallel with preparing the Remedial Investigation Report and associated Risk Assessment, the presumption being that once the Remedial Investigation was completed, no, or very limited, additional response measures would be warranted such that any subsequent documentation could be streamlined or combined to meet the EM completion target date of September 30, 2011.

Site Completion (End State)

Based on existing project scope, EM completion is expected to achieve protection of groundwater and residential land use standards for accessible areas. Completion of removal actions and construction of

remedial measures by the end of FY 2012, if based on original project scope, would demonstrate the following:

- contaminated soils excavated;
- contaminated sites evaluated and characterized;
- technical issues and concerns associated with new Board Order resolved by Core Team members prior to causing delays;
- Comprehensive Environmental Response, Compensation, and Liability Act public reviews and deliverables are completed: Remedial Investigation Report, Risk Assessment, Feasibility Study, Remedial Action Plan, Remedial Design Report, Remedial Action Plan Implementation Final Report and Operations and Maintenance Plan for the West SLAC National Accelerator Laboratory and Groundwater Operable Units and a Remedial Investigation and Risk Assessment for the Research Yard Operable Units;
- Enforceable regulatory milestones were achieved;
- Regulatory site closure was obtained
 - o Office of Science accepted responsibility for all sites that were inaccessible due to research operations and all contamination after EM completes existing scope; and
 - o Office of Science agreed to assume responsibility for completing the Comprehensive Environmental Response, Compensation, and Liability Act process for the remainder of the Research Yard and the Tritium Operable Units and new scope and reports required for new Board Order.

Regulatory Framework

The California Regional Water Quality Control Board, San Francisco Bay Region is the lead regulatory agency at the SLAC National Accelerator Laboratory Environmental Restoration Program for all media including soil, groundwater, sediment, and storm water. While the U.S. Environmental Protection Agency has regulatory authority regarding soil remedial actions involving polychlorinated biphenyls, it seeks no involvement as long as the Toxic Substances Control Act unrestricted use standards are applied. DOE is executing its Comprehensive Environmental Response, Compensation and Liability Act authority (Executive Order 12580) to conduct removal actions. The SLAC National Accelerator Laboratory work scope was stipulated under the California Regional Water Quality Control Board (Water Board) Order No. R2-2005-0022, issued May 2005. This Order required the investigation and remediation of impacted soil and groundwater resulting from the historical spills and leaks that have occurred during operations. Per the Order, a Remedial Investigation/Feasibility Study Work Plan was prepared and approved to facilitate preliminary agreements on whether cleanup actions are necessary for many of the sites. The release sites at issue are grouped into four operable units: Groundwater Volatile Organic Compound Operable Unit; Tritium Operable Unit; Research Yard-SSRL/IR-6 Drainage Channel Operable Unit; and, the West SLAC National Accelerator Laboratory/Campus Area / IR-8 Drainage Channel Operable Unit. A new Board Order was stipulated on October 14, 2009, resulting in a new unilateral modification to the Order (R2-2009-0072. This Board Order is discussed below in the section, "Critical Site Uncertainties and Assumptions."

Critical Site Uncertainties and Assumptions

Groundwater will be considered not drinkable (i.e., industrial or irrigation only). A 2001 evaluation documented that natural groundwater at the SLAC National Accelerator Laboratory does not quality as

potable drinking water due to naturally poor quality and low well yields. The SLAC National Accelerator Laboratory in conjunction with the landowner, Stanford University, has proposed that the California Regional Water Quality Control Board exempt groundwater from all potential uses except freshwater replenishment, agricultural supply, irrigation supply and industrial process supply.

A new Board Order has expanded scope of an existing project threatening completion by 2011. On October 14, 2009, a new unilateral modification was made to the Order (R2-2009-0072) changing the definition of the "West SLAC Operable Unit" to encompass the entire SLAC National Accelerator Laboratory not otherwise covered by the other three operable units (approximately 400 acres of the site). Previously, the West SLAC National Accelerator Laboratory operable unit was considered only to include the identified release sites/problem areas encompassing a total of approximately 25-30 acres. As a result of this new Board Order, it is unclear whether new scope has been identified. EM may consider new scope as any reporting requirements that exceed what was previously defined as the EM Remedial Investigation report and Comprehensive Environmental Response, Compensation, and Liability Act documentation for the legacy waste sites. New scope for example could also include documentation of deferred/operational sites and their associated drainages and or evaluation of all existing data to determine if there may be other potential or suspect sites. The remaining uncertainties associated with the Remedial Investigation data and subsequent documentation (e.g., decision documents, risk management plans) will likely prevent attainment of the current project completion date. DOE and Stanford University have until April 10, 2010, to provide the Regulator with a new schedule for completing any additional work resulting from this broader definition. Resolution of issues will necessitate discussion and agreement between EM and the Office of Science SLAC National Accelerator Laboratory.

Interdependencies

DOE's lease with Stanford University requires "leaving the premises in a safe, clean and neat condition. When protection of groundwater and residential land use standards for accessible areas is achieved and upon project completion, EM will transition to the Office of Science all responsibility for environmental management of the SLAC National Accelerator Laboratory. EM may seek cooperation from the Office of Science to assume responsibility for any new project scope associated with the new Board Order. New scope might include additional or expanded reports required to satisfy the new Board Order. The Research Yard and Tritium Operable Units are the responsibility of Science to complete and, additionally, are not impacted by the revision in our order.

Contract Synopsis

The SLAC National Accelerator Laboratory is operated by Stanford University under contract with DOE. The term of Stanford University's lease with DOE will extend to 2012. The Management and Operating contract is being extended (negotiations are in progress) beyond its basic September 30, 2009, expiration. An Environmental Restoration Indefinite Delivery/Indefinite Quantity contractor was hired at the end of FY 2007 to perform most of the Environmental Cleanup activities.

Cleanup Benefits

Mitigating the existing environmental legacy risks at the SLAC National Accelerator Laboratory is paramount in maintaining Stanford University's positive visibility on the densely populated San Francisco Peninsula, where residential property values are among the highest nation-wide.

Tuba City

Tuba City, Arizona, is a Uranium Mill Tailing Removal Action site originally completed in 1990. The FY 2009 Omnibus Appropriation Act provided \$5,000,000 for the purposes of carrying out remedial actions under the Uranium Mill Tailings Radiation Control Act of 1978 at real property in the vicinity of and immediately adjacent to the north-northwest section of the Tuba City processing site and on the north side of Highway 160. The proposed project included limited further radiological characterization of the site, development of a remedial action plan (likely to include excavation of contaminated soil and debris and transport to an approved disposal facility), site remediation and restoration, independent verification of cleanup, and closeout documentation.

Consolidated Business Center

The Consolidated Business Center assumed responsibility for administrative activities at EM non-defense sites in 2006, including contract closeout, litigation and litigation support. The EM non-defense facility closure project offices are not staffed to manage these activities, which are generally intermittent in nature and can be more consistently and effectively managed from a central location. The Consolidated Business Center is currently supporting active non-defense litigation at one former Uranium Mill Tailing Remediation Act site, as well as, supporting the determination and extent of Department cleanup responsibility at the former General Electric Vallecitos site, and beginning in FY 2009, site post-completion support at the Inhalation Toxicology Laboratory in New Mexico.

Funding Schedule by Activity

	(dollars in thousands)		
	FY 2009	FY 2010	FY 2011
Non-Defense Environmental Cleanup			
Small Sites			
CBC-ND-0100 / CBC - Non-Defense Post Closure Administration and Program Support	1,100	1,200	0
BRNL-0100 / Brookhaven Community and Regulatory Support	0	179	300
BRNL-0030 / Soil and Water Remediation-Brookhaven National Laboratory	4,300	9,444	6,700
BRNL-0040 / Nuclear Facility D&D-Brookhaven Graphite Research Reactor	2,162	5,119	150
BRNL-0041 / Nuclear Facility D&D-High Flux Beam Reactor	1,971	258	6,711
CBC-CA-0100-N / Oakland Community and Regulatory Support (Non-Defense)	115	262	0
CBC-CA-0013B-N / Solid Waste Stabilization and Disposition-California Sites-2012 (Non-Defense)	72	0	0
CH-ANLE-0030 / Soil and Water Remediation-Argonne	500	0	0

	(dollars in thousands)		
	FY 2009	FY 2010	FY 2011
National Laboratory-East CH-ANLE-0040 / Nuclear Facility D&D-Argonne			
National Laboratory-East CBC-EETEC-0040 / Nuclear Facility D&D-Energy Technology Engineering Center	18,979	10,000	0
CBC-ITL-0030 / Soil and Water Remediation-Inhalation Toxicology Laboratory	15,000	10,500	10,679
CBC-MOAB-0031 / Soil and Water Remediation-Moab	272	0	0
CBC-TUBA-0031 / Soil and Water Remediation-Tuba City	40,699	39,000	31,000
CBC-SLAC-0030 / Soil and Water Remediation-Stanford Linear Accelerator Center	5,000	0	0
Subtotal, Small Sites	4,883	7,100	3,526
Total, Non-Defense Environmental Cleanup	95,053	83,062	59,066
Total, All Other Sites	95,053	83,062	59,066

Performance Measure Summary

	Complete through FY 2009	Complete through FY 2010	Complete through FY 2011	Life-Cycle	FY 2011 % Complete
All Other Sites					
Geographic Sites Eliminated (number of sites)	43	44	45	49	91.8%
Industrial Facility Completions (Number of Facilities)	25	25	25	27	92.6%
Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	4,883	4,883	4,883	4,908	99.5%
Nuclear Facility Completions (Number of Facilities)	0	1	1	1	100.0%
Radioactive Facility Completions (Number of Facilities)	92	93	93	97	95.9%
Remediation Complete (Number of Release Sites)	782	797	816	826	98.8%
Spent Nuclear Fuel packaged for final disposition (Metric Tons of Heavy Metal)	1	1	1	1	100.0%
Transuranic Waste shipped for disposal (Cubic meters) - CH	0	0	0	30	0%
Transuranic Waste shipped for disposal (Cubic meters) - RH	0	0	0	22	0%

Detailed Justification

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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**CH-ANLE-0030 / Soil and Water Remediation-
Argonne National Laboratory-East**

500 0 0

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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This PBS can be found within the Non-Defense Environmental Cleanup appropriation.

This PBS involves investigation and remedial activities to reduce risk to human health and the environment at the release sites and thus comply with corrective action requirements of the Resource Conservation and Recovery Act Part B permit issued by the Illinois Environmental Protection Agency.

In FY 2011, the following activities are planned:

- No activities planned.

Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
Remediation Complete (Number of Release Sites)	443	443	443	443	100.0%

CH-ANLE-0040 / Nuclear Facility D&D-Argonne National Laboratory-East

18,979 10,000 0

This PBS can be found within the Non-Defense Environmental Cleanup appropriation.

Historic operations at Argonne National Laboratory focused on research reactor construction and operation, including nuclear support facilities such as glove boxes and hot cells. All the reactors are shut down as are most support facilities. Surplus contaminated facilities need to be decontaminated and in one case demolished, to reduce risk and support the overall Argonne National Laboratory mission of continuing science research and development work.

In FY 2011, the following activities are planned:

- No planned activities in FY 2011; the scope of work typically covered in this PBS is being executed with ARRA funding as discussed above in the American Recovery and Reinvestment Act Activities section of the Site Overview.

Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
Transuranic Waste shipped for disposal (Cubic meters) - CH	0	0	0	30	0%
Transuranic Waste shipped for disposal (Cubic meters) - RH	0	0	0	22	0%
Nuclear Facility Completions (Number of Facilities)	0	0	0	0	100.0%
Radioactive Facility Completions (Number of Facilities)	78	78	78	80	98.0%
Key Accomplishments (FY 2009)/Planned Milestones (FY 2010/FY 2011)					
<ul style="list-style-type: none"> All Cells Ready For Demolition (FY 2009) 					

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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**BRNL-0030 / Soil and Water Remediation-
Brookhaven National Laboratory**

4,300 9,444 6,700

This PBS can be found within the Non-Defense Environmental Cleanup appropriation.

This PBS scope includes actions taken on environmental media and some building structures that became contaminated with radioactive and chemical substances at Brookhaven National Laboratory. Cleanup is conducted as a response action in accordance with the Comprehensive Environmental Response, Compensation and Liability Act and under an Interagency Agreement which serves as the Federal Facility Agreement among the DOE, the United States Environmental Protection Agency and New York State. DOE has committed to plan and implement an effective monitoring and treatment system operating program at the Laboratory. The end-state of this PBS is operation of sixteen groundwater treatment systems, completion of all required non-reactor facility decontamination and decommissioning, and soil and Peconic River cleanup (completed by September 30, 2005). Continuing activities such as groundwater monitoring and treatment system operations and maintenance are underway. The end state for this project was successfully achieved. All soil cleanups, tank removals, landfill caps and remediation of the Peconic River have been completed and all related wastes have been disposed of off-site. All sixteen groundwater treatment systems are either currently operating, or have completed their mission and have been shut down and/or decommissioned.

In FY 2011, the following activities are planned:

- Operation, maintenance of groundwater treatment plants located on and off site.
- Monitor existing on site landfills.
- Accumulate data from hundreds of monitoring wells (on and off site), and provide results on all activities to the regulatory and public community.

Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
Radioactive Facility Completions (Number of Facilities)	3	3	3	3	100.0%
Remediation Complete (Number of Release Sites)	75	75	75	75	100.0%
Key Accomplishments (FY 2009)/Planned Milestones (FY 2010/FY 2011)					
<ul style="list-style-type: none"> ▪ Long-term soil and groundwater operations and environmental stewardship completion. (FY 2009/September 2010/September 2011) 					

**BRNL-0040 / Nuclear Facility D&D-Brookhaven
Graphite Research Reactor**

2,162 5,119 150

This PBS can be found within the Non-Defense Environmental Cleanup appropriation.

This PBS scope includes characterization, stabilization, and decontamination and decommissioning of

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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the Brookhaven Graphite Research Reactor at Brookhaven National Laboratory. The decommissioning of Brookhaven Graphite Research Reactor is conducted as a response action under the Comprehensive Environmental Response, Compensation and Liability Act. It is identified as Area of Concern 9 under an Interagency Agreement, which serves as the Federal Facility Agreement among the DOE, the United States Environmental Protection Agency and New York State. A Feasibility Study was prepared to evaluate viable decommissioning alternatives. DOE will maintain the facility in a protected state until the radioactivity naturally decays to low levels. As such, surveillance and maintenance of the remaining structures will be transferred to the Brookhaven National Laboratory landlord (DOE Office of Science) at project completion. Completed decommissioning work includes demolition and disposal of pile fans and sump, above-grade canal house, water treatment houses, instrument house, above-grade ducts, below-grade duct filters/coolers/liners (partial), below-grade piping to/from the canal, below-grade portions of the canal external to building 701, and selected hot pockets of contaminated soil.

Currently, the following actions have also been completed: pile sealed; building 701 isolated from Building 703; and temporary cap put in place until final decommissioning is complete; completed facility characterization, development of Documented Safety Analysis and Technical Safety Requirement documents for a needed upgrade to the facility Authorization Basis documents.

Remaining work includes removal of the graphite pile and bioshield as well as installation of an engineered cap.

In FY 2011, the following activities are planned:

- Install monitoring well and transition to long-term storage.
- Monitoring facilities environment set for long-term storage as well as addressing maintenance activities.
- Complete repairs as result of routine inspections.
- Dispose of waste resulting from maintenance and repairs.

Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
Nuclear Facility Completions (Number of Facilities)	0	1	1	1	100.0%
Radioactive Facility Completions (Number of Facilities)	7	8	8	8	100.0%
Remediation Complete (Number of Release Sites)	1	1	1	1	100.0%
Key Accomplishments (FY 2009)/Planned Milestones (FY 2010/FY 2011)					
<ul style="list-style-type: none"> ▪ Complete DOE ORR (FY 2009) ▪ Continue packaging/shipping/disposal of waste generated by the demolition of the reactor bioshield. (July 2010) 					

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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- Install groundwater monitoring wells. (August 2010)
- Regulatory Approval of Brookhaven Graphite Research Reactor D&D Project Closeout Report (December 2010)
- Complete Brookhaven Graphite Research Reactor Physical Project (December 2010)
- CD-4 Approval (March 2011)
- Complete Brookhaven Graphite Research Reactor Surveillance and Maintenance and all EM efforts transition to Office of Science (September 2011)

BRNL-0041 / Nuclear Facility D&D-High Flux Beam Reactor

1,971 258 6,711

This PBS can be found within the Non-Defense Environmental Cleanup appropriation.

This PBS scope includes characterization, decontamination and decommissioning of the High Flux Beam Reactor at Brookhaven National Laboratory. The scope also includes the remediation of a two-acre plot of contaminated soil alongside a railroad spur. The High Flux Beam Reactor complex has been deactivated and stabilized. Fuel has been removed, equipment used to support research and experimentation has been removed, and the primary system, including the fuel pool, has been drained. Ancillary buildings have been demolished. Excess control rod blades and other legacy waste have been removed and disposed.

In FY 2011, the following activities are planned:

- Monitoring facilities environment set for long term storage as well as addressing maintenance activities.
- Decontamination and decommissioning of the High Flux Beam Reactor ancillary facilities/utilities in preparation of long term storage and working toward the completion of “legacy scope” at the Brookhaven National Laboratory.
- A portion of the scope of work typically covered in this PBS is being executed with ARRA funding as discussed above in the American Recovery and Reinvestment Act Activities section of the Site Overview.

Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
Remediation Complete (Number of Release Sites)	1	1	1	1	100.0%
Key Accomplishments (FY 2009)/Planned Milestones (FY 2010/FY 2011)					
<ul style="list-style-type: none"> ▪ Complete waste loading area remediation (FY 2009) ▪ Regulator Approval of High-Flux Beam Reactor Closeout Report. (March 2010) 					

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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- Complete High-Flux Beam Reactor Building 750 Stabilization (March 2010)
- Complete D&D stack (March 2011)
- Complete High-Flux Beam Reactor Physical Project (September 2011)

BRNL-0100 / Brookhaven Community and Regulatory Support

0 179 300

This PBS can be found within the Non-Defense Environmental Cleanup appropriation.

Brookhaven National Laboratory is listed on the National Priorities List. This PBS scope includes assistance to New York State for carrying out its oversight responsibilities in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act and the Federal Facility Agreement, also known as, the Brookhaven Interagency Agreement among the DOE, the United States Environmental Protection Agency, and the New York State Department of Environmental Conservation.

In FY 2011, the following activities are planned:

- Continued support by the New York Department of Environmental Conservation through a grant providing cleanup oversight at the Brookhaven National Laboratory.

Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
No metrics associated with this PBS					
Key Accomplishments (FY 2009)/Planned Milestones (FY 2010/FY 2011)					
<ul style="list-style-type: none"> ▪ The New York State Department of Environmental Conservation will continue oversight of the Brookhaven Graphite Research Reactor decontamination and decommissioning and progress in groundwater cleanup with continued operation of the groundwater treatment systems. * (FY 2009/September 2010) 					

CBC-CA-0013B-N / Solid Waste Stabilization and Disposition-California Sites-2012 (Non-Defense)

72 0 0

This PBS can be found within the Non-Defense Environmental Cleanup appropriation.

The scope of work within this PBS includes management of similar activities for waste management and environmental restoration at multiple Non-Defense sites in California. Services for site investigations, hydrogeologic studies, regulatory review, and stakeholder liaisons are also included within this project.

In FY 2011, the following activities are planned:

- No activities planned.

Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
All Other Sites					

(dollars in thousands)

			FY 2009	FY 2010	FY 2011
Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	83	83	83	83	100.0%

CBC-CA-0100-N / Oakland Community and Regulatory Support (Non-Defense)

115 262 0

This PBS can be found within the Non-Defense Environmental Cleanup appropriation.

This project provided funding for grants to State of California regulatory agencies for their oversight of environmental remediation at DOE sites, whether Comprehensive Environmental Response, Compensation, and Liability Act or Resource Conservation and Recovery Act driven.

In FY 2011, the following activities are planned:

- No activities planned.

Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
No metrics associated with this PBS					
Key Accomplishments (FY 2009)/Planned Milestones (FY 2010/FY 2011)					
<ul style="list-style-type: none"> ▪ Grants are paid annually to the State of California regulatory agencies (FY 2009) ▪ Regulators' annual cost reimbursement (FY 2009) 					

CBC-ND-0100 / CBC - Non-Defense Post Closure Administration and Program Support

1,100 1,200 0

This PBS can be found within the Non-Defense Environmental Cleanup appropriation.

Post-Closure Administration PBS provided funding support for post-closure contract liabilities such as ongoing site litigation support, contract closeouts, and worker's compensation for non-defense sites (i.e., Laboratory for Energy-Related Health Research, General Atomics, Title II Uranium Mill Tailing Remediation Act site, etc.).

In FY 2011, the following activities are planned:

- No activities planned.

Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
No metrics associated with this PBS					
Key Accomplishments (FY 2009)/Planned Milestones (FY 2010/FY 2011)					
<ul style="list-style-type: none"> ▪ ITL Site: Transfer to the Office of Legacy Management. (October 2009) 					

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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**CBC-ETEC-0040 / Nuclear Facility D&D-Energy
Technology Engineering Center**

15,000 10,500 10,679

This PBS can be found within the Non-Defense Environmental Cleanup appropriation.

The purpose of this PBS scope is to: 1) clean up contaminated release sites; 2) decontaminate and decommission radioactively and chemically contaminated facilities for eventual release to the Boeing Company (the site owner); 3) perform Resource Conservation and Recovery Act cleanup involving the remediation of both contaminated groundwater and soil; and 4) remove radioactive and hazardous waste from the site applying (when possible) waste minimization principles such as recycling. Currently, all decontamination and decommissioning is complete except for the Sodium Pump Test Facility, Building 4024, Hazardous Waste Management Facility, and the Radioactive Materials Handling Facility complex. Soil and groundwater characterization is being performed.

The end-state is to complete cleanup for both radiological contamination and chemical contamination. The site will then be turned over to the Boeing Company, which owns the land.

In FY 2011, the following activities are planned:

- Continue Resource Conservation and Recovery Act facility investigation program for soils and groundwater including sampling, analysis, and report preparations.
- Continue preparation of required supporting information for completion of a court ordered Environmental Impact Statement.
- Perform ongoing program support and landlord activities.
- Perform annual groundwater monitoring and site-wide environmental monitoring.
- A portion of the scope of work typically covered in this PBS is being executed with ARRA funding as discussed above in the American Recovery and Reinvestment Act Activities section of the Site Overview.

Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	1,055	1,055	1,055	1,080	98.0%
Radioactive Facility Completions (Number of Facilities)	4	4	4	6	67.0%
Industrial Facility Completions (Number of Facilities)	24	24	24	26	92.0%
Remediation Complete (Number of Release Sites)	4	4	4	14	29.0%

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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Key Accomplishments (FY 2009)/Planned Milestones (FY 2010/FY 2011)

- Continue development of Environmental Impact Statement. (FY 2009)

**CBC-ITL-0030 / Soil and Water Remediation-
Inhalation Toxicology Laboratory**

272 0 0

This PBS can be found within the Non-Defense Environmental Cleanup appropriation.

Remedial activities for contaminated soil and groundwater at the site were completed in 1997. The EM Project was completed in FY 2009. In FY 2011, the site post-closure administration responsibilities, including recording keeping and administrative closure, will be transferred to the Office of Legacy Management.

In FY 2011, the following activities are planned:

- Project completion in FY 2009, no activities planned.

Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	359	359	359	359	100.0%
Remediation Complete (Number of Release Sites)	9	9	9	9	100.0%

**CBC-MOAB-0031 / Soil and Water Remediation-
Moab**

40,699 39,000 31,000

This PBS can be found within the Non-Defense Environmental Cleanup appropriation.

The project scope is to remediate contaminated mill tailings, mill debris, contaminated ground water, and contaminated vicinity properties at the former Atlas Minerals Corporation uranium ore-processing site. DOE became responsible for this mission upon enactment of the Floyd D. Spence National Defense Authorization Act of 2001. A Record of Decision issued in September 2005 required relocation of the mill tailings away from the Colorado River to a DOE-constructed disposal facility near Crescent Junction, Utah, primarily via rail transportation. The site is of particular public interest due to its unique setting on the banks of the Colorado River and its proximity to Arches National Park.

In FY 2011, the following activities are planned:

- Moab and Crescent Junction sites operations and maintenance.
- Continue operating interim remedial action for contaminated groundwater.

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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- Continue placing tailings into the disposal cell and constructing the cell cover.
- Continue tailings excavation and transport from millsite to the disposal cell.
- Perform operations and maintenance of the materials handling system and infrastructure.
- Continue remediating vicinity properties in the community surrounding the tailings pile.
- A portion of the scope of work typically covered in this PBS is being executed with ARRA funding as discussed above in the American Recovery and Reinvestment Act Activities section of the Site Overview.

Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
No metrics associated with this PBS					
Key Accomplishments (FY 2009)/Planned Milestones (FY 2010/FY 2011)					
<ul style="list-style-type: none"> ▪ Start Cane Creek Rail Road upgrade. (FY 2009) ▪ Complete Moab site materials handling infrastructure (FY 2009) ▪ EVMS certification review (FY 2009) ▪ Complete Crescent Junction Rail Infrastructure (FY 2009) ▪ Complete Moab rail infrastructure (FY 2009) ▪ Start Mill Tailings Haul (FY 2009) ▪ Complete Cane Creek Branch Line rail upgrades (FY 2009) ▪ Complete Cane Creek Branch Line road crossing upgrades (FY 2009) ▪ Haul 215,000 tons of tailings (FY 2009) ▪ Recover 30 million gallons of contaminated ground water (November 2009) ▪ Transport 1.6 million tons of tailings to the disposal cell (September 2011) 					

**CBC-SLAC-0030 / Soil and Water Remediation-
Stanford Linear Accelerator Center**

4,883 7,100 3,526

This PBS can be found within the Non-Defense Environmental Cleanup appropriation.

Activities in this PBS involve the cleanup of legacy contamination resulting from the physics research mission and operations over the past several decades at the SLAC National Accelerator Laboratory. The EM mission includes the identification of chemical contaminants in soil and groundwater and developing and implementing remedies to address these environmental concerns using Comprehensive Environmental Response, Compensation, and Liability Act technical guidance in accordance with the

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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Order. The principal contaminants of concern include polychlorinated biphenyls, lead, and volatile organic compounds in soils and groundwater. Preliminary Site Assessments have identified 54 release sites requiring further action; either further risk evaluation or remediation.

In FY 2011, the following activities are planned:

- Operate installed groundwater treatment systems and maintain compliance with Board Order.
- Complete installation of groundwater wells and treatment system.
- Complete residual remedial excavation and disposal for all West SLAC National Accelerator Laboratory sites and achieve closure certification.
- A portion of the scope of work typically covered in this PBS is being executed with ARRA funding as discussed above in the American Recovery and Reinvestment Act Activities section of the Site Overview.

Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
Remediation Complete (Number of Release Sites)	17	32	51	51	100.0%
Key Accomplishments (FY 2009)/Planned Milestones (FY 2010/FY 2011)					
<ul style="list-style-type: none"> ▪ Complete Lower Salvage Yard Removal Action (FY 2009) 					

CBC-TUBA-0031 / Soil and Water Remediation-Tuba City

5,000 0 0

This PBS can be found within the Non-Defense Environmental Cleanup appropriation.

This project scope presents the basis for a schedule for the United States Department of Energy, Office of Environmental Management to remediate property located near the Tuba City, Arizona, disposal site that may contain residual radioactive material. The Tuba City disposal site is a former Uranium Mill Tailings Remedial Action project site.

In FY 2011, the following activities are planned:

- No activities planned.

Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
No metrics associated with this PBS					

Total, All Other Sites

95,053 83,062 59,066

Explanation of Funding Changes

FY 2011 vs.
FY 2010
(\$000)

Non-Defense Environmental Cleanup

Small Sites

Argonne National Laboratory

CH-ANLE-0040 / Nuclear Facility D&D-Argonne National Laboratory-East

- In October 2010, all EM legacy cleanup work was completed; therefore, no funding was requested for FY 2011. In FY 2010, EM received \$10,000,000 from the National Nuclear Security Administration for cleanup efforts. -10,000

Brookhaven National Laboratory

BRNL-0030 / Soil and Water Remediation-Brookhaven National Laboratory

- Decrease reflects completion of remediation of contaminated soil at Building 96 Source Area and remediation of contaminated groundwater at the Sr-90 Plume. -2,744

BRNL-0040 / Nuclear Facility D&D-Brookhaven Graphite Research Reactor

- Decrease reflects transition to long-term surveillance and monitoring. -4,969

BRNL-0041 / Nuclear Facility D&D-High Flux Beam Reactor

- Increase reflects accelerated cleanup in order to work toward closeout of legacy scope. 6,453

BRNL-0100 / Brookhaven Community and Regulatory Support

- No significant change. 121

California Site Support

CBC-CA-0100-N / Oakland Community and Regulatory Support (Non-Defense)

- No significant change. -262

Completed Sites/Program Support

CBC-ND-0100 / CBC - Non-Defense Post Closure Administration and Program Support

- No significant change. -1,200

Energy Technology Engineering Center

CBC-ETEC-0040 / Nuclear Facility D&D-Energy Technology Engineering Center

- Decrease reflects completion of the congressionally mandated radiological background study and the Area IV radiological characterization study. 179

FY 2011 vs. FY 2010 (\$000)

Moab

CBC-MOAB-0031 / Soil and Water Remediation-Moab

- Decrease reflects scope of work that is being executed with ARRA funding as discussed above in the American Recovery and Reinvestment Act Activities section of the Site Overview and an increase of efficiency of operations. -8,000

SLAC National Accelerator Laboratory

CBC-SLAC-0030 / Soil and Water Remediation-Stanford Linear Accelerator Center

- Decrease reflects scope of work that is being executed with ARRA funding as discussed above in the American Recovery and Reinvestment Act Activities section of the Site Overview. -3,574

Total, All Other Sites

-23,996

Headquarters Operations

Funding by Site

(dollars in thousands)

	FY 2009 Current Appropriation	FY 2009 Current Recovery Act Appropriation	FY 2010 Current Appropriation	FY 2011 Request
Congressionally Directed Projects	22,665	0	4,000	0
Headquarters	43,930	68,950	34,000	25,143
Total, Headquarters Operations	66,595	68,950	38,000	25,143

Description

The Headquarters Operations program includes policy, management and technical support activities to provide management and direction for various crosscutting EM and DOE initiatives. Through this program, EM establishes and implements national and departmental policies, provides focused technical expertise to resolve barriers to site cleanup, and conducts analyses and integrates activities across the DOE complex. The activities provide the policy basis and foundation for sites to complete their mission. The activities also identify opportunities that may result in cost savings. Also included is the Uranium/Thorium Reimbursement program that provides reimbursements to licensees (subject to a site-specific limit) for the cost of environmental cleanup of uranium and thorium processing contamination attributable to materials sold to the Government.

Benefits

As the EM cleanup progresses, the risk and hazard to human health and the environment is greatly reduced. In addition, as cleanup is completed and sites are closed, the financial resources needed to maintain site infrastructure will no longer be required. The integration, policy management, crosscutting and other activities funded by this account ensures that EM's primary cleanup mission and other DOE objectives proceed in a consistent, responsible and efficient manner.

American Recovery and Reinvestment Act Activities

The UED&D Title X Uranium/Thorium Reimbursement Program American Reinvestment and Recovery activities are funded at \$68,950,000. Specifically, this funding will allow DOE to comply with Congressional direction to reimburse cleanup costs to companies that formerly processed uranium and thorium for sale to the Federal Government. The Title X Uranium/Thorium Reimbursement Program reimburses licensees, of certain Uranium and Thorium processing sites, for their portion of cleanup costs attributable to the production and sales of Uranium and Thorium to the Federal Government during the Cold War Era. Specifically, funding provided by the Recovery Act will be used to reimburse all eligible outstanding claims owed to eleven licensees. Cleanup generally consists of the demolition and disposal of mills that processed Uranium and Thorium ores; consolidation and capping of Uranium and Thorium mill tailings (process waste) in disposal cells; and the cleanup and treatment of groundwater. This

funding will enable the licensees of these sites to accelerate the completion of their cleanup programs and the elimination of associated environmental risks at the sites.

Mercury Export Ban Act of 2008

The Mercury Export Ban Act of 2008 bans the export of elemental mercury generated in the United States beginning in 2013, prohibits federal agencies from either selling or distributing mercury, and instructs DOE to provide long-term management and storage for elemental mercury. The facility needs to be operational by January 1, 2013. Additionally, DOE’s mercury storage operations will be subject to the requirements of the Solid Waste Disposal Act, the Resource Conservation and Recovery Act, and the National Environmental Policy Act. In addition, DOE was required to issue guidance outlining procedures and standards for the operation of the long-term elemental mercury management and storage facility no later than October 1, 2009. DOE issued these procedures and standards guidance in November 2009. By October 1, 2012, DOE shall disclose fee amounts that will be collected at the time of mercury delivery to the management and storage facility. As soon as the designated facility is operational, DOE is required to transmit a report to Congress each year on costs incurred; this action will be completed no later than 60 days after the end of each Federal fiscal year. Finally, DOE is required to transmit to Congress a Mercury Recycling Study by July 1, 2014.

DOE began preparation of an Environmental Impact Statement in May 2009 to identify a long-term elemental mercury management and storage facility. The total cost of these two documents is estimated at \$5M, of which \$3.3M was funded in FY 2009, with the balance of \$1.7M to be funded in FY 2010.

Funding Schedule by Activity

	(dollars in thousands)		
	FY 2009	FY 2010	FY 2011
Defense Environmental Cleanup			
Program Support			
Headquarters			
HQ-MS-0100 / Policy, Management, and Technical Support	33,930	34,000	25,143
Congressionally Directed Projects			
Headquarters			
HQ-CDP-0100 / Congressionally Directed Projects	17,908	4,000	0
Total, Defense Environmental Cleanup	51,838	38,000	25,143
Non-Defense Environmental Cleanup			
Congressionally Directed Projects			
Headquarters			
HQ-CDP-0100-N / Non-Defense Congressionally Directed Projects	4,757	0	0

	(dollars in thousands)		
	FY 2009	FY 2010	FY 2011
Uranium Enrichment Decontamination and Decommissioning Fund			
U/Th Reimbursements			
Headquarters			
HQ-UR-0100 / Reimbursements to Uranium/Thorium Licensees	10,000	0	0
Licensees			
Total, Headquarters Operations	66,595	38,000	25,143

Detailed Justification

	(dollars in thousands)		
	FY 2009	FY 2010	FY 2011
HQ-MS-0100 / Policy, Management, and Technical Support	33,930	34,000	25,143

HQ-MS-0100 / Policy, Management, and Technical Support

33,930 34,000 25,143

This PBS can be found within the Defense Environmental Cleanup appropriation.

This PBS scope includes management and direction for various crosscutting EM and DOE initiatives, establishment and implementation of national and departmental policies, various intergovernmental activities, and analyses and integration activities across the DOE complex. Also, the scope of this PBS includes government-furnished services and items necessary to accelerate site cleanup and risk reduction efforts, assure pathways to disposition waste and materials, conduct transportation, packaging, and emergency preparedness activities, complete necessary policy analyses, support legal claims, support closure assistance activities, and effectively communicate with the public and stakeholders regarding the EM program's activities. It includes the National Environmental Policy Act analysis on Greater-Than-Class C radioactive waste disposal, as required by Section 631 of the Energy Policy Act of 2005.

In FY 2011, the following activities are planned:

- Continue support of Tribal, State, and local government participation through the State and Tribal Government Working Group, local officials exchange seminars, government-to-government interactions with the Native American Tribes and grants with the National Governors Association.
- Provide expertise in the areas of safety, health and security, emergency management, package certification, quality assurance, nuclear criticality safety, and risk management.
- Instill safety awareness by utilizing the National Safety Council to conduct surveys which will indicate whether and how EM's commitment to safety is working.
- Issue the final Environmental Impact Statement for Disposal of Greater-Than-Class C Radioactive Waste.

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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- Support various Secretarial and Departmental initiatives, including the Defense Contracts Audit Agency audits, Government Industry Data Exchange Program and Consolidated Accounting Investment System.
- Provide support to various advisory groups such as the Nuclear Regulatory Commission, National Academy of Sciences and Low-Level Radioactive Waste Forum, to obtain technical assistance and expertise that indirectly supports EM mission objectives.
- Administer the EM and DOE-wide transportation and packaging responsibilities and the Transportation Emergency Preparedness Program.
- Provide rapid response from technical experts or “External/Internal” review teams to address emerging, imminent technical issues impeding site cleanup and closure.
- Provide technical solution projects designed to reduce near-term technical risks and technical assistance to include site troubleshooting, consulting, scientific or technical problem solving.
- Complete Mercury Export Ban Environmental Impact Statement, develop the fee amounts for long-term elemental mercury management and storage, and begin planning activities for the facility.

Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
No metrics associated with this PBS					

HQ-CDP-0100 / Congressionally Directed Projects **17,908** **4,000** **0**

This PBS can be found within the Defense Environmental Cleanup appropriation.

The FY 2009 Omnibus Appropriation included six congressionally directed projects within the Office of Environmental Management.

▪ Characteristics and Clean-up of U.S. Nuclear Legacy (MS)	3,806	4,000	0
▪ Miamisburg Mound, OU-1 (OH)	4,757	0	0
▪ Testing of Polymeric Hydrogels for Radiation Decontamination (HI)	1,618	0	0
▪ The International Alternative Clean-up Technology Agreement (PA)	2,854	0	0

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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▪ Water Resources Data, Modeling, and Visualization Center (NV)	1,067	0	0
▪ WIPP Records Archive (NM)	3,806	0	0
Total, Congressionally Direct Projects	17,908	4,000	0

Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
No metrics associated with this PBS					

HQ-CDP-0100-N / Non-Defense Congressionally Directed Projects

4,757 0 0

This PBS can be found within the Non-Defense Environmental Cleanup Projects.

The FY 2009 Omnibus Appropriation included three congressionally directed projects within the Office of Environmental Management.

▪ Bioinformatics and Computational Biology Initiative (KY)	951	0	0
▪ Southwest Experimental Fast Oxide Reactor Decommissioning (AR)	1,903	0	0
▪ Western Environmental Technology Office (MT)	1,903	0	0
Total, Congressionally Direct Projects	4,757	0	0

Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
No metrics associated with this PBS					

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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HQ-UR-0100 / Reimbursements to Uranium/Thorium Licensees

10,000 0 0

This PBS can be found within the Uranium Enrichment Decontamination and Decommissioning Fund appropriation.

Pursuant to Title X of the Energy Policy Act of 1992 and 10 CFR Part 765, this PBS scope includes reimbursements to fourteen active uranium and thorium processing site licensees for their portion of environmental cleanup costs attributable to nuclear materials sold to the Federal Government. Of these fourteen, only eleven licensees are eligible for continued Federal reimbursement. The total estimated maximum future liability for the program is approximately \$240,000,000 in unescalated dollars. This is based on the completed review and approval of licensees' Plans for Subsequent Remedial Action (required per a provision in the Energy Policy Act). The cost estimate in each approved Plan for Subsequent Remedial Action is the maximum amount in constant dollars that a licensee may claim for reimbursement.

As of September 2009, DOE has reimbursed the thirteen uranium licensees \$272,121,000 and the thorium licensee \$333,145,000 for an aggregate reimbursement amount of \$605,266,000.

In FY 2011, the following activities are planned:

- No planned activities in FY 2011; the payments typically provided under this PBS are being provided with ARRA funding as discussed above in the American Recovery and Reinvestment Act Activities section of the Site Overview.

Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
No metrics associated with this PBS					

Total, Headquarters Operations **66,595 38,000 25,143**

**Title X of the Energy Policy Act of 1992: Uranium/Thorium Reimbursement Program
 Status of Payments through Fiscal Year 2009 and Estimated Maximum Program Liability
 (\$ Thousands)**

<u>Licenseses</u>	Total Payments FY 1994- FY 2009	Approved but Unpaid Claim Balances After FY 2009 Payments (Costs for Uranium Licensees that Exceed Current Dry Short Ton Ceiling)	Maximum Remaining Program Liability Including Estimated Costs in Approved Plans for Subsequent Remedial Action
Uranium			
American Nuclear Corp. Site			
American Nuclear Corporation.....	820	0	0
State of Wyoming.....	1,269	0	758
Atlantic Richfield Company ^a	32,306	0	0
Atlas Corporation/Moab Mill Reclamation Trust ^a	9,694	0	0
Cotter Corporation.....	2,987	423	3,340
Dawn Mining Company.....	7,897	0	10,545
Homestake Mining Company.....	47,337	0	88,029
Pathfinder Mines Corporation.....	10,722	0	327
Petrotomics Company ^a	2,850	0	0
Rio Algom Mining LLC ^b	35,245	0	12,313
Tennessee Valley Authority.....	15,410	9,720	9,720
Umetco Minerals Corporation-CO.....	54,064	19,145	34,420
Umetco Minerals Corporation-WY.....	19,943	3,735	6,683
Western Nuclear, Incorporated.....	31,575	0	1,926
Subtotal, Uranium.....	272,121	33,023	168,061

^a Reimbursements have been completed to the Atlantic Richfield Company, the licensees of the Moab site and the Petrotomics Company.

^b Formerly Quivira Mining Company.

Licensees
Thorium

	Total Payments FY 1994- FY 2009	Approved but Unpaid Claim Balances After FY 2009 Payments (Costs for Uranium Licensees that Exceed Current Dry Short Ton Ceiling)	Maximum Remaining Program Liability Including Estimated Costs in Approved Plans for Subsequent Remedial Action
Tronox LLC ^c	333,145	0	70,840
Subtotal, Thorium.....	333,145	0	70,840
Total, Uranium and Thorium.....	605,266	33,023	238,901

^c Formerly Kerr-McGee Chemical Corp.

Explanation of Funding Changes

FY 2011 vs. FY 2010 (\$000)

**Defense Environmental Cleanup
Congressionally Directed Projects
Headquarters**

HQ-CDP-0100 / Congressionally Directed Projects

- No funding requested. -4,000

Program Support

HQ-MS-0100 / Policy, Management, and Technical Support

- Reduction reflects reduced requirements for various environmental impact statement activities and secretarial initiatives. -8,857

Total, Headquarters Operations -12,857

Program Direction

Funding Profile by Category

(dollars in thousands/whole FTEs)

	FY 2009	FY 2010	FY 2011
Carlsbad			
Salaries and Benefits	6,018	7,000	7,315
Travel	393	450	179
Other Related Expenses	411	689	534
Total, Carlsbad	6,822	8,139	8,028
Full Time Equivalents	45	50	50
Idaho			
Salaries and Benefits	9,449	9,880	10,324
Travel	285	285	200
Support Services	287	39	0
Other Related Expenses	319	330	252
Total, Idaho	10,340	10,534	10,776
Full Time Equivalents	69	70	70
Oak Ridge			
Salaries and Benefits	11,077	11,907	12,443
Travel	212	218	225
Support Services	2,642	2,984	1,115
Other Related Expenses	2,827	2,827	2,827
Total, Oak Ridge	16,758	17,936	16,610
Full Time Equivalents	80	82	82
Portsmouth/Paducah Project Office			
Salaries and Benefits	6,817	7,147	7,469
Travel	355	325	350
Support Services	1,198	1,300	1,040
Other Related Expenses	1,520	520	92
Total, Portsmouth/Paducah Project Office	9,890	9,292	8,951
Full Time Equivalents	47	48	48
Richland			
Salaries and Benefits	36,077	38,171	39,889
Travel	681	768	531
Support Services	936	704	486
Other Related Expenses	7,347	6,188	4,276
Total, Richland	45,041	45,831	45,182
Full Time Equivalents	264	275	275
River Protection			
Salaries and Benefits	20,012	20,792	21,728
Travel	669	638	341
Support Services	2,875	2,660	2,000
Other Related Expenses	2,127	2,369	1,575
Total, River Protection	25,683	26,459	25,644
Full Time Equivalents	134	145	145

(dollars in thousands/whole FTEs)

	FY 2009	FY 2010	FY 2011
Savannah River			
Salaries and Benefits	43,462	46,355	48,441
Travel	714	933	789
Support Services	1,809	1,723	1,797
Other Related Expenses	3,244	6,058	3,436
Total, Savannah River	49,229	55,069	54,463
Full Time Equivalents	331	345	345
Small Sites			
Salaries and Benefits	4,400	4,634	4,843
Travel	424	426	250
Support Services	1,226	1,999	1,380
Other Related Expenses	1,200	1,466	1,058
Total, Small Sites	7,250	8,525	7,531
Full Time Equivalents	32	32	32
Nevada Site Office			
Salaries and Benefits	3,242	3,440	3,595
Travel	83	94	38
Support Services	695	355	278
Other Related Expenses	85	39	21
Total, Nevada Site Office	4,105	3,928	3,932
Full Time Equivalents	24	25	25
NNSA Sites			
Salaries and Benefits	4,227	4,012	4,193
Travel	255	277	191
Support Services	837	1,676	1,080
Other Related Expenses	663	1,148	871
Total, NNSA Sites	5,982	7,113	6,335
Full Time Equivalents	32	28	28
EM Career Development Corp			
Salaries and Benefits	3,906	3,200	3,344
Travel	600	797	551
Other Related Expenses	235	197	136
Total, EM Career Development Corp	4,741	4,194	4,031
Full Time Equivalents	39	40	40
Field			
Salaries and Benefits	148,687	156,538	163,584
Travel	4,671	5,211	3,645
Support Services	12,505	13,440	9,176
Other Related Expenses	19,978	21,831	15,078
Total, Field	185,841	197,020	191,483
Full Time Equivalents	1,097	1,140	1,140
Headquarters Operations			
Salaries and Benefits	53,889	59,315	61,984
Travel	3,568	3,503	2,421
Support Services	11,744	29,466	20,361
Other Related Expenses	26,123	25,879	17,894
Total, Headquarters Operations	95,324	118,163	102,660
Full Time Equivalents	329	344	344

(dollars in thousands/whole FTEs)

	FY 2009	FY 2010	FY 2011
Consolidated Business Center			
Salaries and Benefits	23,594	25,645	26,799
Travel	1,235	1,100	500
Support Services	274	1,500	83
Other Related Expenses	3,539	1,572	2,300
Total, Consolidated Business Center	28,642	29,817	29,682
Full Time Equivalents	175	190	190
Environmental Management			
Salaries and Benefits	226,170	241,498	252,367
Travel	9,474	9,814	6,566
Support Services	24,523	44,406	29,620
Other Related Expenses	49,640	49,282	35,272
Total, Environmental Management	309,807	345,000	323,825
Full Time Equivalents	1,601	1,674	1,674

Mission

Program Direction provides for the Federal workforce responsible for the overall direction and administrative support of the EM program, including both Headquarters and field personnel. The EM mission of safe, risk reduction and cleanup of the nuclear weapons environmental legacy is carried out by a workforce composed largely of contractors, although there are a variety of functions that are inherently governmental (e.g., program management, contract administration, budget formulation and execution, and interagency and international coordination) that require a dedicated Federal workforce.

The role of the Headquarters Federal workforce is to provide leadership, establish and implement policy, conduct analyses, and integrate activities across sites. Increasing standards of accountability for program performance and spending require Headquarters staff to closely analyze budget requests, track expenditures, and compile congressionally mandated and other program plans (e.g., footprint reduction goals). Field personnel are responsible and directly accountable for implementing the EM program within the framework established by Headquarters policy and guidance. In addition, the field is responsible for the day-to-day oversight and project management of the Department's facilities, the facility contractors and other support contractors, as well as construction and test activities that support EM activities for DOE.

Environmental Management Professional Development

EM will continue aggressive recruitment efforts to seek qualified personnel. Therefore, the EM Professional Development Corps (previously EM Career Intern Program) will be institutionalized to provide a means for succession planning and ensuring a continuing source of highly competent technical personnel with the skills and knowledge to meet EM's current and future technical staffing needs. The program began in FY 2007 with the hiring of 20 individuals. It is anticipated that a steady pipeline of 40 individuals will be participating in the program at any one time. Upon successful completion of the career development program, these individuals will be eligible for non-competitive conversion to permanent career conditional or career status.

National Academy of Public Administration Recommendations

In December 2007 the National Academy of Public Administration published a report on the Environmental Management program which included recommendations on Human Capital. Specifically, the Academy “urged the Department to increase EM’s staffing allocation by at least 200 over the currently budgeted levels.” EM leadership collectively agreed that the recommended FTE ceiling increases were necessary to address our mission needs and began an aggressive campaign to improve recruitment strategies and address the Academy recommendation. EM has successfully recruited and retained more than 200 people since the release of the Academy report.

Detailed Justification

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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Salaries and Benefits	226,170	241,498	252,367
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Provides funding for 1,674 full-time equivalent employees in FY 2011 with the responsibility for the overall direction and administrative support of the EM program, including Headquarters (344 employees based in Germantown, Maryland and Washington, DC), field personnel (1,100 employees at Operations/Field/Sites Offices located throughout the United States), the EM Consolidated Business Center (190 employees in Cincinnati, Ohio), and the recruitment of 40 employees associated with the EM Professional Development Corps. The federal workforce performs a variety of functions that are inherently governmental such as project management, program management, contract management and administration, budget formulation and execution, and interagency and international coordination. In addition, funding is provided for workers’ compensation payments to the Department of Labor, transit subsidies and incentive awards.

Travel	9,474	9,814	6,566
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The FY 2011 estimate includes all costs of transportation of persons, subsistence of travelers, incidental travel expenses, as well as funding to support permanent change of duty station in accordance with Federal travel regulations that are directly chargeable to EM. In addition, travel costs associated with the continuation of the EM Professional Development Corps to support rotational assignments at EM sites, training, and participation at university sponsored career fairs, professional conferences and special interest/emphasis conferences for recruitment purposes are provided. Travel expenses for the certifications associated with Federal Project Directors and Procurement Specialists are also included.

Support Services	24,523	44,406	29,620
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Provides technical and administrative support for cost effective, short-term and intermittent requirements not available within the Federal workforce. Support services include but are not limited to technical and administrative support, program management and integration, management information and support systems, performance systems, and cost/schedule studies. Program management includes support for organizational and strategic planning; coordination and interaction with other Federal, State

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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and local government agencies and private industrial concerns; performance measurement; and cost assessment.

Technical support services include feasibility of design considerations; development of specifications, system definition, system review and reliability analyses; trade-off analyses; economic and environmental analyses which may be used in DOE's preparation of environmental impact statements; and test and evaluation, surveys or reviews to improve the effectiveness, efficiency and economy of technical operations.

Management support services include analyses of workload and work flow; directives management studies; automated data processing; manpower systems analyses; assistance in the preparation of program plans; training and education; analyses of Departmental management processes; and any other reports or analyses directed toward improving the effectiveness, efficiency and economy of management and general administrative services.

Other Related Expenses	49,640	49,282	35,272
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Provides for the physical and administrative support to the Federal workforce at both Headquarters and the field. The level of support provided by EM varies at each site depending on EM's role in relation to other Departmental programs. Examples of the type of support that may be provided include training, rents and utilities, supplies, printing, maintenance and repair of government vehicles and equipment; maintenance and renovations of buildings; janitorial and custodial services; transit operations (shuttle bus); alarm protection systems; and other vendor services, including those associated with contractual services (storage of household goods and the buying/selling of homes) in conjunction with directed permanent change of duty station. Also includes funding to support core curriculum formal classroom training as well as recruitment incentives such as Student Loan Reimbursement for the EM Professional Development Corps.

A Working Capital Fund established at Headquarters to which EM contributes, allocates the costs of common administrative services to the recipient Headquarters organizations. Activities supported by the Working Capital Fund include automated office support, telephone services, postage, printing and graphics, supplies, building occupancy, payroll processing, contract closeouts, corporate training services, Project Management Career Development Program, the Standard Accounting and Reporting System, shuttle bus, logistics support services contract, Strategic Integrated Procurement Enterprise System, and On-line Learning Center. This category also includes the cost of training the Federal workforce, and the Corporate Asset Management and Capital Planning and Investment Control (CPIC) Information Technology Project Management Training. Significant portions of these expenditures are fixed in nature and do not change in relation to the workforce.

Total, Program Direction	309,807	345,000	323,825
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Explanation of Funding Changes

FY 2011 vs. FY 2010 (\$000)

Salaries and Benefits

- Increase reflects government-wide 4.5 percent escalation for pay and personnel-related costs for 1674 full-time equivalent employees. 10,869

Travel

- Decrease reflects the return on information technology investments such as video conference capabilities. -3,248

Support Services

- Decrease reflects the shift of responsibilities from contractors to the more than 200 federal staff recently added to the EM workforce. -14,786

Other Related Expenses

- Decrease reflects EM's on-going efforts to maximize the usage of uncosted carryover and reduce non-payroll-related expenses. -14,010

Total Funding Change, Program Direction

-21,175

Support Services by Category

(dollars in thousands/whole FTEs)

	FY 2009	FY 2010	FY 2011
Technical Support Services			
Feasibility of Design Considerations	3,560	5,249	5,547
Development of Specifications	0	0	0
System Definition	551	116	0
System Review and Reliability Analyses	0	0	0
Trade-Off Analyses	0	0	0
Economic and Environmental Analysis	4,259	7,879	6,033
Test and Evaluation Studies	96	104	77
Surveys or Reviews of Technical Operations	6,097	12,213	5,646
Total, Technical Support Services	14,563	25,561	17,303
Management Support Services			
Analyses of Workload and Work Flow	0	0	0
Directives Management Studies	687	2,668	1,127
Automatic Data Processing	1,311	2,541	2,582
Manpower Systems Analyses	0	0	0
Preparation of Program Plans	0	0	0
Training and Education	177	273	294
Analysis of DOE Management Processes	637	987	640
Reports and Analyses Management and General Administrative Support	7,148	12,376	7,674
Total, Management Support Services	9,960	18,845	12,317
Total, Support Services	24,523	44,406	29,620

Other Related Expenses by Category

(dollars in thousands/whole FTEs)

	FY 2009	FY 2010	FY 2011
Other Related Expenses			
Rent to GSA	7,416	8,931	11,165
Rent to Others	1,213	1,268	1,532
Communication, Utilities, Misc.	6,873	8,131	4,590
Printing and Reproduction	222	72	0
Other Services	11,572	9,590	5,503
Training	900	215	229
Purchases from Gov. Accounts	1,376	186	129
Operation and Maintenance of Equipment	1,709	1,865	1,262
Supplies and Materials	240	199	105
Equipment	2,230	3,032	1,969
Working Capital Fund	15,889	15,793	8,788
Total, Other Related Expenses	49,640	49,282	35,272

Safeguards and Security

Funding Schedule by Activity

(dollars in thousands)

	FY 2009	FY 2010	FY 2011
Defense Environmental Cleanup			
Safeguards and Security			
CB-0020 / Safeguards and Security	5,124	4,644	4,755
OH-WV-0020 / Safeguards and Security-West Valley	2,800	1,859	1,926
OR-0020 / Safeguards and Security	27,020	32,400	17,300
PA-0020 / Safeguards and Security	8,196	8,190	8,496
PO-0020 / Safeguards and Security	4,500	17,509	15,979
RL-0020 / Safeguards and Security	79,765	82,771	69,234
SR-0020 / Safeguards and Security	138,736	132,064	132,064
Subtotal, Safeguards and Security	266,141	279,437	249,754

Description

The Environmental Management 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.

The Environmental Management protected assets include large quantities of nuclear and special nuclear materials, millions of classified documents, classified technology, and specialized equipment as well as more than 950 square miles of government owned land and hundreds of major nuclear and non-nuclear facilities at seven sites across the country. Nearly 27,000 DOE-EM contractor employees work at these sites which are protected by over 1,800 security personnel including nearly 1,500 protective force personnel. The majority of the budget covers salaries and benefits of the security personnel along with the weapons, ammunition, vehicles, training, vulnerability assessments, and computer modeling required to keep them in an operational mode.

Benefits

EM's landlord sites include the Savannah River Site^a, the Hanford Site (including the Office of River Protection), Carlsbad/Waste Isolation Pilot Plant, West Valley Demonstration Project, East Tennessee Technology Park, Paducah Gaseous Diffusion Plant, and the Portsmouth Gaseous Diffusion Plant.

These sites are secured by multiple layers of security measures. Each site has a security plan or a site safeguards and security plan and a cyber security plan addressing the protection programs for DOE interests including: classified information, nuclear weapons components, and special nuclear materials. In addition, personnel security programs ensure the continued reliability of employees having access to classified matter and special nuclear material at all EM sites.

Since the events of September 11, 2001, the Department revised the Design Basis Threat several times to define the protection capabilities of security programs, particularly for Category I special nuclear material, throughout the complex. During this period, EM made significant strides consolidating its special nuclear material, to include reducing its Category I facilities to one each at the Hanford Site and the Savannah River Site. Despite these significant consolidations, EM safeguards and security costs continue to be assessed to identify additional efficiencies in implementing the recently promulgated Graded Security Protection policy.

The following is a brief description of the type of activities performed to fulfill EM's safeguards and security responsibilities:

Protective Forces

Protective forces are an integral part of the security program designed to protect EM assets, including special nuclear material, classified and sensitive information, and other EM interests. Protective forces are a significant cost driver of the safeguards and security program and EM managers promote the use of new technologies which may reduce reliance on protective forces and associated costs. Protective forces provide response capabilities to interrupt, deny, contain, and neutralize any adversarial actions against Departmental assets.

Transportation

EM ensures security (including safe havens) for both inter- and intra-site transfers of special nuclear material and other classified and/or nuclear material. Domestic off-site special nuclear material shipments are made by the Office of Secure Transportation. The Office of Secure Transportation is authorized under 42 U.S.C to carry firearms and make arrests without warrant and is charged with the responsibility of safely and securely transporting and/or escorting nuclear devices, nuclear components, and sensitive nuclear materials. The courier is authorized under 10 CFR 1047.7(a)(3) and (4) to use deadly force to protect certain items. Special nuclear material is transported in packages and containers designed to contain radioactivity for health and safety purposes; the safety design provides inherent physical security protection, i.e., delay. These packages and containers for special nuclear material are also sealed with tamper indicating devices.

^a The tritium facilities are under the purview of the National Nuclear Security Administration.

Physical Security Systems

Category I and II quantities of special nuclear material are protected by an integrated physical protection system including access controls, barriers or delay mechanisms and intrusion detection systems annunciating locally as well as at central alarm stations.

- Access (ingress and egress) controls ensure that only appropriately cleared and authorized personnel are permitted access to special nuclear material and classified matter.
- Delay mechanisms are used to deter and delay access, removal, or unauthorized use of Category I and II quantities of special nuclear material. Delay mechanisms may include both passive physical barriers (e.g., walls, ceilings, floors, windows, doors, and security bars) and activated barriers (e.g., sticky foam, pop-up barriers, and cold smoke). Active and/or passive denial systems are employed at select target locations, as appropriate, to reduce reliance on protective forces.
- Security systems provide intrusion detection as required by DOE orders. Detection measures such as sensors or alarms, and closed-circuit televisions are used to protect classified matter and special nuclear material. Additional security measures include: explosive detection, and other inspection procedures.

Physical security systems are periodically tested according to the approved site performance testing plan to ensure system effectiveness.

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

Access authorizations are granted in accordance with DOE Manual 470.4-5, *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. Personnel Security also includes security education and awareness programs for DOE federal and contractor employees and processing and hosting approved foreign visitors under United States and DOE initiatives. Security investigation activities performed by the Federal Bureau of Investigation and the Office of Personnel Management associated with access authorizations are funded in their entirety in FY 2011 by each EM site. Prior to FY 2010, the Office of Security has funded field access authorization personnel security investigations with incremental funding provided by EM sites where additional security investigations were required above the base-level.

Material Control and Accountability

Material Control and Accountability programs are designed to deter and detect theft and diversion of nuclear material by both outside and inside adversaries. The level of control and accountability are graded based on the consequences of their loss. Material Control and Accountability programs address both the theft and diversion of special nuclear material or materials that can be used to make an improvised nuclear device.

Program Management

Safeguards and Security Program Management coordinates the management of Physical Protection, Protective Force, Information Security, Personnel Security, and Material Control and Accountability to achieve and ensure 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.

Appropriate levels of security are achieved by integrating site strategic and near-term operational planning with complex-wide requirements, in addition to the applicable laws, regulations, treaties, state, and local commitments. Foreign visits and assignments, safety, emergency management, and intelligence and counterintelligence programs are also addressed under Safeguards and Security Program Management. Program Management provides policy oversight and administration, planning, training, and development for the site's overall security program.

Cyber Security

EM Cyber Security provides protection for the processing, storing, and transmission of unclassified and classified computer/telecommunications information, processes, methods, and tools that support certification and accreditation of secure and sensitive enterprise networks, to ensure that all DOE unclassified and classified information resources are identified and protected in a manner consistent with the site's mission and possible threats. In the last few years, the Department has seen an increase in the amount and sophistication of cyber attacks. In addition, the Office of Management and Budget has mandated additional steps and processes aimed at enhancing the security of information systems and at enhancing the protection of sensitive personally identifiable information.

In response to Office of Inspector General findings, EM has implemented a Cyber Security assessment program to ensure that EM field sites are providing appropriate cyber security based on sound risk management principles and is monitoring site progress in resolving identified weaknesses during the certification and accreditation process mandated under the Federal Information Security Management Act and Office of Management and Budget directives. Through the assessment program, EM independently verifies and validates the effectiveness of mandatory controls and performs a discovery process to determine if additional weaknesses are present and not identified by the site self assessment process.

Detailed Justification

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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CB-0020 / Safeguards and Security **5,124** **4,644** **4,755**

The Waste Isolation Pilot Plant in Carlsbad, New Mexico, is the nation’s only mined geologic repository for the permanent disposal of defense-generated transuranic waste. The scope of the Security Program at the Waste Isolation Pilot Plant includes, but is not limited to, planning, administering, and executing a program that protects government assets.

In FY 2011, the following activities are planned:

- Maintain adequate security coverage at the Waste Isolation Pilot Plant.

Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
No metrics associated with this PBS					
Key Accomplishments (FY 2009)/Planned Milestones (FY 2010/FY 2011)					
<ul style="list-style-type: none"> ▪ Maintain Security Posture (FY 2009/September 2010/September 2011) 					

OH-WV-0020 / Safeguards and Security-West Valley **2,800** **1,859** **1,926**

The Safeguards and Security Program at the West Valley Demonstration Project includes those activities required to provide physical and cyber security for all project activities in accordance with applicable DOE standards. The West Valley Demonstration Project Safeguards and Security Program provides a secure working environment during execution of the Project by maintaining access controls and perimeter security of the site, and ensuring general site security for personnel and information technology systems.

This scope will continue until DOE’s mission at the West Valley Demonstration Project is complete.

In FY 2011, the following activities are planned:

- Provide physical and cyber security by an on-site guard force to ensure all DOE information resources are identified and protected at all times.
- Continue program management to oversee the security program including training and qualifications for the West Valley Demonstration Project.

Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
No metrics associated with this PBS					
Key Accomplishments (FY 2009)/Planned Milestones (FY 2010/FY 2011)					
<ul style="list-style-type: none"> ▪ Continue to support Project activities by providing physical security and protection, cyber security, visitor control, personnel security, and program management. (FY 2009/September 2010/September 2011) 					

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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OR-0020 / Safeguards and Security **27,020** **32,400** **17,300**

The East Tennessee Technology Park's Safeguards and Security Program is comprised of the following eight program elements: Protective Force, Security Systems, Information Security, Cyber Security, Personnel Security, Security Investigations, Nuclear Material Control and Accountability, and Program Management. The integration of these eight security elements provides stability and reliability to the overall security posture at the East Tennessee Technology Park.

The Safeguards and Security Program at the East Tennessee Technology Park continues to work towards the initial completion of Homeland Security Presidential Directive-12, which directed the Federal Government to transition to new identification credentials.

In FY 2011, the following activities are planned:

- Maintain DOE required security for the following major facilities: K-25, K-27, K-1037, Centrifuge Facilities, Classified Burial Grounds, Environmental Management Waste Management Facility, and Transuranic Waste Processing Facility.
- Security protection provided for enriched uranium, transuranic material, classified components, equipment and work performed under the American Recovery and Reinvestment Act.

Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
No metrics associated with this PBS					
Key Accomplishments (FY 2009)/Planned Milestones (FY 2010/FY 2011)					
<ul style="list-style-type: none"> ▪ Implement Safeguards and Security Program to project against loss or theft of classified matter or Special Nuclear Material (FY 2009/September 2010/September 2011) 					

PA-0020 / Safeguards and Security **8,196** **8,190** **8,496**

This project provides: visitor control, classification, personnel security, physical security (locks/alarms, access control), information security, implementation of the new Graded Security Protection policy (formerly the Design Basis Threat), Nuclear Material 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 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 of 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

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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management of Nuclear Material Control and Accountability activities are provided. Personnel security provides badging/clearance support for all employees, contractors, and visitors and visitor control.

In FY 2011, the following activities are planned:

- Provide security services for personnel, equipment, information, matter, and special nuclear materials relating to DOE missions, to include decommissioning, decontamination, and demolition activities.

Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
No metrics associated with this PBS					
Key Accomplishments (FY 2009)/Planned Milestones (FY 2010/FY 2011)					
<ul style="list-style-type: none"> ▪ Ensure that no unauthorized person or persons will gain access to the site and that all sensitive material is safeguarded. (FY 2009/September 2010/September 2011) 					

PO-0020 / Safeguards and Security

4,500

17,509

15,979

This PBS provides an integrated Safeguards and Security Program which includes the following program elements: protective forces; physical security systems to include sub-elements barrier/secure storage/locks and entry control and access controls; information security including information protection, classification/declassification, technical surveillance countermeasures, and operations security; Personnel security including 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; and cyber security including 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, and a limited number of litigation responses. 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.

In FY 2011, the following activities are planned:

- Maintain the appropriate level of safeguards and security using a graded approach for the non-leased portions of the Portsmouth Gaseous Diffusion Plant.
- Provide Protective Forces, Nuclear Material Control and Accountability and communications security services.

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
No metrics associated with this PBS					
Key Accomplishments (FY 2009)/Planned Milestones (FY 2010/FY 2011)					
<ul style="list-style-type: none"> Maintain appropriate levels of safeguards and security. (FY 2009/September 2010/September 2011) 					

RL-0020 / Safeguards and Security

79,765

82,771

69,234

The Safeguards and Security Program ensures appropriate levels of protection for the Hanford Site facilities against theft or diversion of special nuclear material; acts of radiological sabotage; espionage; theft or loss of classified matter; protection of sensitive information; theft or loss of government property; and other hostile acts that may cause unacceptable impacts on national security, or the health and safety of employees, the public, or the environment.

FY 2009 and FY 2010 funding included life-cycle and efficiency improvements for safeguards and security equipment, facilities, and weapons to support site activities and protective force defenses of the newly established protected area at the Canister Storage Building complex within the 200-East Area. This new protected area provides secure storage for nuclear materials pending disposition, allowed the closure of the Plutonium Finishing Plant protected area, and enables the accelerated decontamination and decommissioning of the Plutonium Finishing Plant complex. The new protected area became fully operational in the first quarter of FY 2010.

In FY 2011, the following activities are planned:

- Maintain appropriate Hanford site access controls, emergency response, and physical security at the Hanford Site, including protection of spent fuels and nuclear materials at the Canister Storage Building complex protected area.
- Maintain Material Control and Accountability, Information Security, Personnel Security, and Protective Force at all Hanford operations.
- Maintain information security, to include cyber security, programs for the protection of classified matter.

Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
No metrics associated with this PBS					
Key Accomplishments (FY 2009)/Planned Milestones (FY 2010/FY 2011)					
<ul style="list-style-type: none"> Implement security upgrades to Canister Storage Building (FY 2009) De-activate the Plutonium Finishing Plant's protected area (March 2010) Maintain appropriate Hanford site access controls, emergency response, and 					

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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physical security (September 2010/September 2011)

- Complete ~ \$7.7M of critical infrastructure/life-cycle one time upgrades (September 2010)

SR-0020 / Safeguards and Security

138,736

132,064

132,064

The DOE-Savannah River Office of Safeguards, Security, and Emergency Services oversees and manages, safeguards, security and emergency service activities at the Savannah River Site. This organization formulates and executes policies and programs in the areas of physical, information, and personnel security; classification and declassification; cyber security; technical surveillance countermeasures; foreign visits and assignments; protective force; and Material Control and Accountability. These various programs are implemented by Savannah River Nuclear Solutions (the M&O contractor) and WSI – Savannah River Site (the protective force contractor).

The Savannah River Site Safeguards and Security Program employs a number of methods to ensure 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. The Savannah River Site is required to ensure the security of the special nuclear material which it currently stores and processes.

In FY 2011, the following activities are planned:

- Operate and maintain the materials control and accountability program for special nuclear material.
- Maintain appropriate uniformed protective force personnel to assure the security of special nuclear materials, facilities, and other site assets.
- Operate and maintain physical security protection systems.
- Ensure protection of classified and unclassified computer security.
- Execute information and operational security measures, cyber security, personnel security and program management for the Savannah River Operations Office.

Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
Material Access Areas eliminated (Number of Material Access Areas)	2	2	2	3	+67.0%
Key Accomplishments (FY 2009)/Planned Milestones (FY 2010/FY 2011)					
<ul style="list-style-type: none"> Ensure timely and accurate material control and accountability for nuclear materials at the Savannah River Site (FY 2009/September 2010/September 2011) Ensure no theft of nuclear material takes place at the Savannah River Site (FY 2009/September 2010/September 2011) 					

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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- Ensure that no unauthorized person or persons will gain access to limited areas within the Site perimeter (FY 2009/September 2010/September 2011)
- Complete Graded Security Protection Policy implementation (September 2010)

Total, Safeguards and Security **266,141** **279,437** **249,754**

Funding Schedule by Site and Activity

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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Carlsbad			
Protective Forces	4,649	4,214	4,314
Information Security	211	191	196
Program Management	202	183	188
Subtotal, Carlsbad	5,062	4,588	4,698
Cyber Security	62	56	57
Total, Carlsbad	5,124	4,644	4,755
Oak Ridge			
Protective Forces	19,627	23,492	9,104
Physical Security Systems	1,910	1,974	1,935
Information Security	983	1,021	981
Personnel Security	688	73	76
Security Investigations	0	1,643	1,669
Material Control and Accountability	1,562	1,943	1,349
Program Management	885	885	817
Subtotal, Oak Ridge	25,655	31,031	15,931
Cyber Security	1,365	1,369	1,369
Total, Oak Ridge	27,020	32,400	17,300
Paducah			
Protective Forces	4,797	4,791	4,970
Physical Security Systems	781	781	810
Information Security	1,174	1,174	1,218
Personnel Security	246	0	0
Security Investigations	0	246	255
Material Control and Accountability	618	618	641
Program Management	580	580	602
Total, Paducah	8,196	8,190	8,496
Portsmouth			
Protective Forces	1,957	8,199	6,951
Physical Security Systems	230	843	818
Information Security	481	1,761	1,707
Personnel Security	118	0	0
Security Investigations	0	431	418

(dollars in thousands)

	FY 2009	FY 2010	FY 2011
Material Control and Accountability	123	450	436
Program Management	794	4,925	4,659
Subtotal, Portsmouth	3,703	16,609	14,989
Cyber Security	797	900	990
Total, Portsmouth	4,500	17,509	15,979
Richland			
Protective Forces	37,590	46,048	41,096
Physical Security Systems	12,303	11,288	6,779
Information Security	607	912	601
Personnel Security	2,085	2,441	2,203
Security Investigations	0	900	50
Material Control and Accountability	1,887	2,808	1,874
Program Management	23,028	16,260	14,668
Subtotal, Richland	77,500	80,657	67,271
Cyber Security	2,265	2,114	1,963
Total, Richland	79,765	82,771	69,234
Savannah River			
Protective Forces	94,443	87,816	89,471
Physical Security Systems	11,372	11,640	12,450
Information Security	2,596	2,511	2,096
Personnel Security	7,412	3,958	7,091
Security Investigations	0	3,500	350
Material Control and Accountability	5,790	5,919	5,885
Program Management	12,368	12,226	9,197
Transportation	839	654	335
Subtotal, Savannah River	134,820	128,224	126,875
Cyber Security	3,916	3,840	5,189
Total, Savannah River	138,736	132,064	132,064
West Valley Demonstration Project			
Protective Forces	900	1,049	1,137
Program Management	250	359	347
Subtotal, West Valley Demonstration Project	1,150	1,408	1,484
Cyber Security	1,650	451	442
Total, West Valley Demonstration Project	2,800	1,859	1,926
Total, Safeguards and Security	266,141	279,437	249,754

Funding Schedule by Activity

	(dollars in thousands)		
	FY 2009	FY 2010	FY 2011
Protective Forces	163,963	175,609	157,043
Physical Security Systems	26,596	26,526	22,792
Information Security	6,052	7,570	6,799
Personnel Security	10,549	6,472	9,370
Security Investigations	0	6,720	2,742
Material Control and Accountability	9,980	11,738	10,185
Program Management	38,107	35,418	30,478
Transportation	839	654	335
Subtotal, Safeguards and Security	256,086	270,707	239,744
Cyber Security	10,055	8,730	10,010
Safeguards and Security	266,141	279,437	249,754

Explanation of Funding Changes

FY 2011 vs. FY 2010 (\$000)

Defense Environmental Cleanup

Safeguards and Security

CB-0020 / Safeguards and Security

- Not a significant change. 111

OH-WV-0020 / Safeguards and Security-West Valley

- Not a significant change. 67

OR-0020 / Safeguards and Security

- The decrease at Oak Ridge reflects the use of projected carryover from FY 2010 to maintain the necessary level of security services. -15,100

PA-0020 / Safeguards and Security

- Not a significant change. 306

PO-0020 / Safeguards and Security

- The decrease at Portsmouth reflects the completion in FY 2010 of updating facilities to provide for a classified document storage area and classified conference room. -1,530

RL-0020 / Safeguards and Security

- The decrease at Richland is due to off-site plutonium de-inventory completion and associated closure of the Plutonium Finishing Plant protected area and the completion of upgrades for Safeguards and Security life-cycle cost reductions, permitting a reduction in site protective force requirements. -13,537

Total, Safeguards and Security

-29,683

Capital Operating Expenses

(dollars in thousands)

	FY 2009	FY 2010	FY 2011
General Plant Projects	12,303	11,288	6,779

Technology Development and Deployment

Funding Schedule by Activity

	(dollars in thousands)		
	FY 2009	FY 2010	FY 2011
Technology Development and Deployment			
Research and Development to Reduce Technical Risk	31,415	19,440	28,960
Small Business Innovative Research Program	0	560	3,360
Total, Technology Development and Deployment	31,415 ^a	20,000	32,320 ^b

Description

This program can be found within the Defense Environmental Cleanup appropriation. The scope of this program includes direct support of cleanup initiatives and opportunities for transformational technologies associated with environmental management. The program currently focuses on the highest risk and cost projects for the EM complex by addressing issues related to: Tank Waste, Spent Nuclear Fuel, Soil and Groundwater cleanup, and Deactivation and Decommissioning of contaminated excess facilities including nuclear reactors and chemical separation plants. The proposed program is fully aligned with the findings and the recommendations of the National Research Council's March 2, 2009, report entitled "Advice on the Department of Energy's Cleanup Technology Roadmap: Gaps and Bridges" which highlights the need for investment in the development of break-through technologies.

Benefits

The Technology Development and Deployment program provides key investments in mid- and long-range research and development projects focused on enabling, facilitating, and accelerating high priority cleanup issues. These research and development projects are aimed at improving the technical maturity for current baseline technologies, developing cost-effective transformational alternative technologies, and improving or providing next-generation technologies for insertion into program projects. The results of this research and development will address technology gaps and reduce technical uncertainty in the EM program.

^a FY 2009, \$905,000 (\$808,000 for Small Business Innovation Research and \$97,000 for Small Business Technical Transfer Programs) transferred to the Office of Science for award and administration of grants to small businesses.

^b Includes Small Business Innovative Research requirement associated with research and development activities at various sites across the EM complex.

Detailed Justification

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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Research and Development to Reduce Technical Risk **31,415** **19,440** **28,960**

Small Business Innovative Research Program **0** **560** **3,360**

Funding for the Small Business Innovative Research assessment is 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.

In FY 2009, \$905,000 (\$808,000 for Small Business Innovation Research and \$97,000 for Small Business Technical Transfer Programs) was transferred to the Office of Science for award and administration of grants to small businesses. The FY 2010 and FY 2011 amounts shown are estimated requirements for the continuation of the Small Business Innovation Research and Small Business Technical Transfer programs. The FY 2011 amount also includes the estimate associated with R&D activities at various sites across the EM complex.

Total, Technology Development and Deployment **31,415** **20,000** **32,320**
Planned Accomplishments (FY 2009)

Tank Waste

- Supported the development of technologies to improve the removal of waste from the waste tanks at Hanford and the Savannah River Site.
- Supported the development of technologies to treat the waste in the waste tanks at Hanford and the Savannah River Site.
- Developed a calcine stabilization technology, hot isostatic pressing, as a feasible option to stabilize calcine waste at Idaho.

Soil and Groundwater

- Supported enhanced sampling and characterization, including new tools for characterization of buried pipes and soils under buildings and slabs and test geophysical tools to develop site conceptual model for mercury remediation.
- Supported development of advanced transport and fate models to improve the ability to predict future plume movement and develop concepts for advanced predictive capabilities to provide input for development of next generation groundwater models.

Deactivation and Decommissioning

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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- Developed a "Deactivation and Decommissioning Toolbox" of technologies and approaches to reduce technical risks and uncertainty with future deactivation and decommissioning work scope at Oak Ridge and the Savannah River Site.

Planned Accomplishments (FY 2010)

Tank Waste

- Provide technologies at the Savannah River Site to understand structural vulnerability and chemical corrosion mechanisms in waste tanks to preserve tank integrity and enable enhanced capacity.
- Provide efficient retrieval technology at the Savannah River Site to remove the most difficult waste heels from waste tanks.
- Develop improved formulations and methods for using grout or other materials to stabilize residual tank waste and ancillary systems.
- Demonstrate fluidized bed steam reforming technology as an alternative supplemental treatment method for organic containing wastes.
- Develop low temperature treatment processes to immobilize volatile and semi-volatile radionuclides (e.g., cesium-137, technetium-99, and iodine-129).
- Improve glass formulation and demonstration of high aluminum containing glasses for the Defense Waste Processing Facility.

Spent Nuclear Fuel

- Initiate development of cost-effective, near real-time monitoring systems to determine fuel condition and cladding integrity.
- Determine aluminum Spent Nuclear Fuel corrosion mechanisms relative to variables in current storage environments.
- Technical justifications for and methodologies to extend the design life of DOE Spent Nuclear Fuel storage facilities.
- Evaluate systems to remove organic epoxy compounds from fuels to meet waste acceptance criteria.
- Develop the technical bases for drying the wide range of DOE fuels.
- Initiate development of a remotely operated welding system for the Standard Canister.

Soil and Groundwater

- Improve sampling and characterization at Oak Ridge to detect contamination under slabs and other buried infrastructure.
- Develop advanced site conceptual model techniques to enhance understanding of contaminant fate and transport to determine more effective remediation systems.
- Initiate development of predictive models that combine high performance computing with advanced physical and chemistry models to assist with design of effective and sustainable remediation strategies.
- Demonstrate enhanced attenuation technologies for metals and radionuclides stabilization and for

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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solvent contamination at the Savannah River Site.

Deactivation and Decommissioning

- Develop improved characterization technologies for highly radioactively contaminated facilities.
- Develop innovative technologies to support and enable the effective implementation of In-Situ Decommissioning (entombment) of highly contaminated facilities at Savannah River and Richland.
- Develop a first-of-a-kind sampling/characterization platform and instrumentation to enable remote characterization of highly contaminated off-gas stacks.
- Develop technology and approaches for in-situ decommissioning including characterization, containment/entombment, and continuous surveillance and monitoring.
- In collaboration with, and leveraging resources of the United Kingdom Nuclear Decommissioning Authority, complete proof of concept testing and deployment of a unique remote gamma characterization tool.

Planned Accomplishments (FY 2011)

Tank Waste

- Complete the initial tool set development for the modeling of cementitious materials performance in waste management applications; this will enable improved risk-informed decision-making, shorter analysis times, and improve transparency.
- Determine the effectiveness of using Gadolinium as a neutron poison for plutonium to support optimizing the plutonium loading in the Defense Waste Processing Facility glass thus reducing the number of Defense Waste Processing Facility canisters.
- Develop a common set of technical requirements to determine science-based technical approaches for particular tank retrieval tasks and to identify technology gaps and support technologies.
- Develop and demonstrate effective methods to optimize oxalic acid use during the chemical cleaning of tanks. While oxalic acid is an effective chemical cleaning agent, its use produces sodium oxalate, which increases the amount of waste to be processed and disposed.
- Develop the performance characteristics of Hot Isostatic Pressing as advanced processes for stabilization of challenging materials. Specifically, demonstrate the Hot Isostatic Pressing process and resulting waste form for the Hanford K Basin sludges. Assess the Hot Isostatic Pressing process as a viable disposition pathway for challenging materials.

Spent Nuclear Fuel

- Evaluate technologies for repackaging degraded fuels that are currently canned. This includes drying technologies and development of standardized inner packages.
- Develop procedures and standards for implementing technology developments relative to welding and neutron absorbers.

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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Soil and Groundwater

- Accelerate deployment of less aggressive and less costly attenuation based remedies for remediation through the development, in collaboration with regulatory groups, of a multiple scenarios decision-making tool.
- Quantify, through development of contaminant flux of analysis methods of organics and inorganics, extent of vadose zone contamination which will provide critical information enabling final selection of remediation approaches, including both active and passive methods.
- Develop a model for performance assessment of technically advanced and less costly foam based delivery systems to stabilize and treat contaminants in the deep vadose zone. Validate model through meso-scale testing of foam delivery systems for sequestration of dispersed metal and radionuclide contamination.
- Develop the architecture to host a fully integrated, high-performance subsurface computational modeling system that incorporates advanced high-performance computing technologies.
- Develop next generation technical models for computational modeling system that integrate subsurface flow and chemical transport and hydrological, geochemical, biological, and thermal processes.

Deactivation and Decommissioning

- Demonstrate a suite of technologies (e.g., the “smart tooling” system) for characterization and to facilitate deactivation and decommissioning of a contaminated off-gas stack at Oak Ridge.
- Initiate deactivation and decommissioning for In-Situ Decommissioning (entombment) at the Savannah River Site to demonstrate technology and approaches for characterization, containment, continuous surveillance and monitoring.

Explanation of Funding Changes

FY 2011 vs. FY 2010 (\$000)

Research and Development to Reduce Technical Risk

- Increase supports applied research and technology development to reduce technical uncertainty, to improve technical maturity, to improve work safety, and to reduce lifecycle costs and schedule. This increased investment will address gaps in the areas of tank waste, soil and groundwater remediation, and deactivation and decommissioning.

9,520

Small Business Innovative Research Program

- Reflects an increase in funding for applied research and technology development. The funding is a mandated tax of 2.8 percent based on the total amount of extramural research and development funds. Also includes the tax associated with R&D activities at various sites across the EM complex.

2,800

Total, Technology Development and Deployment

12,320

Federal Contribution to the Uranium Enrichment Decontamination and Decommissioning Fund

Funding Schedule by Activity

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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Defense Environmental Cleanup Federal Contribution to the Uranium Enrichment D&D Fund HQ-DD-0100 / Federal Contribution to the Uranium Enrichment D&D Fund	463,000	463,000	496,700
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Overview

The Defense Environmental Cleanup, Federal Contribution to the Uranium Enrichment Decontamination and Decommissioning Fund, funds the Federal Government contribution to the Uranium Enrichment Decontamination and Decommissioning Fund, as required by the Energy Policy Act of 1992 (The Act). Prior to October 24, 2007, the Act authorized annual fund contributions which came from both a special assessment on domestic utilities and annual Congressional appropriations.

The Administration is proposing an amendment to section 1802 of the Atomic Energy Act of 1954 (42 U.S.C. 2297g-1) to reinstate additional Federal deposits into the Fund for a period of 15 years. Total annual deposits from the Federal government shall not exceed \$463,000,000 (to be adjusted for inflation in following years). In FY 2011 the deposit will be \$496,700,000 to reflect a base contribution of \$463,000,000 and a \$33,700,000, which is the remaining obligation of the Federal government to the Fund under the Energy Policy Act of 1992. This proposal reiterates the ongoing need to decontaminate, decommission and remediate the uranium processing facilities, and the responsibility of the Federal government for these costs.

Benefits

This fund is responsible for maintaining, decontaminating, decommissioning, and remediating uranium processing facilities. This includes the environmental management responsibilities at the nation's three gaseous diffusion plants at Paducah, Kentucky, Portsmouth, Ohio, and Oak Ridge, Tennessee.

The account also provides funding for reimbursement of licensees operating uranium or thorium processing sites for the cost of environmental cleanup at those sites. The funding request for Uranium/Thorium is found in the Headquarters chapter of the budget.

As the cleanup and decommissioning at the gaseous diffusion plants progresses (as well as the cleanup at uranium/thorium processing sites), the risk and hazard to human health and the environment is greatly reduced. In addition, as cleanup is completed, the financial resources needed to maintain site infrastructure will be reduced.

Detailed Justification

(dollars in thousands)

FY 2009	FY 2010	FY 2011
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HQ-DD-0100 / Federal Contribution to the Uranium Enrichment D&D Fund

463,000 463,000 496,700

The Energy Policy Act of 1992 created the Uranium Enrichment Decontamination and Decommissioning Fund to pay for the cost of cleanup of the gaseous diffusion facilities located in Oak Ridge, Tennessee; Paducah, Kentucky; and Portsmouth, Ohio. The purpose of this activity is to provide the annual Federal contribution to the Uranium Enrichment Decontamination and Decommissioning Fund to cover the costs of cleanup at the three gaseous diffusion plants. The increase in funding for this activity reflects the funding of the remainder of the government’s obligation under the Energy Policy Act of 1992 in the amount of \$33,700,000.

- Provide the FY 2011 Federal Government contribution to the Uranium Enrichment Decontamination and Decommissioning Fund, as required by the Energy Policy Act of 1992.

Metrics	Complete Through FY 2009	Complete Through FY 2010	Complete Through FY 2011	Life-cycle Quantity	FY 2011 % Complete
No metrics associated with this PBS					

Total, D&D Fund Deposit **463,000 463,000 496,700**

Explanation of Funding Changes

FY 2011 vs. FY 2010 (\$000)

Defense Environmental Cleanup

Federal Contribution to the Uranium Enrichment D&D Fund

HQ-DD-0100 / Federal Contribution to the Uranium Enrichment D&D Fund

- Increase in funding for this activity reflects the funding of the remainder of the government’s obligation under the Energy Policy Act of 1992. 33,700

Total, D&D Fund Deposit 33,700

GENERAL PROVISIONS

[SEC. 301. None of the funds appropriated by this Act may be used to prepare or initiate Requests For Proposals (RFPs) for a program if the program has not been funded by Congress.]

[SEC. 302. None of the funds appropriated by this Act may be used—

(1) to augment the funds made available for obligation by this Act for severance payments and other benefits and community assistance grants under section 4604 of the Atomic Energy Defense Act (50 U.S.C. 2704) unless the Department of Energy submits a reprogramming request to the appropriate congressional committees; or

(2) to provide enhanced severance payments or other benefits for employees of the Department of Energy under such section; or

(3) develop or implement a workforce restructuring plan that covers employees of the Department of Energy.]

SEC. [303]301. The unexpended balances of prior appropriations provided for activities in this Act may be available to the same appropriation accounts for such activities established pursuant to this title. Available balances may be merged with funds in the applicable established accounts and thereafter may be accounted for as one fund for the same time period as originally enacted.

SEC. [304]302. None of the funds in this or any other Act for the Administrator of the Bonneville Power Administration may be used to enter into any agreement to perform energy efficiency services outside the legally defined Bonneville service territory, with the exception of services provided internationally, including services provided on a reimbursable basis, unless the Administrator certifies in advance that such services are not available from private sector businesses.

SEC. [305]303. When the Department of Energy makes a user facility available to universities or other potential users, or seeks input from universities or other potential users regarding significant characteristics or equipment in a user facility or a proposed user facility, the Department shall ensure broad public notice of such availability or such need for input to universities and other potential users. When the Department of Energy considers the participation of a university or other potential user as a formal partner in the establishment or operation of a user facility, the Department shall employ full and open competition in selecting such a partner. For purposes of this section, the term "user facility" includes, but is not limited to:

(1) a user facility as described in section 2203(a)(2) of the Energy Policy Act of 1992 (42 U.S.C. 13503(a)(2));

(2) a National Nuclear Security Administration Defense Programs Technology Deployment Center/User Facility; and

(3) any other Departmental facility designated by the Department as a user facility.

SEC. [306]304. Funds appropriated by this or any other Act, or made available by the transfer of funds in this Act, for intelligence activities are deemed to be specifically authorized by the Congress for purposes of section 504 of the National Security Act of 1947 (50 U.S.C. 414) during fiscal year [2010] 2011 until the enactment of the Intelligence Authorization Act for fiscal year [2010] 2011.

SEC. [307]305. Of the funds made available by the Department of Energy for activities at Government-owned, contractor-operated laboratories funded in this Act or subsequent Energy and

Water Development Appropriations Acts, the Secretary may authorize a specific amount, not to exceed 8 percent of such funds, to be used by such laboratories for laboratory directed research and development: *Provided*, That the Secretary may also authorize a specific amount not to exceed 4 percent of such funds, to be used by the plant manager of a covered nuclear weapons production plant or the manager of the Nevada Site Office for plant or site directed research and development.

SEC. [308]306. (a) In any fiscal year in which the Secretary of Energy determines that additional funds are needed to reimburse the costs of defined benefit pension plans for contractor employees, the Secretary may transfer not more than 1 percent from each appropriation made available in this and subsequent Energy and Water Development Appropriation Acts to any other appropriation available to the Secretary in the same Act for such reimbursements.

[(b) Where the Secretary recovers the costs of defined benefit pension plans for contractor employees through charges for the indirect costs of research and activities at facilities of the Department of Energy, if the indirect costs attributable to defined benefit pension plan costs in a fiscal year are more than charges in fiscal year 2008, the Secretary shall carry out a transfer of funds under this section.]

[(c)b] In carrying out a transfer under this section, the Secretary shall use each appropriation made available to the Department in that fiscal year as a source or the transfer, and shall reduce each appropriation by an equal percentage, except that appropriations for which the Secretary determines there exists a need for additional funds for pension plan costs in that fiscal year, as well as appropriations made available for the Power Marketing Administrations, the title XVII loan guarantee program, and the Federal Energy Regulatory Commission, shall not be subject to this requirement.

[(d)c] Each January, the Secretary shall report to the Committees on Appropriations of the House of Representatives and the Senate on the state of defined benefit pension plan liabilities in the Department for the preceding year.

[(e)d] This transfer authority does not apply to supplemental appropriations, and is in addition to any other transfer authority provided in this or any other Act. The authority provided under this section shall expire on September 30, 2015.

[(f)e] The Secretary shall notify the Committees on Appropriations of the House of Representatives and the Senate in writing not less than 30 days in advance of each transfer authorized by this section.

[SEC. 309. (a) Subject to subsection (b), no funds appropriated or otherwise made available by this Act or any other Act may be used to record transactions relating to the increase in borrowing authority or bonds outstanding at any time under the Federal Columbia River Transmission System Act (16 U.S.C. 838 et seq.) referred to in section 401 of division A of the American Recovery and Reinvestment Act of 2009 (Public Law 111-5; 123 Stat. 140) under a funding account, subaccount, or fund symbol other than the Bonneville Power Administration Fund Treasury account fund symbol.

(b) Funds appropriated or otherwise made available by this Act or any other Act may be used to ensure, for purposes of meeting any applicable reporting provisions of the American Recovery and Reinvestment Act of 2009 (Public Law 111-5; 123 Stat. 115), that the Bonneville Power Administration uses a fund symbol other than the Bonneville Power Administration Fund Treasury account fund symbol solely to report accrued expenditures of projects attributed by the Administrator of the Bonneville Power Administration to the increased borrowing authority.

(c) This section is effective for fiscal year 2010 and subsequent fiscal years.]

[SEC. 310. Section 1702 of the Energy Policy Act of 2005 (42 U.S.C. 16512) is amended by adding at the end the following new subsection:

"(k) WAGE RATE REQUIREMENTS.—All laborers and mechanics employed by contractors and subcontractors in the performance of construction work financed in whole or in part by a loan guaranteed under this title shall be paid wages at rates not less than those prevailing on projects of a character similar in the locality as determined by the Secretary of Labor in accordance with subchapter IV of chapter 31 of title 40, United States Code. With respect to the labor standards in this subsection, the Secretary of Labor shall have the authority and functions set forth in Reorganization Plan Numbered 14 of 1950 (64 Stat. 1267; 5 U.S.C. App.) and section 3145 of title 40, United States Code.".]

[SEC. 311. None of the funds made available by this Act may be used to make a grant allocation, discretionary grant award, discretionary contract award, Other Transaction Agreement, or to issue a letter of intent totaling in excess of \$1,000,000, or to announce publicly the intention to make such an award, including a contract covered by the Federal Acquisition Regulation, unless the Secretary of Energy notifies the Committees on Appropriations of the Senate and the House of Representatives at least 3 full business days in advance of making such an award or issuing such a letter: *Provided*, That if the Secretary of the Department of Energy determines that compliance with this section would pose a substantial risk to human life, health, or safety, an award may be made without notification and the Committees on Appropriations of the Senate and the House of Representatives shall be notified not later than 5 full business days after such an award is made or letter issued.]

[SEC. 312. (a) ULTRA EFFICIENT VEHICLES.—Section 136 of the Energy Independence and Security Act of 2007 (42 U.S.C. 17013) is amended—

(1) in subsection (a)—

(A) in paragraph (1), by inserting "an ultra efficient vehicle or" after "means"; and

(B) by adding at the end the following new paragraph:

"(5) ULTRA EFFICIENT VEHICLE.—The term 'ultra efficient vehicle' means a fully closed compartment vehicle designed to carry at least 2 adult passengers that achieves—

"(A) at least 75 miles per gallon while operating on gasoline or diesel fuel;

"(B) at least 75 miles per gallon equivalent while operating as a hybrid electric-gasoline or electric-diesel vehicle; or

"(C) at least 75 miles per gallon equivalent while operating as a fully electric vehicle.";

(2) in subsection (b)—

(A) by inserting ", ultra efficient vehicle manufacturers," after "automobile manufacturers";

(B) in paragraph (1)—

(i) by striking "or" at the end of subparagraph (A);

(ii) by striking "and" at the end of subparagraph (B) and inserting "or"; and

(iii) by adding at the end the following new subparagraph:

"(C) ultra efficient vehicles; and"; and

(C) in paragraph (2), by inserting ", ultra efficient vehicles," after "qualifying vehicles";

(3) in subsection (g), by inserting "or are utilized primarily for the manufacture of ultra efficient vehicles" after "20 years"; and

(4) in subsection (h)(1)(B), by striking "automobiles" the first place it appears and inserting "ultra efficient vehicles, automobiles,".

(b) RECONSIDERATION OF PRIOR APPLICATIONS.—The Secretary of Energy shall reconsider applications for assistance under section 136 of the Energy Independence and Security Act of 2007 (42 U.S.C. 17013) that were—

(1) timely filed under that section before January 1, 2009;

- (2) rejected on the basis that the vehicles to which the proposal related were not advanced technology vehicles; and
- (3) related to ultra efficient vehicles.]

[SEC. 313. (a) Except as provided in subsection (b), none of the funds appropriated or otherwise made available by this title for the Strategic Petroleum Reserve may be made available to any person that as of the enactment of this Act—

(1) is selling refined petroleum products valued at \$1,000,000 or more to the Islamic Republic of Iran;

(2) is engaged in an activity valued at \$1,000,000 or more that could contribute to enhancing the ability of the Islamic Republic of Iran to import refined petroleum products, including—

(A) providing ships or shipping services to deliver refined petroleum products to the Islamic Republic of Iran;

(B) underwriting or otherwise providing insurance or reinsurance for such an activity; or

(C) financing or brokering such an activity; or

(3) is selling, leasing, or otherwise providing to the Islamic Republic of Iran any goods, services, or technology valued at \$1,000,000 or more that could contribute to the maintenance or expansion of the capacity of the Islamic Republic of Iran to produce refined petroleum products.

(b) The prohibition on the use of funds under subsection (a) shall not apply with respect to any contract entered into by the United States Government before the date of the enactment of this Act.

(c) If the Secretary determines a person made ineligible by this section has ceased the activities enumerated in (a)(1)-(3), that person shall no longer be ineligible under this section.]

[SEC. 314. Section 132 of the Energy and Water Development Appropriations Act of 2006 (119 Stat 2261) is amended—

(1) in subsection (a)(3), by striking "Corps of Engineers" and inserting "Southwestern Power Administration";

(2) by adding at the end of subsection (a) the following new paragraph:

"(5) PAYMENT TO NON-FEDERAL LICENSEE.—Southwestern Power Administration shall compensate the licensee of Federal Energy Regulatory Commission Project No. 2221 pursuant to paragraph (3) using receipts collected from the sale of Federal power and energy related services. Pursuant to paragraph (6), Southwestern Power Administration will begin collecting receipts in the Special Receipts and Disbursement account upon the date of enactment of this paragraph. Payment to the licensee of Federal Energy Regulatory Commission Project No. 2221 shall be paid as soon as adequate receipts are collected in the Special Receipts and Disbursement Account to fully compensate the licensee, and in accordance with paragraph (2), such payment shall be considered non-reimbursable.";

(3) by adding at the end of subsection (a) the following new paragraph:

"(6) The Southwestern Power Administration shall compensate the licensee of Federal Energy Regulatory Commission Project No. 2221 in annual payments of not less than \$5,000,000, until the licensee of Federal Energy Regulatory Commission Project No. 2221 is fully compensated pursuant to paragraph (3). At the end of each fiscal year subsequent to implementation, any remaining balance to be paid to the licensee of Project No. 2221 shall accrue interest at the 30-year U.S. Treasury bond rate in effect at the time of implementation of the White River Minimum Flows project.";

(4) by adding at the end of subsection (a) the following new paragraph:

"(7) ESTABLISHMENT OF SPECIAL RECEIPT AND DISBURSEMENT ACCOUNTS.—There is established in the Treasury of the United States a special receipt account and corresponding

disbursement account to be made available to the Administrator of the Southwestern Power Administration to disburse pre-collected receipts from the sale of federal power and energy and related services. The accounts are authorized for the following uses:

"(A) Collect and disburse receipts for purchase power and wheeling expenses incurred by Southwestern Power Administration to purchase replacement power and energy as a result of implementation of the White River Minimum Flows project.

"(B) Collect and disburse receipts related to compensation of the licensee of Federal Energy Regulatory Commission Project No. 2221.

"(C) Said special receipt and disbursement account shall remain available for not more than 12 months after the date of full compensation of the licensee of Federal Energy Regulatory Commission Project No. 2221."; and

(5) by adding at the end of subsection (a) the following new paragraph:

"(8) TIME OF IMPLEMENTATION.—For purposes of paragraphs (3) and (4), 'time of implementation' shall mean the authorization of the special receipt account and corresponding disbursement account described in paragraph (7)".]

SEC. 307. (a) Section 1801 of the Atomic Energy Act of 1954 (42 U.S.C. 2297g) is amended in subsection (b)(2) by striking "amounts contained within the Fund" and inserting "assessments collected pursuant to section 1802 of the Atomic Energy Act of 1954 (42 U.S.C. 2297g-1) as amended".

(b) Section 1802 of the Atomic Energy Act of 1954 (42 U.S.C. 2297g-1) is amended:

(1) in subsection (a):

(A) by striking "\$518,233,333" and inserting "\$663,000,000"; and

(B) by striking "on October 24, 1992" and inserting "with fiscal year 2012".

(2) in subsection (c):

(A) by inserting "(1)" before "The Secretary";

(B) by inserting after "utilities": ", only to the extent provided in advance in appropriation Acts";

(C) by striking "\$150,000,000" and inserting "\$200,000,000";

(D) by inserting "beginning in fiscal year 2012" after "adjusted for inflation";

(E) by striking "(1)" and inserting "(A)";

(F) by striking "(2)" and inserting "(B)";

(G) by adding a new paragraph 2, ",(2) Amounts authorized to be collected pursuant to this section shall be deposited in the Fund and credited as offsetting receipts."

(3) in subsection (d), by striking "for the period encompassing 15 years after the date of the enactment of this title" and inserting "through fiscal year 2026"; and

(4) in subsection (e):

(A) in paragraph (1), by striking "15 years after the date of the enactment of this title" and inserting "September 30, 2026";

(B) in paragraph (2), by striking "\$2,250,000,000" and inserting "\$3,000,000,000"; and

(C) in paragraph (2) by inserting "beginning in fiscal year 2012" after "adjusted for inflation".

SEC. 308. The Secretary shall collect up to \$200,000,000 in assessments pursuant to section 1802 of the Atomic Energy Act of 1954 (42 U.S.C. 2297g-1), as amended by this Act.

SEC. 309. For an additional amount for the "Other Defense Activities" account, \$11,891,755, to increase the Department's acquisition workforce capacity and capabilities: Provided, That such funds may be transferred by the Secretary to any other account in the Department to carry out the purposes provided herein: Provided further, That such transfer authority is in addition to any other transfer

authority provided in this Act: Provided further, That such funds shall be available only to supplement and not to supplant existing acquisition workforce activities: Provided further, That such funds shall be available for training, recruitment, retention, and hiring additional members of the acquisition workforce as defined by the Office of Federal Procurement Policy Act, as amended (41 U.S.C. 401 et seq.): Provided further, That such funds shall be available for information technology in support of acquisition workforce effectiveness or for management solutions to improve acquisition management.

SEC. 310. Not to exceed 5 per centum, or \$100,000,000, of any appropriation, whichever is less, made available for Department of Energy activities funded in this Act or subsequent Energy and Water Development and Related Agencies Appropriation Acts may hereafter be transferred between such appropriations, but no appropriation, except as otherwise provided, shall be increased or decreased by more than 5 per centum by any such transfers, and any such proposed transfers shall be submitted to the Committee on Appropriations of the House and Senate. (Energy and Water Development and Related Agencies Appropriations Act, 2010.)

SEC. 501. None of the funds appropriated by this Act may be used in any way, directly or indirectly, to influence congressional action on any legislation or appropriation matters pending before Congress, other than to communicate to Members of Congress as described in 18 U.S.C. 1913.

SEC. 502. To the extent practicable funds made available in this Act should be used to purchase light bulbs that are "Energy Star" qualified or have the "Federal Energy Management Program" designation.

[SEC. 503. Title IV of division A of the American Recovery and Reinvestment Act of 2009 (Public Law 111-5) is amended by adding at the end of the title, the following new section 411:

"SEC 411. Up to 0.5 percent of each amount appropriated to the Department of the Army and the Bureau of Reclamation in this title may be used for the expenses of management and oversight of the programs, grants, and activities funded by such appropriation, and may be transferred by the Head of the Federal Agency involved to any other appropriate account within the department for that purpose: *Provided*, That the Secretary will provide a report to the Committees on Appropriations of the House of Representatives and the Senate 30 days prior to the transfer: *Provided further*, That funds set aside under this section shall remain available for obligation until September 30, 2012.".]

[SEC. 504. (a) DEFINITIONS.—In this section:

(1) *ADMINISTRATIVE EXPENSES*.—The term "administrative expenses" has the meaning as determined by the Director under subsection (b)(2).

(2) *AGENCY*.—The term "agency"—

(A) means an agency as defined under section 1101 of title 31, United States Code, that is established in the executive branch and receives funding under this Act; and

(B) shall not include the District of Columbia government.

(3) *DIRECTOR*.—The term "Director" means the Director of the Office of Management and Budget.

(b) *ADMINISTRATIVE EXPENSES*.—

(1) *IN GENERAL*.—All agencies shall include a separate category for administrative expenses when submitting their appropriation requests to the Office of Management and Budget for fiscal year 2011 and each fiscal year thereafter.

(2) *ADMINISTRATIVE EXPENSES DETERMINED.*—In consultation with the agencies, the Director shall establish and revise as necessary a definition of administration expenses for the purposes of this section. All questions regarding the definition of administrative expenses shall be resolved by the Director.

(c) *BUDGET SUBMISSION.*—Each budget of the United States Government submitted under section 1105 of title 31, United States Code, for fiscal year 2011 and each fiscal year thereafter shall include the amount requested for each agency for administrative expenses.]

[SEC. 505. None of the funds made available in this Act may be transferred to any department, agency, or instrumentality of the United States Government, except pursuant to a transfer made by, or transfer authority provided in this Act or any other appropriation Act.]

SEC. [506]503. [Specific projects contained in] *To the extent that* the report of the Committee on Appropriations of the House of Representatives accompanying this Act [(H. Rept. 111-203)] *includes specific projects* that are considered congressional earmarks for purposes of clause 9 of rule XXI of the Rules of the House of Representatives, *such projects*, when intended to be awarded to a for-profit entity, shall be awarded under a full and open competition. (*Energy and Water Development and Related Agencies Appropriations Act, 2010.*)

