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Department of Energy
FY 2012 Congressional Budget Request

Environmental Management

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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.

DEPARTMENT OF ENERGY
Appropriation Account Summary
(dollars in thousands - OMB Scoring)

	FY 2010 Current Approp.	FY 2011 Cong. Request	FY 2011 Annualized CR	FY 2012 Congressional Request	FY 2012 vs. FY 2010	
					$	%
Discretionary Summary By Appropriation						
Energy And Water Development, And Related Agencies						
Appropriation Summary:						
Energy Programs						
Energy efficiency and renewable energy	2,216,392	2,355,473	2,242,500	3,200,053	+983,661	+44.4%
Electricity delivery and energy reliability	168,484	185,930	171,982	237,717	+69,233	+41.1%
Nuclear energy	774,578	824,052	786,637	754,028	-20,546	-2.7%
Fossil energy programs						
Fossil energy research and development	659,770	586,583	672,383	452,975	-206,795	-31.3%
Naval petroleum and oil shale reserves	23,627	23,614	23,627	14,909	-8,718	-36.9%
Strategic petroleum reserve	243,823	138,861	243,823	121,704	-122,119	-50.1%
Northeast home heating oil reserve	11,300	11,300	11,300	10,119	-1,181	-10.5%
Northeast home heating oil reserve oil sale	0	0	0	-79,000	-79,000	N/A
Total, Fossil energy programs	938,520	760,358	951,133	520,707	-417,813	-44.5%
Uranium enrichment D&D fund	573,850	730,498	573,850	504,169	-69,681	-12.1%
Energy information administration	110,595	128,833	110,595	123,957	+13,362	+12.1%
Non-Defense environmental cleanup	254,673	225,163	244,673	219,121	-35,552	-14.0%
Science	4,963,887	5,121,437	4,903,710	5,416,114	+452,227	+9.1%
Energy transformation acceleration fund	0	299,966	0	550,011	+550,011	N/A
Nuclear waste disposal	98,400	----	98,400	0	-98,400	-100.0%
Departmental administration	168,944	169,132	168,944	128,740	-40,204	-23.8%
Inspector general	51,927	42,850	51,927	41,774	-10,153	-19.6%
Title 17 - Innovative technology loan guarantee program	0	500,000	-15,000	200,000	+200,000	N/A
Section 1705 temporary loan guarantee program	0	----	0	0	——	——
Advanced technology vehicles manufacturing loan	20,000	9,998	20,000	6,000	-14,000	-70.0%
Better building pilot loan guarantee initiative for Universities, Schools, and Hospitals	0	0	0	105,000	+105,000	N/A
Total, Energy Programs	10,340,250	11,353,690	10,309,351	12,007,391	+1,667,145	+16.1%
Atomic Energy Defense Activities						
National nuclear security administration:						
Weapons activities *	6,386,371	7,008,835	7,008,835	7,629,716	+620,881	+8.9%
Defense nuclear nonproliferation *	2,131,382	2,687,167	2,136,709	2,549,492	-137,675	-5.1%
Naval reactors *	945,133	1,070,486	945,133	1,153,662	+83,176	+7.8%
Office of the administrator *	410,754	448,267	410,754	450,060	+1,793	+0.4%
Total, National nuclear security administration	9,873,640	11,214,755	10,501,431	11,782,930	+568,175	+5.1%
Environmental and other defense activities:						
Defense environmental cleanup	5,640,371	5,588,039	5,642,331	5,406,781	-233,590	-4.1%
Other defense activities	847,468	878,209	847,468	859,952	+12,484	+1.5%
Defense nuclear waste disposal	98,400	0	98,400	0	-98,400	-100.0%
Total, Environmental & other defense activities	6,586,239	6,466,248	6,588,199	6,266,733	-319,506	-4.9%
Total, Atomic Energy Defense Activities	16,459,879	17,681,003	17,089,630	18,049,663	+248,669	+1.5%
Power marketing administrations:						
Southeastern power administration	0	0	0	0	——	——
Southwestern power administration	13,076	12,699	13,076	11,892	-1,184	-9.1%
Western area power administration	109,181	105,558	109,181	95,968	-13,213	-12.1%
Falcon & Amistad operating & maintenance fund	220	220	220	220	——	——
Colorado River Basins	-23,000	-23,000	-23,000	-23,000	——	——
Total, Power marketing administrations	99,477	95,477	99,477	85,080	-14,397	-14.5%
Federal energy regulatory commission	0	0	0	0	——	——
Subtotal, Energy And Water Development and Related Agencies	26,899,606	29,130,170	27,498,458	30,142,134	+1,901,417	+6.7%
Uranium enrichment D&D fund discretionary payments	-463,000	-696,700	-463,000	0	+463,000	+100.0%
Excess fees and recoveries, FERC	-10,933	-29,111	-28,886	-25,072	-14,139	-129.3%
Subtotal, Discretionary Funding	26,425,673	28,404,359	27,006,572	30,117,062	+2,350,278	+8.5%
Strategic petroleum reserve sale	0	0	0	-500,000	-500,000	N/A
Cancellation of prior year unobligated balances	0	0	0	-70,332	-70,332	N/A
Total, Discretionary Funding **	26,425,673	28,404,359	27,006,572	29,546,730	+3,121,057	+11.8%

NOTE: * FY12 is compared against the FY11 Request. This exception has been implemented for NNSA only.
** The Total, Discretionary Funding, FY12 vs FY10 "$" and "%" columns, reflects a comparison of FY12 Request vs. FY10 Current Approp for all programs including NNSA

Environmental Management

Proposed Appropriation Language

Defense Environmental Cleanup

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 one ambulances and one fire truck for replacement only, $5,406,781,000, to remain available until expended

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, $219,121,000, to remain available until expended.

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, $504,169,000, to be derived from the Uranium Enrichment Decontamination and Decommissioning Fund, to remain available until expended.

Environmental Management
Overview
Appropriation Summary

	FY 2010 Current Appropriation	FY 2011 CR	FY 2012 Request
Defense Environmental Cleanup	5,652,158	5,642,331	5,410,162
Non-Defense Environmental Cleanup	254,673	244,673	219,121
Uranium Enrichment Decontamination and Decommissioning Fund	573,850	573,850	504,169
Subtotal, Environmental Management	6,480,681	6,460,854	6,133,452
Use of Prior Year (Defense Environmental Cleanup)	-11,787	0	-3,381
D&D Fund Offset	-463,000	-463,000	0
Total, Environmental Management	6,005,894	5,997,854	6,130,071

Appropriation Summary by Program

	FY 2010 Current Appropriation	FY 2012 Request
Defense Environmental Cleanup		
Closure Sites		
Closure Sites Administration	8,225	5,375
Miamisburg	33,243	0
Total, Closure Sites	41,468	5,375
Hanford Site		
2012 Accelerated Completions	541,367	0
2035 Accelerated Completions	448,713	0
Central Plateau Remediation	0	0
Hanford Site	0	913,712
River Corridor and Other Cleanup Operations	0	0
Total, Hanford Site	990,080	913,712
Idaho National Laboratory	464,168	382,769
NNSA Sites		
Lawrence Livermore National Laboratory	2,924	873
Los Alamos National Laboratory	197,500	357,939
Nevada	74,405	63,380
NNSA Service Center/Separations Processing Research Unit (SPRU)	2,938	0
Sandia National Laboratories	2,864	0
SPRU	15,000	1,500
Total, NNSA Sites	295,631	423,692
Oak Ridge	179,048	176,100
Office of River Protection		
Tank Farm Activities	406,600	521,391
Waste Treatment and Immobilization Plant	690,000	840,000
Total, Office of River Protection	1,096,600	1,361,391
Savannah River Site		
2035 Accelerations	57,068	0

	FY 2010 Current Appropriation	FY 2012 Request
Cleanup and Waste Disposition	0	0
Nuclear Material Stabilization and Disposition	391,625	0
Savannah River Site	0	1,224,144
Site Risk Management Operations	0	0
Tank Farm Activities	761,256	0
Total, Savannah River Site	1,209,949	1,224,144
Waste Isolation Pilot Plant	230,337	228,926
Program Support	34,000	0
Community, Regulatory and Program Support		
Headquarters	0	20,143
Idaho National Laboratory	0	4,100
Nevada	0	2,620
NNSA Service Center/Separations Processing Research Unit (SPRU)	0	3,638
Oak Ridge	0	24,909
Paducah Gaseous Diffusion Plant	0	4,114
Portsmouth Gaseous Diffusion Plant	0	1,833
Richland	0	20,338
Savannah River	0	9,584
Total, Community, Regulatory and Program Support	0	91,279
Program Direction	345,000	321,628
Safeguards and Security	279,437	248,826
Technology Development and Deployment	19,440	32,320
Federal Contribution to the Uranium Enrichment D&D Fund	463,000	0
Congressionally Directed Projects	4,000	0
Total, Defense Environmental Cleanup	5,652,158	5,410,162
Non-Defense Environmental Cleanup		
Fast Flux Test Reactor Facility D&D	7,652	2,703
Gaseous Diffusion Plants		
Paducah Gaseous Diffusion Plant	40,491	52,440
Portsmouth Gaseous Diffusion Plant	60,394	48,148
Total, Gaseous Diffusion Plants	100,885	100,588
Small Sites		
Argonne National Laboratory	10,000	0
Brookhaven National Laboratory	15,000	8,185
California Site Support	262	0
Completed Sites/Program Support	620	0
Energy Technology Engineering Center	10,500	10,679
Idaho National Laboratory	5,000	5,131
Inhalation Toxicology Laboratory	580	0
Moab	39,000	31,000
SLAC National Accelerator Laboratory	7,100	2,435
Total, Small Sites	88,062	57,430
West Valley Demonstration Project	58,074	58,400
Total, Non-Defense Environmental Cleanup	254,673	219,121
Uranium Enrichment Decontamination and Decommissioning Fund		
Oak Ridge	0	182,747
Paducah	0	77,780
Portsmouth	0	243,642
D&D Activities		
Oak Ridge	225,000	0
Paducah Gaseous Diffusion Plant	116,446	0

	FY 2010 Current Appropriation	FY 2012 Request
Portsmouth Gaseous Diffusion Plant	232,404	0
Total, D&D Activities	573,850	0
Total, Uranium Enrichment Decontamination and Decommissioning Fund	573,850	504,169
Total, Environmental Management	6,480,681	6,133,452
Use of Prior Year (Defense Environmental Cleanup)	-11,787	-3,381
D&D Fund Offset	-463,000	0
Total, Environmental Management	6,005,894	6,130,071

Funding by Budget Chapters

	FY 2010 Current Appropriation	FY 2012 Request
Carlsbad	230,337	228,926
Idaho	469,168	392,000
Oak Ridge		
Oak Ridge	404,048	383,756
Paducah	156,937	134,334
Portsmouth	292,798	293,623
Richland	997,732	936,753
River Protection	1,096,600	1,361,391
Savannah River	1,209,949	1,233,728
Lawrence Livermore National Laboratory	2,924	873
Nevada	74,405	66,000
Los Alamos National Laboratory		
NNSA Service Center/Separations Processing Research Unit (SPRU)	2,938	3,638
Los Alamos National Laboratory	197,500	357,939
Subtotal, Los Alamos National Laboratory	200,438	361,577
Headquarters Operations	38,000	20,143
West Valley Demonstration Project	58,074	58,400
Brookhaven National Laboratory	15,000	8,185
Energy Technology Engineering Center	10,500	10,679
Moab	39,000	31,000
SLAC National Accelerator Laboratory	7,100	2,435
Other Sites		
Closure Sites Administration	8,225	5,375
Completed Sites/Program Support	620	0
Miamisburg	33,243	0
California Site Support	262	0
SPRU	15,000	1,500
Sandia National Laboratories	2,864	0
Argonne National Laboratory	10,000	0
Inhalation Toxicology Laboratory	580	0
Subtotal, Other Sites	70,794	6,875
Program Direction	345,000	321,628

	FY 2010 Current Appropriation	FY 2012 Request
Safeguards and Security	279,437	248,826
Technology Development & Deployment	19,440	32,320
D&D Fund Deposit	463,000	0
Subtotal, Environmental Management	6,480,681	6,133,452
Use of Prior Year (Defense Environmental Cleanup)	-11,787	-3,381
D&D Fund Offset	-463,000	0
Total, Environmental Management	6,005,894	6,130,071

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 (used) nuclear fuel and special nuclear material, along with huge quantities of contaminated soil and water. The Office of Environmental Management (EM) program was established in 1989 to achieve the successful cleanup of this Cold War legacy.

The mission of the EM is to clean up this environmental legacy brought about from five decades of nuclear weapons development and production, and Government-sponsored nuclear energy research. This cleanup effort is the largest in the world, originally involving two million acres at 110 sites in 35 states and some of the most dangerous materials known to man. At the end of FY 2010, EM is responsible for remaining cleanup at 18 sites in 11 states.

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 $308 billion. This includes $90 billion in actual costs from 1997 through 2010, and an additional estimate of $185 to $218 billion to complete EM's remaining mission.

Performance

The FY 2012 budget request reflects EM's increased focus on improvement in its acquisition, contract, project management through application of the best business practices and management principles related to project size and structure, design maturity, peer review, project management information, and cost estimation. Standardization of the acquisition process will ensure improved communication of contract requirements that are better aligned with project management processes. EM will strive to develop contract statements of work and deliverables based on clear project requirements, robust front-end planning and risk analysis, ensuring that nuclear safety requirements are addressed early, and changes to the contract and the project baseline are managed through strict timely change control processes. EM will continue to implement performance based contracts where appropriate.
The EM Base Program Portfolio was restructured using the same project framework used in establishing Recovery Act projects. Base program operations activities have been separated from capital work within a Project Baseline Summary (PBS). Capital Asset Projects will be managed in accordance with DOE Order 413.3B, "Program and Project Management for the Acquisition of Capital Assets." EM is currently developing the policies and guidelines for operations type work scope that is not governed by DOE Order 413.3B.

Overview

EM continues to pursue its cleanup objectives within the overall framework of achieving the greatest risk reduction benefit per radioactive content (wastes that contain the highest concentrations of radionuclides) 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, secure, and compliant posture in the EM complex
- Radioactive tank waste stabilization, treatment, and disposal
- Spent (used) nuclear fuel storage, receipt, and disposition
- Special nuclear material consolidation, stabilization, 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, additional strategies-are integrated into cleanup activities that are important to the achievement of EM cleanup progress as well as the 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 environmental, safety, and health requirements and controls into all work activities to ensure protection to the workers, public, and the environment.

In FY 2012, EM will continue to aggressively manage its life-cycle cost and identify opportunities to make strategic investments that reduce the overall cost of the cleanup program as well as the period of execution. Tank waste accounts for approximately one third of the total EM cleanup cost, and is the highest risk driver in the program, and therefore is a major contributor to EM's overall cleanup liability. In addition, reducing costs at the majority of EM sites requires reducing the number of nuclear and radiological facilities and remediating the contaminated soil and groundwater underneath those facilities. Therefore, two key strategic initiatives on which EM will focus are the development of Enhanced Tank Waste Treatment capabilities and Footprint Reduction.

- EM has formed an Enhanced Tank Waste Strategic Team charged with integrating and focusing efforts to identify and deploy cleanup approaches and technologies to accelerate the completion of the tank waste mission. EM will focus its technology development and deployment investments to mature the science and technology associated with tank waste processing, treatment, and waste loading. In addition, EM will continue to leverage base funding to optimize tank waste processing capacities to enhance the current tank waste cleanup approaches. Seven major transformational strategies to reduce life-cycle cost and length of program execution have been identified. Several of these strategies have been incorporated into Savannah River's tank waste program while many of these strategies are being considered for incorporation into the Hanford sites tank waste programs. This promises to accelerate the tank waste schedule by six years at Savannah River, reducing EM's environmental liability and life-cycle cost by $3 billion.

- Footprint Reduction— EM will continue to pursue Footprint Reduction opportunities and small site legacy completions to accelerate environmental cleanup across the cleanup complex. EM has used Recovery Act funding to accelerate disposition of legacy transuranic (TRU) and low-level waste, accomplish soil and groundwater remediation and to perform decontamination, decommissioning,

and demolition of areas and facilities years sooner than those activities were scheduled to occur. Recovery Act funding has allowed EM to strategically accelerate cleanup of facilities and contaminated areas in the outer reaches of many sites, accomplishing 40 percent footprint reduction by the end of 2011 and leading to approximately 90 percent reduction by 2015. Management and removal of legacy TRU waste from generator sites directly supports risk reduction and the goal of reducing the EM site footprint. Removing contamination, dispositioning of waste, and reducing the site footprint will save funding by reducing security, surveillance, maintenance, infrastructure, and overhead costs that otherwise would continue for years to come. EM estimates that such footprint reduction measures already undertaken with the Recovery Act investment have saved more than $4 billion and avoided another $3 billion in life-cycle costs.

EM will continue to develop strategic options to further reduce its life-cycle cost and period of execution.

FY 2012 Budget

The FY 2012 budget request of $6.1 billion will be utilized to fund activities to maintain a safe, secure and compliant posture in the EM complex. Additionally, the FY 2012 funding level positions EM to support completion of all FY 2012 enforceable milestones. 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 – EM is making necessary investments to complete construction and begin the operation of these facilities. 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, along with the soil and groundwater remediation, and D&D activities necessary to meet enforceable compliance commitments.

Specifically the FY 2012 budget request funds:

Operations of the Sodium Bearing Waste treatment facility at Idaho - Testing and readiness verification will be completed by the end of FY 2011 in preparation for hot startup in January 2012. 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 close four tanks, complete treatment of all active waste at Idaho, and meet the Notice of Noncompliance – Consent Order Modification to cease use of the Tank Farm Facility by December 31, 2012.

Additionally, Idaho's request will support requirements of the Idaho Settlement Agreement to dispose of remote-handled low-level waste at the Radioactive Waste Management Complex and mixed low-level waste at appropriate off-site disposal facilities; and characterize and certify remote-handled TRU waste at the Idaho Nuclear Technology and Engineering Center in preparation for shipment to the Waste Isolation Pilot Plant (WIPP). The request will provide for shipping stored contact-handled TRU waste to WIPP using the Advanced Mixed Waste Treatment Facility, and for receipt, characterization, and certification of TRU waste from other DOE sites in preparation for shipment to WIPP.

While not included in Idaho's request, research and development funding will be utilized in FY 2012 to support maturation of the Hot Isostatic Press technology.

At the Office of River Protection Site, the FY 2012 request will support construction of the Waste Treatment and Immobilization Plant (WTP) consistent with the schedule to complete project design in FY 2013, facility construction in FY 2016, and facility commissioning in FY 2019. As of December 31, 2010, the Waste Treatment Plant construction is approximately 53 percent complete. Additionally, the request provides increased funding critical for tank farm infrastructure upgrades and waste feed delivery projects to support WTP hot operations.

At the Savannah River Site, the largest portion of the request supports the Tank Waste Liquid Waste Management Program, which includes the operation of the Defense Waste Processing Facility, as well as, operation of the Actinide Removal Process and Modular Caustic Side Extraction units. These units will be needed through construction of the Salt Waste Processing Facility. In addition, the request supports the Tank 48 return to service project and closure of two tanks. Closure of these tanks is the first delivery on the recently approved tank acceleration strategy commensurate with the recent change to a performance-based liquid waste contractor and the deployment of tank pre-treatment technologies such as, rotary microfiltration and small column ion exchange which will result in a $3.2 billion life cycle cost savings.

H Canyon will be maintained in a safe standby state, pending the decision on spent (used) nuclear fuel processing. The site will also continue to receive weapons grade surplus non-pit plutonium from the Los Alamos National Laboratory and Lawrence Livermore National Laboratory, which concludes in FY 2012, and supports the Global Threat Reduction Initiative through continued receipt of foreign and domestic research reactor spent (used) fuel.

In FY 2012, the budget request will support the D&D project at the Portsmouth Gaseous Diffusion Plant in Piketon, Ohio, by maintaining the site's base funding for a total of $310 million. Approximately $48 million of that total will be used to continue the safe operation of the DUF6 Project conversion facilities and disposition of the resultant uranium oxide and hydrofluoric acid. About 13,500 metric tons of depleted uranium will be packaged for disposition. Most of the funding request will be used for increased levels of D&D of gaseous diffusion plant ancillary facilities and systems, disposal of D&D waste off-site, and small equipment removal, utility optimizations, and hazardous material abatement actions within the gaseous diffusion plant operations buildings.

To address many of the high-risk activities there is a total of $133.3 Million in the EM budget in the following areas: $60 Million is requested to continue the acceleration of development and deployment of needed technologies to address tank waste issues related to tank treatment, waste chemistry for characterization and separation; advanced retrieval technologies; improved melter throughput; and increased glass waste loading. The majority of this work would be funded by the $60 million requested within the Office of River Protection to support Hanford and Savannah River tank waste issues. Additional funds of $32.3 million are contained in the Technology Development and Deployment Program and will be utilized to support ground water and soil remediation 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. However, this encompasses only a portion of the overall research and development initiatives being conducted across the complex in conjunction with the national laboratories. In FY 2012, the remaining funds for many of these research investments are embedded within the individual projects and programs at EM sites and are critical investments in science & technology that range from technology adaptations to demonstrations and maturation of technology.

At LANL, EM will aggressively pursue cleanup in accordance with the Consent Order while working with regulators to facilitate cleanup as quickly as possible. The funding increase supports Solid Waste and Soil and Groundwater activities which are critical to achieving the fence-to-fence cleanup required under the Consent Order. Specifically, 1,300 cubic meters of mixed low level waste and 1,000 cubic meters of transuranic waste will be disposed in FY 2012. In addition, the budget supports completion of Material Disposal Area A exhumation of the wastes in the central pit and eastern trenches, removal and disposal of the tanks, backfill the excavation areas, covering and sampling of the area for release.

At Richland, significant progress will continue to be made along the River Corridor. EM will complete the interim remedial actions for the 100 D and 100 H Areas, complete disposition of eleven facilities, complete removal of knock-out pot material from the K-West Basin, and initiate remediation of the deep chromium contamination waste site 100-C-7. In addition, the request supports high priority groundwater remediation efforts. Specifically, EM will complete operational testing of the groundwater system for treating technetium at S/SX tank farm, expand current pump-and-treat system at 100-HR-3 operable unit, complete 100 and 300 Areas remedial investigations to obtain final records of decision, and begin Phase 1 operations of 200W pump and treat system. These efforts are aimed at reducing the Richland site cleanup footprint.

At Oak Ridge, the request will support continued base operations at the East Tennessee Technology Park to provide infrastructure support for D&D of excess facilities and remediation of contaminated sites at the former gaseous diffusion plant to meet Federal Facility Agreement milestones and safety requirements. In FY 2012, the operation of the Transuranic Waste Processing Center (TWPC) will transfer from the Recovery Act program back into the base program and will allow EM to continue processing contact-handled and remote-handled TRU in order to meet the Site Treatment Plan milestone and to prepare TRU waste for certification, shipment, and disposal at WIPP. Safety activities for the Department's inventory of U-233 in Building 3019 will be funded through the use of uncosted carryover, pending final alternatives evaluation to proceed with a revised path forward in FY 2013.

By the end of FY 2011, legacy cleanup will be complete at the Brookhaven National Laboratory and the Stanford Linear Accelerator Center. These completions were accelerated through a combination of Recovery Act and annual appropriations. EM will maintain surveillance and maintenance activities on these facilities through FY 2012, and will initiate transfer to the Office of Science for long-term surveillance and maintenance in FY 2013.

American Reinvestment and Recovery Act

By the end of FY 2011, EM will have expended $5.68 billion, or 95%, of its $6 billion in Recovery Act funding provided by Congress to complete lower-risk footprint reduction and near-term completion cleanup activities while creating more than 11,000 jobs. The $320 million remaining in FY 2012 will support the disposition of the remaining Savannah River Site legacy TRU waste, the disposition and closure of reactor facilities at the Savannah River P&R Areas, and facility demolition at Oak Ridge National Laboratory, Y-12, and the East Tennessee Technology Park.

Highlights of the Request

Based on EMs priorities, EM's FY 2012 request of $6.1 billion will fund the following activities:

- Safe, secure and compliant operations;
- Hanford Waste Treatment and Immobilization Plant ($840M);
- Tank farm operations at the Hanford, Idaho, and Savannah River sites ($1,187.4M) including four tank closures at Idaho and two tank closures at Savannah River;
- Supports Idaho Sodium Bearing Waste Treatment Facility activities to achieve December 2012 completion ($62.5M);
- Savannah River Salt Waste Processing Facility construction and pre-operations ($203M);
- Special nuclear material consolidation/disposition and storage ($534M);
- DUF6 Operations at Portsmouth and Paducah ($99M);
- Solid Waste (TRU and Mixed/Low level waste) storage, treatment, and disposal ($867M) includes operations of WIPP to support 21 contact-handled and 5 remote-handled shipments and operations of the Nevada Test Site to dispose of low-level and mixed low-level wastes;
- Spent (used) Nuclear Fuel Storage and receipt at Idaho, Hanford, and Savannah River ($178M);
- Soil and ground water remediation at Idaho, Hanford, Nevada, Los Alamos and Small sites ($615M);
- Decontamination and decommissioning work to maintain site progress ($1,020M);
- Investment in tank waste technologies within the Office of River Protection ($60M); and
- Technology Development and Deployment activities ($32M).

FY 2010 Accomplishments

EM continues to make significant cleanup progress demonstrated by:

- Processing for disposition 1.5 million gallons of radioactive liquid waste at the Savannah River Site.
- Producing 623 cans of vitrified high-level waste from highly radioactive liquid wastes at Savannah River Site.
- Characterizing, certifying, and shipping over 14,000 cubic meters cumulatively of contact-handled and remote-handled transuranic waste from the TRU generator sites and emplacing the waste at the Waste Isolation Pilot Plant for permanent disposal.
- Disposing of over 18,000 cubic meters of legacy low-level waste and mixed low-level waste.
- Dispositioning all assigned legacy special nuclear material and transferring all EM assigned spent (used) nuclear fuel to dry storage at the Idaho Site.
- Completed Oak Ridge K-25 West Wing demolition in FY 2010;
- Completing shipment of legacy contact-handled transuranic waste in FY 2010 and FY 2011 from the majority of small sites by consolidating the waste at Idaho National Laboratory for treatment/characterization, with final disposal at the Waste Isolation Pilot Plant.
- Continuing support for the Tank 48 Return to Service Project at the Savannah River Site.

- Complete excavation of three 100 H burial grounds at the Richland site.

Annual Performance Results and Targets

The Department is in the process of updating its strategic plan, and has been actively engaging stakeholders including Congress. The draft strategic plan is being released for public comment concurrent with this budget submission, with the expectation of official publication this spring. The draft plan and FY 2012 budget are consistent and aligned. Updated measures will be released at a later date and available at the following link http://www.mbe.doe.gov/budget/12budget/index.htm.

Life-cycle Costs

As part of its application of DOE Order 413.3B 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 2010 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 2010.

Over the past year, there have been changes to EM's life-cycle cost estimate. These changes include:

- Cost savings of about $4 billion due to acceleration of work due to ARRA funding. This includes cost savings of approximately $2 billion at the Hanford Site, $1 billion at the Savannah River Site, $400 million at the Idaho Site and $100 million at the Waste Isolation Pilot Plant.
- Cost savings of $3 to $9 billion at the Savannah River Site that reflects implementation of a revised salt waste processing strategy using more efficient and robust technologies.
- Additional cost savings of $4 to $8 billion at the Idaho site due to more refined cost estimates, improved contractor performance and more efficient approaches to meeting regulatory commitments.
- Reducing uncertainties in the Hanford tank farm baseline resulting in a nominal increase of $10 billion in the 50% confidence estimate. (The 80% estimate remained unaffected).

Overall, the EM life-cycle cost estimate decreased by approximately $20 billion at the 80% confidence level as a result of the reduction of uncertainty for activities like those mentioned above.

ENVIRONMENTAL MANAGEMENT PROGRAM LIFE-CYCLE COST RANGE (Millions of Dollars)			
Site	LCC Total Range		
Argonne National Laboratory-East	151	-	152
Ashtabula	137	-	
Brookhaven National Laboratory	467	-	
Columbus	172	-	
Energy Technology Engineering Center	342	-	389
Fernald	3,463	-	
Hanford Site	56,469	-	59,298
Headquarters	2,291	-	
Idaho National Laboratory	21,960	-	23,716
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	2,729	-	3,438
Miamisburg	1,458	-	
Moab	923	-	959
Nevada Test Site	2,426	-	2,696
Oak Ridge Reservation	10,400	-	10,760
Office of River Protection	66,808	-	74,481
Other	1,398	-	1,400
Paducah Gaseous Diffusion Plant	11,334	-	18,129
Pantex Plant	196	-	
Portsmouth Gaseous Diffusion Plant	9,573	-	16,391
Program Direction	12,080	-	
Rocky Flats Environmental Technology Site	9,047	-	
Sandia National Laboratory	240	-	
Savannah River Site	49,082	-	54,484
Stanford Linear Accelerator Center	61	-	
Technology Development and Deployment	3,073	-	
Waste Isolation Pilot Plant	6,712	-	7,257
West Valley Demonstration Project	1,680	-	1,806
		-	
TOTAL EM PROGRAM	275,120	-	308,489

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.

ENVIRONMENTAL MANAGEMENT PROJECT SCHEDULE RANGE	
Site	Completion Date
General Electric Vallecitos Nuclear Center	2010[a]
Inhalation Toxicology Laboratory	2011[b]
Stanford Linear Accelerator Center	2012[c]
Separations Process Research Unit	2013 - 2014 [d]
Sandia National Laboratories - NM	2014
Lawrence Livermore National Laboratory - Site 300	2014
Los Alamos National Laboratory	2015[e]
West Valley Demonstration Project	2018
Energy Technology Engineering Center	2018 - 2025
Brookhaven National Laboratory	2018 - 2020[c]
Oak Ridge Reservation	2021 - 2022
Nevada Test Site Projects	2027 - 2038
Moab	2028[f]
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

[a] Physical work at the GE Vallecitos was completed by FY 2010 with ARRA funding.
[b] Physical work at the Inhalation Toxicology Laboratory was completed by FY 2010.
[c] With ARRA funding, the completion date for these sites are expected to be accelerated to FY 2011, and the sites will be transferred to the Office of Science for long-term surveillance and maintenance in FY 2013.
[d] With ARRA funding, the completion date for the Separations Process Research Unit is expected to be accelerated to FY 2012.
[e] EM will continue to aggressively pursue cleanup at LANL in accordance with the Consent Order while working with regulators to facilitate cleanup as quickly as possible.
[f] With ARRA funding, the completion date is for Moab is projected to be accelerated by three years to 2025.

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 Current Approp	FY 2012 Request
Carlsbad	$10,597	$11,363
Oak Ridge	21,259	12,864
Idaho National Laboratory	20,460	21,328
Moab	820	191
Paducah	3,627	4,390
Portsmouth	5,356	3,664
Richland Operations Office	42,796	40,292
Office of River Protection	47,835	33,583
Savannah River	137,430	132,683
	$290,180	$260,358

Indirect-Funded Maintenance and Repair[a]

	(dollars in thousands)	
	FY 2010 Current Approp	FY 2012 Request
Carlsbad	$0	$0
Oak Ridge	0	0
Idaho National Laboratory	0	0
Moab	0	0
Paducah	0	0
Portsmouth	0	0
Richland Operations Office	0	0
Office of River Protection	0	0
Savannah River	16,256	14,998
	$16,256	$14,998

[a] Data is as of fourth quarter FY 2010.

ANCILLARY TABLES

Detailed Funding Table

	FY 2010 Current Appropriation	FY 2012 Request
Defense Environmental Cleanup		
Closure Sites		
Operating	41,468	5,375
Hanford Site		
Hanford Site		
Operating	0	913,712
2012 Accelerated Completions		
Operating	541,367	0
2035 Accelerated Completions		
Operating	448,713	0
Central Plateau Remediation		
Operating	0	0
River Corridor and Other Cleanup Operations		
Operating	0	0
Total, Hanford Site	990,080	913,712
Idaho National Laboratory		
Operating	365,568	382,769
Construction:		
06-D-401 / Sodium Bearing Waste Treatment Project, Idaho National Laboratory (INL), Idaho	98,600	0
Total, Idaho National Laboratory	464,168	382,769
NNSA Sites		
Operating	295,631	423,692
Oak Ridge		
Operating	179,048	176,100
Office of River Protection		
Waste Treatment and Immobilization Plant		
Construction:		
01-D-16-A-D / Waste Treatment and Immobilization Plant - Sub-Projects A-D, RL	365,000	363,000
01-D-16E / Pretreatment Facility, RL	325,000	477,000
Total, Construction	690,000	840,000
Tank Farm Activities		
Operating	406,600	521,391
Total, Office of River Protection	1,096,600	1,361,391
Savannah River Site		
Site Risk Management Operations		
Operating	0	0
Construction:		
05-D-405 / Salt Waste Processing Facility, SR	234,118	170,071
Total, Site Risk Management Operations	234,118	170,071
Nuclear Material Stabilization and Disposition		
Operating	385,310	0
2035 Accelerations		
Operating	57,068	0
Construction:		
08-D-414 / 08-D-414: Plutonium Preparation Project, Savannah River Site (SRS), Aiken, South Carolina (SR-	6,315	0

	FY 2010 Current Appropriation	FY 2012 Request
0011C)		
Total, 2035 Accelerations	63,383	0
Cleanup and Waste Disposition		
Operating	0	0
Savannah River Site		
Operating	0	1,054,073
Tank Farm Activities		
Operating	527,138	0
Total, Savannah River Site	1,209,949	1,224,144
Waste Isolation Pilot Plant		
Operating	230,337	228,926
Program Support		
Operating	34,000	0
Community, Regulatory and Program Support		
Operating	0	91,279
Program Direction		
Operating	345,000	321,628
Safeguards and Security		
Operating	279,437	248,826
Technology Development and Deployment		
Operating	19,440	32,320
Federal Contribution to the Uranium Enrichment D&D Fund		
Operating	463,000	0
Congressionally Directed Projects		
Operating	4,000	0
Total, Defense Environmental Cleanup	5,652,158	5,410,162
Non-Defense Environmental Cleanup		
Fast Flux Test Reactor Facility D&D		
Fast Flux Test Reactor Facility D&D		
Operating	7,652	2,703
Gaseous Diffusion Plants		
Operating	100,885	100,588
Small Sites		
Operating	88,062	57,430
West Valley Demonstration Project		
Operating	58,074	58,400
Total, Non-Defense Environmental Cleanup	254,673	219,121
Uranium Enrichment Decontamination and Decommissioning Fund		
Oak Ridge		
Operating	0	182,747
Paducah		
Operating	0	77,780
Portsmouth		
Operating	0	243,642
D&D Activities		
Operating	573,850	0
Total, Uranium Enrichment Decontamination and Decommissioning Fund	573,850	504,169
Total, Environmental Management	6,480,681	6,133,452

	FY 2010 Current Appropriation	FY 2012 Request
Use of Prior Year (Defense Environmental Cleanup)	-11,787	-3,381
D&D Fund Offset	-463,000	0
Total, Environmental Management	6,005,894	6,130,071

Funding Summary by Office

Site	FY 2010 Current Appropriation	FY 2012 Request
Carlsbad	230,337	228,926
Idaho	469,168	392,000
Oak Ridge	404,048	383,756
Paducah	156,937	134,334
Portsmouth	292,798	293,623
Richland	997,732	936,753
River Protection	1,096,600	1,361,391
Savannah River	1,209,949	1,233,728
Lawrence Livermore National Laboratory	2,924	873
Nevada	74,405	66,000
Los Alamos National Laboratory	200,438	361,577
Headquarters Operations	38,000	20,143
West Valley Demonstration Project	58,074	58,400
Brookhaven National Laboratory	15,000	8,185
Energy Technology Engineering Center	10,500	10,679
Moab	39,000	31,000
SLAC National Accelerator Laboratory	7,100	2,435
Other Sites	70,794	6,875
Program Direction	345,000	321,628
Safeguards and Security	279,437	248,826
Technology Development & Deployment	19,440	32,320
D&D Fund Deposit	463,000	
Subtotal, Environmental Management	6,480,681	6,133,452
Offsets	-474,787	-3,381
Total, Environmental Management	6,005,894	6,130,071

Funding Summary by Appropriation/Office
(Safeguards and Security Funding Allocated Across All Sites)

Approp/Site	FY 2010 Current Appropriation	FY 2012 Cong. Req.
Defense Environmental Cleanup		
Hanford	1,072,851	1,003,284
Idaho	464,168	386,869
LANL	200,438	361,577
LLNL	2,924	873
Miamisburg	33,243	0
Nevada	74,405	66,000
Oak Ridge	211,448	218,309
Office of River Protection	1,096,600	1,361,391
Paducah	8,190	13,549
Portsmouth	17,509	18,245
Savannah River	1,342,013	1,363,728
SPRU	15,000	1,500
WIPP	234,981	233,771
West Valley	1,859	1,600
Other	15,089	5,375
Program Direction	345,000	321,628
Program Support	34,000	20,143
Technology Development & Deployment	19,440	32,320
D&D Fund Deposit	463,000	0
	5,652,158	5,410,162
Non-Defense Environmental Cleanup		
Argonne	10,000	0
Brookhaven	15,000	8,185
ETEC	10,500	10,679
Hanford	7,652	2,703
Idaho	5,000	5,131
ITL	580	0
Moab	39,000	31,000
Paducah	40,491	52,440
Portsmouth	60,394	48,148
SLAC	7,100	2,435
West Valley	58,074	58,400
Other	882	0

	254,673	219,121
Uranium Enrichment Decontamination and Decommissioning Fund		
Oak Ridge	225,000	182,747
Paducah	116,446	77,780
Portsmouth	232,404	243,642
	573,850	504,169
Subtotal, EM	6,480,681	6,133,452
UE D&D Fund Offset:	-463,000	0
Defense Prior Year Offset:	-11,787	-3,381
Total, EM	6,005,894	6,130,071

Funding by Office/Site/Location

	FY 2010 Current Appropriation	FY 2012 Request
Carlsbad		
Carlsbad Field Office	26,784	28,771
Waste Isolation Pilot Plant	203,553	200,155
Total, Carlsbad	230,337	228,926
Idaho		
Idaho National Laboratory	469,168	392,000
Oak Ridge		
East Tennessee Technology Park	226,900	201,347
Oak Ridge National Laboratory	90,199	44,000
Oak Ridge Reservation	50,249	108,409
Y-12 Plant	36,700	30,000
Total, Oak Ridge	404,048	383,756
Paducah		
Paducah Gaseous Diffusion Plant	156,937	134,334
Portsmouth		
Portsmouth Gaseous Diffusion Plant	292,798	293,623
Richland		
Hanford Site	975,792	916,415
Richland Operations Office	21,940	20,338
Total, Richland	997,732	936,753
River Protection		
River Protection	1,096,600	1,361,391
Savannah River		
Savannah River National Laboratory	61,480	0
Savannah River Operations Office	18,300	9,584
Savannah River Site	1,130,169	1,224,144
Total, Savannah River	1,209,949	1,233,728
Lawrence Livermore National Laboratory		
California Site Support	238	238
Lawrence Livermore National Laboratory	2,686	635
Total, Lawrence Livermore National Laboratory	2,924	873
Nevada		
Nevada Test Site	74,405	66,000
Los Alamos National Laboratory		
Los Alamos National Laboratory	197,500	357,939
NNSA Service Center	2,938	3,638

	FY 2010 Current Appropriation	FY 2012 Request
Total, Los Alamos National Laboratory	200,438	361,577
Headquarters Operations		
Congressionally Directed Projects	4,000	0
Headquarters	34,000	20,143
Total, Headquarters Operations	38,000	20,143
West Valley Demonstration Project		
West Valley Demonstration Project	58,074	58,400
Brookhaven National Laboratory		
Brookhaven National Laboratory	15,000	8,185
Energy Technology Engineering Center		
Energy Technology Engineering Center	10,500	10,679
Moab		
Moab	39,000	31,000
SLAC National Accelerator Laboratory		
SLAC National Accelerator Laboratory	7,100	2,435
Other Sites		
Argonne National Laboratory-East	10,000	0
California Site Support	262	0
Consolidated Business Center	8,845	5,375
Inhalation Toxicology Laboratory	580	0
Miamisburg	33,243	0
Sandia National Laboratory	2,864	0
Separations Process Research Unit	15,000	1,500
Total, Other Sites	70,794	6,875
Program Direction		
Program Direction	345,000	321,628
Safeguards and Security		
Carlsbad Field Office	4,644	4,845
East Tennessee Technology Park	32,400	17,300
Hanford Site	82,771	69,234
Paducah Gaseous Diffusion Plant	8,190	9,435
Portsmouth Gaseous Diffusion Plant	17,509	16,412
Savannah River Site	132,064	130,000
West Valley Demonstration Project	1,859	1,600
Total, Safeguards and Security	279,437	248,826
Technology Development & Deployment		
Technology Development and Deployment	19,440	32,320
D&D Fund Deposit		
D&D Fund Deposit	463,000	0
Total, Environmental Management	6,480,681	6,133,452
Use of Prior Year (Defense Environmental Cleanup)	-11,787	-3,381

	FY 2010 Current Appropriation	FY 2012 Request
D&D Fund Offset	-463,000	0
Total, Environmental Management	6,005,894	6,130,071

Environmental Management Federal Staffing

	FY 2010 Current Appropriation	FY 2012 Request
Carlsbad	54	56
Idaho	71	67
Oak Ridge	82	80
Portsmouth/Paducah Project Office	49	54
Richland	252	261
River Protection	162	153
Savannah River	345	328
Small Sites	32	38
Nevada	23	23
NNSA Sites	25	24
EM Career Development Corp	35	0
Subtotal, Field, Full-Time Equivalents	1,130	1,084
Headquarters Operations	330	325
Consolidated Business Center	189	173
Total, Field, Full-Time Equivalents	1,649	1,582

Lifecycle Costs by Program Baseline Summary (PBS) Thousands of Dollars							
Site	**PBS Code**	**PBS Name**	**Prior Costs (97 - 2010)**	**FY11 and Remaining Cost (Low Range)**	**FY11 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	CH-ANLE-0040.NEW	Argonne Recovery Act Project	41,530	31,452	32,454	72,982	73,984
Argonne National Laboratory-East Total			119,510	31,452	32,454	150,962	151,964
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	237,533	29,316	29,316	266,849	266,849
Brookhaven National Laboratory	BRNL-0040	Nuclear Facility D&D-Brookhaven Graphite Research Reactor	111,308	16,772	16,772	128,080	128,080
Brookhaven National Laboratory	BRNL-0041	Nuclear Facility D&D-High Flux Beam Reactor	55,309	10,244	10,244	65,553	65,553
Brookhaven National Laboratory	BRNL-0041.NEW	A/B Waste Lines Removal and FHWMF Perimeter Area Soils Remediation	3,462	0	0	3,462	3,462
Brookhaven National Laboratory	BRNL-0100	Brookhaven Community and Regulatory Support	2,595	0	0	2,595	2,595
Brookhaven National Laboratory Total			410,207	56,332	56,332	466,539	466,539
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	220,504	121,032	168,492	341,536	388,996
Energy Technology Engineering Center Total			220,504	121,032	168,492	341,536	388,996
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	1,320,548	0	0	1,320,548	1,320,548
Fernald	OH-FN-0050	Non-Nuclear Facility D&D-Fernald	226,037	0	0	226,037	226,037
Fernald	OH-FN-0100	Fernald Post-Closure Administration	13,801	246,735	246,735	260,536	260,536
Fernald	OH-FN-0101	Fernald Community and Regulatory Support	13,716	0	0	13,716	13,716
Fernald Total			3,216,322	246,735	246,735	3,463,057	3,463,057
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	1,899,878	1,299,599	1,351,029	3,199,477	3,250,907

Lifecycle Costs by Program Baseline Summary (PBS) Thousands of Dollars							
Site	**PBS Code**	**PBS Name**	**Prior Costs (97 - 2010)**	**FY11 and Remaining Cost (Low Range)**	**FY11 and Remaining Cost (High Range)**	**Lifecycle Cost (Low Range)**	**Lifecycle Cost (High Range)**
Hanford Site	RL-0012	SNF Stabilization and Disposition	2,198,946	774,916	801,868	2,973,862	3,000,814
Hanford Site	RL-0013C	Solid Waste Stabilization & Disposition	2,143,877	11,362,941	12,667,479	13,506,818	14,811,356
Hanford Site	RL-0020	Safeguards and Security	602,101	2,982,829	2,982,829	3,584,930	3,584,930
Hanford Site	RL-0030	Soil and Water Remediation-Groundwater/Vadose Zone	1,044,745	6,745,852	6,924,445	7,790,597	7,969,190
Hanford Site	RL-0040	Nuclear Facility D&D-Remainder of Hanford	1,453,851	16,619,151	17,661,810	18,073,002	19,115,661
Hanford Site	RL-0041	Nuclear Facility D&D-River Corridor Closure Project	2,574,063	2,103,134	2,261,734	4,677,197	4,835,797
Hanford Site	RL-0042	Nuclear Facility D&D-Fast Flux Test Facility Project	302,051	945,077	1,011,491	1,247,128	1,313,542
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	70,479	0	0	70,479	70,479
Hanford Site	RL-0100	Richland Community and Regulatory Support	200,719	1,003,489	1,003,489	1,204,208	1,204,208
Hanford Site	RL-0900	Pre-2004 Completions	129,022	0	0	129,022	129,022
Hanford Site Total			12,631,818	43,836,988	46,666,174	56,468,806	59,297,992
Headquarters	HQ-MS-0100	Policy, Management, and Technical Support	730,055	857,948	857,948	1,588,003	1,588,003
Headquarters	HQ-UR-0100	Reimbursements to Uranium/Thorium Licensees	431,849	271,398	271,398	703,247	703,247
Headquarters Total			1,161,904	1,129,346	1,129,346	2,291,250	2,291,250
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	16,000	19,204	35,204
Idaho National Laboratory	ID-0012B-D	SNF Stabilization and Disposition-2012 (Defense)	479,524	42,100	191,830	521,624	671,354
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	4,016,344	5,071,415	4,061,995	5,117,066

Lifecycle Costs by Program Baseline Summary (PBS) Thousands of Dollars							
Site	**PBS Code**	**PBS Name**	**Prior Costs (97 - 2010)**	**FY11 and Remaining Cost (Low Range)**	**FY11 and Remaining Cost (High Range)**	**Lifecycle Cost (Low Range)**	**Lifecycle Cost (High Range)**
Idaho National Laboratory	ID-0013	Solid Waste Stabilization and Disposition	2,352,384	998,690	1,203,825	3,351,074	3,556,209
Idaho National Laboratory	ID-0013.NEW	INL Recovery Act Project--TRU Waste	64,303	48,030	48,030	112,333	112,333
Idaho National Laboratory	ID-0014B	Radioactive Liquid Tank Waste Stabilization and Disposition-2012	1,710,834	129,819	153,400	1,840,653	1,864,234
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	4,555,093	4,722,242	4,590,591	4,757,740
Idaho National Laboratory	ID-0030B	Soil and Water Remediation-2012	1,409,268	207,526	218,461	1,616,794	1,627,729
Idaho National Laboratory	ID-0030C	Soil and Water Remediation-2035	7,198	2,714,247	2,796,518	2,721,445	2,803,716
Idaho National Laboratory	ID-0040B	Nuclear Facility D&D-2012	595,242	137,616	137,879	732,858	733,121
Idaho National Laboratory	ID-0040B.NEW	D&D NE Facilities (New)	39,302	30,698	30,698	70,000	70,000
Idaho National Laboratory	ID-0040C	Nuclear Facility D&D-2035	0	1,408,781	1,454,324	1,408,781	1,454,324
Idaho National Laboratory	ID-0050B	Non-Nuclear Facility D&D-2012	103,210	0	0	103,210	103,210
Idaho National Laboratory	ID-0050C	Non-Nuclear Facility D&D-2035	0	0	0	0	0
Idaho National Laboratory	ID-0100	Idaho Community and Regulatory Support	66,179	184,702	184,702	250,881	250,881
Idaho National Laboratory	ID-0900	Pre-2004 Completions	310,261	0	0	310,261	310,261
Idaho National Laboratory Total			7,486,829	14,473,647	16,229,324	21,960,476	23,716,153
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

Lifecycle Costs by Program Baseline Summary (PBS) Thousands of Dollars							
Site	**PBS Code**	**PBS Name**	**Prior Costs (97 - 2010)**	**FY11 and Remaining Cost (Low Range)**	**FY11 and Remaining Cost (High Range)**	**Lifecycle Cost (Low Range)**	**Lifecycle Cost (High Range)**
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
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	678,675	121,987	157,687	800,662	836,362
Los Alamos National Laboratory	VL-LANL-0030	Soil and Water Remediation-LANL	1,193,800	496,771	1,144,442	1,690,571	2,338,242
Los Alamos National Laboratory	VL-LANL-0040-D	Nuclear Facility D&D-LANL (Defense)	161,411	55,578	81,407	216,989	242,818
Los Alamos National Laboratory	VL-LANL-0040-N	Nuclear Facility D&D-LANL (Non-Defense)	20,862	0	0	20,862	20,862
Los Alamos National Laboratory Total			2,054,748	674,336	1,383,536	2,729,084	3,438,284
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	255,434	3,404	3,404	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-0031.NEW	Mound Operable Unit 1 Recovery Act Project	17,616	0	0	17,616	17,616
Miamisburg	OH-MB-0100	Miamisburg Post-Closure Administration	85,323	749,953	749,953	835,276	835,276
Miamisburg	OH-MB-0101	Miamisburg Community and Regulatory Support	9,831	0	0	9,831	9,831
Miamisburg Total			704,180	753,357	753,357	1,457,537	1,457,537
Moab	CBC-MOAB-0031	Soil and Water Remediation-Moab	220,388	703,027	738,973	923,415	959,361
Moab Total			220,388	703,027	738,973	923,415	959,361
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	852,133	800,534	1,047,532	1,652,667	1,899,665
Nevada Test Site	VL-NV-0080	Operate Waste Disposal Facility-Nevada	125,016	444,472	467,605	569,488	592,621
Nevada Test Site	VL-NV-0100	Nevada Community and Regulatory Support	50,323	52,244	52,244	102,567	102,567
Nevada Test Site Total			1,128,494	1,297,250	1,567,381	2,425,744	2,695,875

Lifecycle Costs by Program Baseline Summary (PBS) Thousands of Dollars							
Site	**PBS Code**	**PBS Name**	**Prior Costs (97 - 2010)**	**FY11 and Remaining Cost (Low Range)**	**FY11 and Remaining Cost (High Range)**	**Lifecycle Cost (Low Range)**	**Lifecycle Cost (High Range)**
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	196,046	188,775	188,775	384,821	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	1,133,120	517,744	568,734	1,650,864	1,701,854
Oak Ridge Reservation	OR-0020	Safeguards and Security	173,443	109,127	113,431	282,570	286,874
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	61,857	135	141	61,992	61,998
Oak Ridge Reservation	OR-0040	Nuclear Facility D&D-East Tennessee Technology Park (D&D Fund)	2,235,826	923,195	1,028,123	3,159,021	3,263,949
Oak Ridge Reservation	OR-0041	Nuclear Facility D&D-Y-12	465,153	658,897	745,270	1,124,050	1,210,423
Oak Ridge Reservation	OR-0041.NEW	Y-12 Recovery Act Project	101,997	63,780	70,258	165,777	172,255
Oak Ridge Reservation	OR-0042	Nuclear Facility D&D-Oak Ridge National Laboratory	490,194	649,201	740,117	1,139,395	1,230,311
Oak Ridge Reservation	OR-0042.NEW	Oak Ridge Recovery Act Project	31,600	21,743	29,154	53,343	60,754
Oak Ridge Reservation	OR-0043	Nuclear Facility D&D-East Tennessee Technology Park (Defense)	85,073	43,539	45,684	128,612	130,757
Oak Ridge Reservation	OR-0100	Oak Ridge Reservation Community & Regulatory Support (Defense)	105,077	40,936	42,524	146,013	147,601
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	180,079	129,054	134,059	309,133	314,138
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			7,053,975	3,346,126	3,706,270	10,400,101	10,760,245
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	4,958,181	49,030,288	56,702,951	53,988,469	61,661,132
Office of River Protection	ORP-0060	Major Construction-Waste Treatment Plant	6,199,988	6,063,012	6,063,012	12,263,000	12,263,000

Lifecycle Costs by Program Baseline Summary (PBS) Thousands of Dollars							
Site	**PBS Code**	**PBS Name**	**Prior Costs (97 - 2010)**	**FY11 and Remaining Cost (Low Range)**	**FY11 and Remaining Cost (High Range)**	**Lifecycle Cost (Low Range)**	**Lifecycle Cost (High Range)**
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			11,592,941	55,215,539	62,888,202	66,808,480	74,481,143
Other	CBC-0100-FN	CBC Post Closure Administration - Fernald	54,781	1,331	1,331	56,112	56,112
Other	CBC-0100-MD	CBC Post Closure Administration - Mound	1,839	1,566	1,566	3,405	3,405
Other	CBC-0100-RF	CBC Post Closure Administration - Rocky Flats	13,159	7,348	7,348	20,507	20,507
Other	CBC-CA-0013B-N	Solid Waste Stabilization and Disposition-California Sites-2012 (Non-Defense)	6,189	286	286	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	84,149	0	0	84,149	84,149
Other	OH-OPS-0900-D	Pre-2004 Completions	57,659	0	0	57,659	57,659
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	88,815	15,184	15,184	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	14,438	954	954	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	112,895	34,986	37,004	147,880	149,898
Other	VL-SV-0100	South Valley Superfund	6,061	0	0	6,061	6,061

Lifecycle Costs by Program Baseline Summary (PBS) Thousands of Dollars							
Site	**PBS Code**	**PBS Name**	**Prior Costs (97 - 2010)**	**FY11 and Remaining Cost (Low Range)**	**FY11 and Remaining Cost (High Range)**	**Lifecycle Cost (Low Range)**	**Lifecycle Cost (High Range)**
Other Total			1,336,748	61,655	63,673	1,398,402	1,400,420
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	34,494	25,565	26,691	60,059	61,185
Paducah Gaseous Diffusion Plant	PA-0011X	NM Stabilization and Disposition-Depleted Uranium Hexafluoride Conversion	757,695	2,035,571	2,035,571	2,793,266	2,793,266
Paducah Gaseous Diffusion Plant	PA-0013	Solid Waste Stabilization and Disposition	257,329	74,170	86,949	331,499	344,278
Paducah Gaseous Diffusion Plant	PA-0020	Safeguards and Security	56,163	84,235	94,585	140,398	150,748
Paducah Gaseous Diffusion Plant	PA-0040	Nuclear Facility D&D-Paducah	923,271	1,172,116	1,236,689	2,095,387	2,159,960
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)	34,885	7,359	10,541	42,244	45,426
Paducah Gaseous Diffusion Plant	PA-0103	Paducah Community and Regulatory Support (D&D Fund)	24,314	36,565	39,401	60,879	63,715
Paducah Gaseous Diffusion Plant Total			2,098,685	9,235,581	16,030,427	11,334,266	18,129,112
Pantex Plant	VL-PX-0030	Soil and Water Remediation-Pantex	180,885	0	0	180,885	180,885
Pantex Plant	VL-PX-0040	Nuclear Facility D&D-Pantex	15,120	0	0	15,120	15,120
Pantex Plant Total			196,005	0	0	196,005	196,005
Portsmouth Gaseous Diffusion Plant	PO-0011	NM Stabilization and Disposition-Portsmouth Uranium Facilities Management	100,975	0	0	100,975	100,975
Portsmouth Gaseous Diffusion Plant	PO-0011X	NM Stabilization and Disposition-Depleted Uranium Hexafluoride Conversion	480,784	1,336,604	1,336,604	1,817,388	1,817,388
Portsmouth Gaseous Diffusion Plant	PO-0013	Solid Waste Stabilization and Disposition	440,755	83,778	85,146	524,533	525,901
Portsmouth Gaseous Diffusion Plant	PO-0020	Safeguards and Security	121,231	614,319	614,319	735,550	735,550
Portsmouth Gaseous Diffusion Plant	PO-0040	Nuclear Facility D&D-Portsmouth	1,102,850	4,791,002	11,607,536	5,893,852	12,710,386
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)	6,120	35,333	35,333	41,453	41,453
Portsmouth Gaseous Diffusion Plant	PO-0104	Portsmouth Community and Regulatory Support (D&D Fund)	3,358	17,348	17,348	20,706	20,706
Portsmouth Gaseous Diffusion Plant Total			2,694,598	6,878,384	13,696,286	9,572,982	16,390,884
Program Direction	HQ-PD-0100	Program Direction	4,237,236	7,842,832	7,842,832	12,080,068	12,080,068

Lifecycle Costs by Program Baseline Summary (PBS) Thousands of Dollars							
Site	**PBS Code**	**PBS Name**	**Prior Costs (97 - 2010)**	**FY11 and Remaining Cost (Low Range)**	**FY11 and Remaining Cost (High Range)**	**Lifecycle Cost (Low Range)**	**Lifecycle Cost (High Range)**
Program Direction Total			4,237,236	7,842,832	7,842,832	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	141,827	2,509,140	2,509,140	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			6,538,326	2,509,140	2,509,140	9,047,466	9,047,466
Sandia National Laboratory	VL-SN-0030	Soil and Water Remediation-Sandia	237,999	2,008	2,008	240,007	240,007
Sandia National Laboratory Total			237,999	2,008	2,008	240,007	240,007
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	3,689,097	66,609	66,609	3,755,706	3,755,706
Savannah River Site	SR-0011C	NM Stabilization and Disposition-2035	1,671,983	5,357,714	5,987,717	7,029,697	7,659,700
Savannah River Site	SR-0012	SNF Stabilization and Disposition	359,583	559,053	576,653	918,636	936,236
Savannah River Site	SR-0013	Solid Waste Stabilization and Disposition	1,436,133	2,343,820	2,566,441	3,779,953	4,002,574
Savannah River Site	SR-0014C	Radioactive Liquid Tank Waste Stabilization and Disposition-2035	7,150,616	11,922,324	15,596,324	19,072,940	22,746,940
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	1,471,384	2,142,121	2,142,121	3,613,505	3,613,505
Savannah River Site	SR-0030	Area Completion	1,521,184	2,831,118	3,178,961	4,352,302	4,700,145
Savannah River Site	SR-0040	Nuclear Facility D&D	492,370	4,845,182	5,355,048	5,337,552	5,847,418
Savannah River Site	SR-0040B	Nuclear Facility D&D-2012	778	0	0	778	778
Savannah River Site	SR-0100	Non-Closure Mission Support	204,954	140,000	140,000	344,954	344,954

Lifecycle Costs by Program Baseline Summary (PBS) Thousands of Dollars							
Site	**PBS Code**	**PBS Name**	**Prior Costs (97 - 2010)**	**FY11 and Remaining Cost (Low Range)**	**FY11 and Remaining Cost (High Range)**	**Lifecycle Cost (Low Range)**	**Lifecycle Cost (High Range)**
Savannah River Site	SR-0101	Savannah River Community and Regulatory Support	127,875	210,000	210,000	337,875	337,875
Savannah River Site	SR-0900	Pre-2004 Completions	198,242	0	0	198,242	198,242
Savannah River Site Total			18,663,951	30,417,941	35,819,874	49,081,892	54,483,825
Stanford Linear Accelerator Center	CBC-SLAC-0030	Soil and Water Remediation-Stanford Linear Accelerator Center	52,792	8,134	8,134	60,926	60,926
Stanford Linear Accelerator Center Total			52,792	8,134	8,134	60,926	60,926
Technology Development and Deployment	HQ-TD-0100	Technology Development	1,730,232	1,342,351	1,342,351	3,072,583	3,072,583
Technology Development and Deployment Total			1,730,232	1,342,351	1,342,351	3,072,583	3,072,583
Waste Isolation Pilot Plant	CB-0020	Safeguards and Security	31,198	160,323	160,323	191,521	191,521
Waste Isolation Pilot Plant	CB-0080	Operate Waste Disposal Facility-WIPP	2,137,034	2,745,272	3,155,893	4,882,306	5,292,927
Waste Isolation Pilot Plant	CB-0081	Central Characterization Project	239,674	218,748	281,339	458,422	521,013
Waste Isolation Pilot Plant	CB-0090	Transportation-WIPP	379,145	521,810	593,705	900,955	972,850
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	231,124	28,828	28,828	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			3,036,641	3,674,981	4,220,088	6,711,622	7,256,729
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	269,300	15,569	22,670	284,869	291,970
West Valley Demonstration Project	OH-WV-0014	Radioactive Liquid Tank Waste Stabilization and Disposition-West Valley High-Level Waste Storage	0	166,678	207,678	166,678	207,678
West Valley Demonstration Project	OH-WV-0020	Safeguards and Security-West Valley	19,119	32,962	32,962	52,081	52,081
West Valley Demonstration Project	OH-WV-0040	Nuclear Facility D&D-West Valley	579,562	564,527	642,209	1,144,089	1,221,771
West Valley Demonstration Project Total			900,300	779,736	905,519	1,680,036	1,805,819
Grand Total			90,482,346	184,637,909	218,006,908	275,120,255	308,489,254

Carlsbad

Funding Schedule by Activity

	FY 2010 Current Appropriation	FY 2012 Request
Defense Environmental Cleanup		
Waste Isolation Pilot Plant		
CB-0080 / Operate Waste Disposal Facility-WIPP	150,271	147,136
CB-0081 / Central Characterization Project	26,611	23,975
CB-0090 / Transportation-WIPP	26,671	29,044
CB-0101 / Economic Assistance to the State of New Mexico	26,784	28,771
Subtotal, Waste Isolation Pilot Plant	230,337	228,926

Site Overview

The Carlsbad Field Office 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 contact-handled and remote-handled waste 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.

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 Carlsbad Field Office National Transuranic Program coordinates with all DOE transuranic waste sites to retrieve, repackage, characterize, ship, and dispose of transuranic waste, cleaning up sites, reducing risks, and decreasing nuclear footprints. The EM Goal is to "Complete disposition of 90 percent of legacy transuranic waste by 2015", which is an acceleration from previous plans.

Although the Waste Isolation Pilot Plant is not a cleanup site itself, it is the final disposition for DOE transuranic waste cleanup sites complex-wide. The Waste Isolation Pilot Plant is an operating facility, supporting the disposal of transuranic waste from waste generator and storage sites.

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 December 2010. 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 received its second Compliance Recertification Application from the Environmental Protection Agency in March 2009, and the Environmental Protection Agency approved it in November 2010.

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 Carlsbad Field Office and the DOE Headquarters Office of Environmental Management are 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 the American Recovery and Reinvestment Act and base program funds, the Carlsbad Field Office is taking action through management and oversight of the Central Characterization Project 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 the states and their decisions that impact waste certification, operations, certification of the Waste Isolation Pilot Plant, permit modifications, licenses, shipping, and disposal.

Agreements with States at the Waste Isolation Pilot Plant's generator sites may impact the Waste Isolation Pilot Plant. These include the Idaho Settlement Agreement for transuranic waste shipments from the Idaho National Laboratory, the Consent Order for shipments from Los Alamos National Laboratory in New Mexico, and the revised Tri-Party Agreement for shipments from Richland, Washington. Additionally, cooperative agreements have been negotiated with four State Regional Groups (who represent corridor states) and 10 Native American Tribes to ensure the safe and uneventful transportation of radioactive waste through corridor states and Tribal lands utilizing negotiated protocols for transporting these shipments through those states.

Contract Synopsis

Data as of December 2010

Contractor	Base Period Current Period	Total Value	Contract Description	Contract Type
CAST Specialty Transportation, Inc.	Base Period 3/14/2007 - 1/14/2008 5 - Option Periods 1/15/2008 - 3/13/2012	$23.2M	Specialized Transportation Services	Indefinite Delivery/ Indefinite Quantity Firm Fixed Price with other Direct Cost
Portage, Inc.	3 yr Base 7/02/10 - 7/01/13 Option Period 7/02/13 -7/01/15	$29.60M	Carlsbad Technical Assistance Contract	GSA Schedule Award – Competitive Award
Visionary Solutions, LLC	Base Period 9/27/2007 - 7/27/2008 5 Option Periods 7/28/2008 - 9/26/2012	$31.7M	Specialized Transportation Services	Indefinite Delivery/ Indefinite Quantity Firm Fixed Price with other Direct Cost
Washington TRU Solutions, LLC	5 yr Base, Extended to 9/30/2012 10/1/2000 - 9/30/2005 1 - 5 yr Option 10/01/2005 - 3/31/2010 Extended through 09/30/2012	$1.9B	Waste Isolation Pilot Project Management & Operating Contract	Cost plus Award Fee
Ma-Chis Lower Creek Indian Tribes	Base Period 2/16/2008 - 2/15/2009 4 Option Periods 2/16/2009 - 2/15/2012	$5.2M	Tracking and Monitoring of Transportation Specialized Transportation Services	8A Sole Source Set-Aside to Tribal Owned Company Indefinite Quantity Firm Fixed Price with other Direct Cost
EXCEL Staffing Co. ARRA Support	Four contracts Three are for 8/11/2010-9/2011, One 04/14/2010-9/2011	$500,492	Providing Procurement Analyst, Budget Analyst , Administrative Assistance/Support for ARRA office	Fixed Price

In addition, both Los Alamos National Laboratory and Sandia National Laboratories maintain offices in Carlsbad and are funded from EM through the NNSA to contribute to the success of the Waste Isolation Pilot Plant and the National Transuranic Program.

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 $11,363,000.

Detailed Justification

(dollars in thousands)

	FY 2010 Current Appropriation	FY 2012 Request
CB-0080 / Operate Waste Disposal Facility-WIPP	**150,271**	**147,136**

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 17 sites.

Although the volume of waste emplaced each year is somewhat dependent upon the specific waste streams shipped and payload constraints. 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. While the EM Corporate Performance Metric transuranic waste dispositioned describes activities involved in the preparation and characterization of suspected transuranic waste inventories. These tables below display only the portion of Transuranic waste that is transported and emplaced at the Waste Isolation Pilot Plant. Contact-handled transuranic waste disposal began in 1999; remote-handled transuranic waste disposal began in 2007. TRU volumes emplaced from FY 2009 through FY 2012 were accomplished by both ARRA funds and base appropriations.

(dollars in thousands)

FY 2010 Current Appropriation	FY 2012 Request

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
FY 2010	1063	5114	0	475	862	0	0	0	230	0	70,565
Site Totals:	4,618	32,676	15,062	4,236	13,018	121	405	146	279	4	70,565

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	134.0
FY 2010	0.0	18.9	0.0	7.3	32.8	19.1	212.1
Site Totals:	14.2	104.7	18.4	17.2	37.8	19.7	212.1

The volumes provided here reflect certified TRU waste volumes emplaced at the Waste Isolation Pilot Plant, including total unfilled disposal package volume. This differs from the "TRU dispositioned" corporate performance metric, which reflects waste inventories at generator sites, prior to full characterization and processing. A significant portion of the "TRU dispositioned" inventory may be disposed of as low level waste and not require disposal at the Waste Isolation Pilot Plant.

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 2010, the following activities were completed:

- Received notice of award to start construction of the South Access Road leading to the Waste Isolation Pilot Plant facility using the American Recovery and Reinvestment Act funding in March 2010.

- Received final Hazardous Waste Facility permit from New Mexico Environment Department in December 2010.

(dollars in thousands)

FY 2010 Current Appropriation	FY 2012 Request

- Emplaced 7,822 cubic meters of TRU waste.

- Awarded new Carlsbad technical assistance contract in July to provide expert technical support and oversight for the National Transuranic Program, the Waste Isolation Pilot Plant science and international programs, and support to American Recovery and Reinvestment Act activities.

In FY 2012, the following activities are planned:

- 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 (including support for TRUPACT-III and payload containers at the generator sites and the Waste Isolation Pilot Plant). 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.

- 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.

- Maintain safety and personnel health programs, surface and underground operations and maintenance, program administration, emergency planning and services, generator site interface, payments to organizations for independent oversight, assistance, and regulatory compliance.

- Support underground fan renovation, capital equipment purchases, road maintenance, facility modifications and construction, as well as upgrade underground fiber optic cabling.

- Provide support in the mining of panel 8 and closure of filled panels in accordance with regulatory requirements.

(dollars in thousands)

	FY 2010 Current Appropriation	FY 2012 Request
CB-0081 / Central Characterization Project	**26,611**	**23,975**

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

The Carlsbad Field Office manages the 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.

This project scope includes labor, materials, and supplies for operation of mobile waste characterization systems deployed to DOE 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 the 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 the 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 2010, the following activities were completed:

- Completed removal of legacy waste from the Hitachi General Electric Vallecitos Nuclear Center and Lawrence Livermore National Laboratory Site 300.

- Provided 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.

- Supported generator site interface for the Central Characterization Project activities, Central Characterization Project administration, and Performance Demonstration Program for Resource Conservation and Recovery Act constituents.

(dollars in thousands)

FY 2010 Current Appropriation	FY 2012 Request

- Supported Central Characterization Project waste certification for transportation of waste consolidated at Idaho National Laboratory.
- Completed removal of all transuranic waste at four Small Quantity Sites under the American Reinvestment and Recovery Act.
- Started characterization work 5 years early at the Savannah River and Hanford sites using the American Recovery and Reinvestment Act resources.
- Increased capability to characterize transuranic waste at the Los Alamos National Laboratory and the Oak Ridge National Laboratory through a combination of base and American Recovery and Reinvestment Act resources.

In FY 2012, the following activities are planned:

- Support generator site interface for the Central Characterization Project activities, transuranic waste audits, Performance Demonstration Program for Non-destructive Assay, and Resource Conservation and Recovery Act constituents.
- Provide funding for Acceptable Knowledge, shipping site waste loading services, waste certification support, headspace gas analysis, and soils and solids analysis required for characterization activities.
- Continue waste certification for transportation of waste consolidated at the Idaho National Laboratory.
- Support Central Characterization Project for contact-handled and remote-handled transuranic waste at the Oak Ridge National Laboratory for disposal at the Waste Isolation Pilot Plant.
- Support Central Characterization Project for contact-handled transuranic waste at the Hanford Site for disposal at the Waste Isolation Pilot Plant.

Key Accomplishments (FY 2010)/Planned Milestones (/FY 2012)

- Complete 34 Argonne National Laboratory remote-handled shipments (FY 2010)
- Redeploy large box Non-destructive Evaluation/Non-destructive Assay units from SRS to Hanford (December 2011)

(dollars in thousands)

	FY 2010 Current Appropriation	FY 2012 Request
CB-0090 / Transportation-WIPP	**26,671**	**29,044**

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

This project 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, as amended, this project provides for technical assistance for the purpose of training public safety officials and other 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 2010, the following activities were completed:

- Supported fixed-price portion of the carrier contracts and cost-reimbursable portion of contracts (fuel, state use fees, and permits, New Mexico Gross Receipts Tax, driver per diem, and safe driving bonus).
- Supported shipping corridor readiness, remote-handled waste packaging, and shipping services, including Nuclear Regulatory Commission fees.
- Increased shipping rates to a target goal of 30 contact-handled and 5 remote-handled shipments a week through the use of American Recovery and Reinvestment Act funding.
- Received Certificate of Compliance for TRUPACT-III from the Nuclear Regulatory Commission on June 1, 2010.

In FY 2012, the following activities are planned:

- Supports fixed-price portion of the carrier contract; cost-reimbursable portion of the carrier contracts (fuel, state use fees, permits, New Mexico Gross Receipts Tax, driver per diem, and safe driving bonus).
- Supports shipping corridor readiness, remote-handled waste packaging, and shipping services, including Nuclear Regulatory Commission fees.
- Supports the capability and goal of 21 contact-handled and 5 remote-handled shipments per week from large and small generator sites to the Waste Isolation Pilot Plant (actual shipment rate will depend on specific waste streams certified and available for shipment and the respective type of shipping package used).

(dollars in thousands)

	FY 2010 Current Appropriation	FY 2012 Request

Key Accomplishments (FY 2010)/Planned Milestones (FY 2012)

- Increased shipping rates to a target goal of 30 contact-handled and 5 remote-handled per week (FY 2010)
- Received Nuclear Regulatory Commission Certificate of Compliance Approval of TRUPACT III (FY 2010)
- Complete production of TRUPACT-III fleet (February 2012)
- 21 CH & 5 RH shipments per-week capability (FY12) (September 2012)

CB-0101 / Economic Assistance to the State of New Mexico	**26,784**	**28,771**

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

This project fulfilled a requirement of the Waste Isolation Pilot Plant Land Withdrawal Act, as amended, (Public Law 102-579) which authorized 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.

In FY 2010, the following activities were completed:

- Provided 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.

In FY 2012, the following activity is planned:

- Provides for economic assistance to the State of New Mexico.

Key Accomplishments (FY 2010)/Planned Milestones (FY 2012)

- Provided funding to the State of New Mexico (FY 2010)

Total, Carlsbad	**230,337**	**228,926**

Explanation of Funding Changes

	FY 2012 vs. FY 2010 Current Approp. ($000)
Defense Environmental Cleanup	
Waste Isolation Pilot Plant	
CB-0080 / Operate Waste Disposal Facility-WIPP	
▪ Decrease in operations funding reflects reduced level of regulatory development and support activities, due to Hazardous Waste Permit Renewal and Compliance Recertification being completed.	-3,135
CB-0081 / Central Characterization Project	
▪ Decrease reflects reduction in the number of sites at which the Central Characterization Project is deployed because only a few small quantity sites remain to be closed in FY 2012.	-2,636
CB-0090 / Transportation-WIPP	
▪ Increase reflects return to base funding for transportation activities such as carrier services, transportation packaging and shipping coordination.	2,373
CB-0101 / Economic Assistance to the State of New Mexico	
▪ Increase in funding for economic assistance to the State of New Mexico.	1,987
Total, Carlsbad	**-1,411**

Idaho

Funding Schedule by Activity

	FY 2010 Current Appropriation	FY 2012 Request
Defense Environmental Cleanup		
Idaho National Laboratory		
Idaho National Laboratory		
ID-0012B-D / SNF Stabilization and Disposition-2012 (Defense)	36,958	20,114
ID-0013 / Solid Waste Stabilization and Disposition	160,047	165,035
ID-0014B / Radioactive Liquid Tank Waste Stabilization and Disposition-2012	189,604	110,169
ID-0030B / Soil and Water Remediation-2012	68,219	87,451
ID-0040B / Nuclear Facility D&D-2012	5,450	0
ID-0100 / Idaho Community and Regulatory Support	3,890	0
Subtotal, Idaho National Laboratory	464,168	382,769
Community, Regulatory and Program Support		
Idaho National Laboratory		
ID-0100 / Idaho Community and Regulatory Support	0	4,100
Total, Defense Environmental Cleanup	464,168	386,869
Non-Defense Environmental Cleanup		
Small Sites		
Idaho National Laboratory		
ID-0012B-N / SNF Stabilization and Disposition-2012 (Non-Defense)	5,000	5,131
Total, Idaho	469,168	392,000

In FY 2012, EM will be consolidating EM Headquarters policy and oversight activities, community and regulatory support and contract/post closure activities across the EM complex into a single control point. The consolidation of these activities into a single control point will allow for greater transparency and accountability of overhead activities but will also provide flexibility during the year of execution. While these activities are being consolidated into a single control point, the individual activities will continue to be displayed within the site chapters of the EM budget.

The funding table below provides a comparable display of the impacted activities and a comparable display will be continued throughout this budget chapter to aid in budget review.

Funding Schedule by Activity

	FY 2010 Current Appropriation	FY 2012 Request
Defense Environmental Cleanup		
Idaho National Laboratory		
ID-0012B-D / SNF Stabilization and Disposition-2012 (Defense)	36,958	20,114
ID-0013 / Solid Waste Stabilization and Disposition	160,047	165,035
ID-0014B / Radioactive Liquid Tank Waste Stabilization and Disposition-2012	189,604	110,169
ID-0030B / Soil and Water Remediation-2012	68,219	87,451
ID-0040B / Nuclear Facility D&D-2012	5,450	0
Subtotal, Idaho National Laboratory	460,278	382,769
Community, Regulatory and Program Support		
ID-0100 / Idaho Community and Regulatory Support	3,890	4,100
Total, Defense Environmental Cleanup	464,168	386,869
Non-Defense Environmental Cleanup		
Small Sites		
ID-0012B-N / SNF Stabilization and Disposition-2012 (Non-Defense)	5,000	5,131
Total, Idaho	469,168	392,000

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 (used) nuclear fuel and high level waste from Idaho. The Idaho Cleanup Project is also responsible for storing and disposing of approximately 285 metric tons of spent (used) 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 (used) nuclear fuel at the Fort Saint Vrain Independent Spent (used) Fuel Storage Installation in Colorado. The Idaho 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.

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 EM assigned spent (used) nuclear fuel in dry storage and spent (used) nuclear fuel assigned to Nuclear Energy and the Navy Nuclear Propulsion Program in wet 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 and hazardous 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 Waste Area Group 7 Operable Unit 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:

- Of the 338 Comprehensive Environmental Response, Compensation, and Liability Act sites identified as being potentially contaminated (as of 1997), 79 percent (266 sites) have been cleaned

up (as of FY 2010) 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 radioactive liquid waste have been treated resulting in 4,400 m^3 of calcine (a dried powdered form). The remaining volume of liquid waste in the tank farm is approximately 900,000 gallons of sodium-bearing waste;
- Close remaining four High Level Waste Tanks (300,000 gallon tanks); eleven of 15 Radioactive Waste Tanks have already been emptied, cleaned and grouted; (Seven—300,000 gallon tanks and Four—30,000 gallon tanks);
- Nearly 56,000 m^3 of low-level waste has been disposed;
- Over 234,000 pounds 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 (used) nuclear fuel must be shipped off-site and radioactive 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 by Nuclear Energy are ready for disposition and demolition;
- Treat for transportation out of Idaho liquid sodium-bearing waste stored in underground tanks;
- Empty and disposition all Tank Farm Facility tanks;
- Put all EM legacy spent (used) nuclear fuel in dry storage by 2023 (completed);
- Ship all EM spent (used) nuclear fuel out of the state by 2035;
- 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 m^3) 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 and hazardous 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.

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 (used) nuclear fuel at the Idaho National Laboratory. The agreement specifies milestones such as the removal of all spent (used) nuclear fuel from Idaho Site by 2035 and treatment of liquid high level radioactive waste by December 31, 2012. In addition, all calcine waste must be road ready for shipment out of state by December 2035.

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 the1992 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.

In addition, Congress Enacted Section 3116 of the Ronald W. Reagan National Defense Authorization Act of FY 2005 (Public Law 108-375: 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. 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 (used) nuclear fuel is appropriate for onsite disposal 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.

Critical Project Uncertainties and Assumptions

DOE will identify disposal pathways and schedules for liquid sodium-bearing waste, tank farm closure, and calcined waste, spent nuclear fuel repackaging, and wastes with no existing path at this time for disposal in time to meet key Idaho National Laboratory commitments.

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 (used) nuclear fuel data, and inter-site coordination for foreign and domestic research reactor receipts. Off-site disposition of the radioactive waste and spent (used) nuclear fuel is required.

Contract Synopsis

Data as of December 2010

Contractor	Base Period Current Period	Total Value	Contract Description	Contract Type
Bechtel BWXT Idaho LLC	3/24/1999 – 3/31/2011	$4.409B	Advanced Mixed Waste Treatment Plant. Transuranic waste shipments to the Waste Isolation Pilot Plant.	Cost Reimbursement with Performance Based Incentives (M&O)
CH2M-WG Idaho LLC	03/23/2005- 9/30/2012	$3.585B	Idaho Cleanup Project	Cost Plus Incentive Fee

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 (used) nuclear fuel has been 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 in these areas 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 $21,328,000.

Detailed Justification

(dollars in thousands)

	FY 2010 Current Appropriation	FY 2012 Request
ID-0100 / Idaho Community and Regulatory Support	**3,890**	**4,100**

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

This PBS scope includes work in three major areas for environmental regulatory oversight and stakeholder interactions and support:

1) State of Idaho Department of Environmental Quality Grant and Air Quality Permitting Fees.

2) The United States Geological Survey performs groundwater monitoring and subsurface investigation on the regional (Eastern Snake River Plain Aquifer) and sub-regional (site-wide) scale for the Idaho Site.

3) The Idaho Site Citizens Advisory Board is chartered by the DOE as an EM Site-Specific Advisory Board.

In FY 2010, the following accomplishments were completed:

- Continued 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.
- Provided fees for the Title V Air Permit and technical assistance for air quality compliance.
- Provided grant to the State of Idaho Department of Environmental Quality.

In FY 2012, 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.
- Provide grant to the State of Idaho Department of Environmental Quality.

(dollars in thousands)

	FY 2010 Current Appropriation	FY 2012 Request

Key Accomplishments (FY 2010)/Planned Milestones (FY 2012)

- DEQ grants enabled obtaining closure plans, permits/permit mods; CERCLA (FY 2010)
- DEQ grants enabled obtaining hazardous waste management closure plans, permits or permit mods; CERCLA (FY 2010)
- DEQ grants will enable obtaining hazardous waste management closure plans, permits mods; CERCLA (September 2012)

ID-0012B-D / SNF Stabilization and Disposition-2012 (Defense)	**36,958**	**20,114**

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

The scope of this PBS includes stabilizing legacy spent (used) nuclear fuel through 2012 and managing the receipt of off-site spent (used) nuclear fuel shipments. EM currently manages and stores approximately 285 metric tons of spent (used) nuclear fuel at the Idaho Site. The EM plan includes the receipt of approximately 22 metric tons of spent (used) nuclear fuel from off-site locations, including Foreign and Domestic Research Reactor spent (used) nuclear fuel from FY 2005 through FY 2027. The plan also includes the receipt of approximately 0.5 metric tons of spent (used) nuclear fuel through FY 2012 from the on-site operating Advanced Test Reactor. This project includes support costs for the National Spent (used) Nuclear Fuel Program and costs to accelerate the transfer of 3,186 fuel handling units of legacy spent (used) nuclear fuel from wet to dry storage ahead of the Idaho Settlement Agreement date of FY 2023.

In FY 2010, the following accomplishments were completed:

- Completed transfer of all EM-owned spent (used) nuclear fuel (3,186 fuel handling units) to dry storage.
- Maintained the Chemical Processing Plant building-666 with accompanying spent (used) nuclear fuel.
- Received and stored 10 fuel shipments from the Advanced Test Reactor.
- Initiated treatment of the sodium bonded spent nuclear fuel from the Fast Flux Test Facility.

In FY 2012 the following activities are planned:

- Maintain the Chemical Processing Plant building-666 with accompanying spent (used) nuclear fuel.

(dollars in thousands)

FY 2010 Current Appropriation	FY 2012 Request

- Continue to maintain all dry spent (used) nuclear fuel storage facilities.
- Receive and store up to 31 shipments of Advanced Test Reactor spent (used) nuclear fuel in CPP-666.
- Receive and unload Domestic and Foreign Research Reactor spent (used) nuclear fuel.
- Continue to support the National Spent Nuclear Fuel Program.
- Continue scientific applied research and technology development activities to assure safe extended storage of spent (used) nuclear fuel and capability to re-license facilities to advance spent nuclear fuel packaging to achieve cost reductions, and to initiate activities to identify, characterize, and develop treatment technologies for challenging materials.

Key Accomplishments (FY 2010)/Planned Milestones (FY 2012)

- Completed transfer of all EM-owned SNF to dry storage. (FY 2010)
- Received 10 Advanced Test Reactor Fuel Shipments (FY 2010)
- Receive Advanced Test Reactor Fuel Shipments (September 2012)
- Receive Three (3) Foreign Research Reactor and Domestic Spent Nuclear Fuel Shipments (September 2012)

ID-0013 / Solid Waste Stabilization and Disposition 160,047 165,035

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 m^3 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 m^3) has been eliminated.

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

(dollars in thousands)

FY 2010 Current Appropriation	FY 2012 Request

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 National Security Site or Energy Solutions in Utah.

In FY 2010, the following accomplishments were completed:

- Characterized, treated, and shipped 4,650 m^3 of suspected contact-handled transuranic waste (includes legacy mixed low-level waste) to the Waste Isolation Pilot Plant or another suitable disposition site.
- Disposed of 1,400 m^3 of mixed low-level and low-level waste off-site.
- Completed disposition of EM legacy remote-handled transuranic waste to the Waste Isolation Pilot Plant.
- Provided site-wide environmental compliance and maintained and operated the Radioactive Waste Management Complex.

In FY 2012, 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 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

(dollars in thousands)

FY 2010 Current Appropriation	FY 2012 Request

shipment to the Waste Isolation Pilot Plant.

- Ship 4,500 m^3 of contact-handled transuranic waste to the Waste Isolation Pilot Plant.
- Continue to dispose mixed low-level and low-level waste off-site.

Key Accomplishments (FY 2010)/Planned Milestones (FY 2012)

- Shipped 5,153 cubic meters of CH-TRU waste to the WIPP (FY 2010)
- Disposed of 1,338 cubic meters of LLW and MLLW (FY 2010)
- Shipped 4 cubic meters of RH-TRU waste to WIPP (FY 2010)
- Complete RH-TRU System Final Designs (September 2012)
- Ship 1,640 Cubic Meters of Mixed/Low Level Waste (September 2012)
- Ship 4,500 Cubic Meters of Contact-Handled TRU Waste (September 2012)

ID-0014B / Radioactive Liquid Tank Waste Stabilization and Disposition-2012	**189,604**	**110,169**

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

The overall objectives of this PBS are to treat and dispose of the sodium-bearing tank wastes, close 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 PBS includes design and construction of the Sodium Bearing Waste Treatment Facility. In FY 2010, $93,700,000 was appropriated for construction of the facility (06-D-401).

In FY 2010, the following accomplishments were completed:

- Continued construction of the Sodium Bearing Waste project in preparation of a hot start up in FY 2012.
- Completed grouting of the tank farm off-gas piping.
- Continued Liquid Waste Facility closure activities.

In FY 2012, the following activities are planned:

(dollars in thousands)

FY 2010 Current Appropriation	FY 2012 Request

- Begin Sodium Bearing waste operations in anticipation of a December 2012 completion.
- Maintain tank farm and systems necessary for safety and for delivery of sodium bearing waste for treatment.
- Continue providing acceptable Idaho Nuclear Technology and Engineering Center utilities, maintenance and operations for the process waste system, support laboratories, and existing process facilities.
- Completion of the treatment of 900,000 gallons of high level liquid waste will allow for final tank heel removal, flushing and other cleaning, grouting and final Resource Conservation and Recovery Act closure.
- While not included in Idaho's request, research and development funding will be utilized in FY 2012 to support maturation of the Hot Isostatic Press.

Key Accomplishments (FY 2010)/Planned Milestones (FY 2012)

- Issued Record of Decision (ROD) for EIS for path forward to treat calcine waste (FY 2010)
- CWI Completes Maturation to TRL-4 of all Critical Technology Elements (CTEs) (March 2012)
- CWI Submits Final CD-1 Documentation to DOE-ID (June 2012)
- Prepare Resource Conservation and Recovery Act Part B Permit Application (September 2012)
- CWI Submits the RCRA Part B Permit Modification Request (PMR) to DOE-ID (September 2012)

ID-0030B / Soil and Water Remediation-2012	**68,219**	**87,451**

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

The objective of this PBS 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 PBS 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. Additional activities include, 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

(dollars in thousands)

FY 2010 Current Appropriation	FY 2012 Request

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 2010, the following accomplishments were completed:

- Completed construction of Accelerated Retrieval Project-V over Pit 9.
- Closed 23 Comprehensive Environmental Response, Compensation, and Liability Act Release sites.
- Continued Organic Contaminants in the Vadose Zone extraction.
- Continued unexploded ordinance surveys and removed identified unexploded ordinance.
- Continued Test Area North groundwater remediation and monitoring.
- Continued shipping retrieved Waste Area Group 7 targeted buried waste out of Idaho.
- Completed field phase of in-situ grouting in the Subsurface Disposal Area at Waste Area Group 7 under the phase 2 work plan for Operable Unit 7-13/14.

In FY 2012, 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 buried 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 (Operable Unit 3-14) (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 (Operable Unit 10-08 (Site wide) site wide

(dollars in thousands)

	FY 2010 Current Appropriation	FY 2012 Request

ground 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 (Operable Unit 10-04) unexploded ordinance.

- Continue buried waste retrievals in Subsurface Disposal Area (0.20 acres).

Key Accomplishments (FY 2010)/Planned Milestones (FY 2012)

- Completed WAG 3 OU 3-13 Group 3 Surface Sites Remediation (FY 2010)
- Submitted for review the Remedial Design Remedial Action Work Plan for review for WAG 10 OU 10-08 (FY 2010)
- Voluntary Consent Order Submitted Certification for Fluorinel Dissolution Process cell components (FY 2010)
- Completed the Remedial Design Remedial Action Work Plan for WAG 10 OU 10-08 (FY 2010)
- Completed Field Phase of In-situ Grouting - SDA at WAG 7 Under the Phase 2 Work Plan for OU 7-13/14 (FY 2010)
- Voluntary Consent Order Submitted draft closure plan or RCRA permit application for Catch tanks, TRU Pipeline (FY 2010)
- Buried Waste Retrieval Operations in Sub-surface Retrieval Area (0.20 acres) (September 2012)

ID-0040B / Nuclear Facility D&D-2012	**5,450**	**0**

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

This PBS scope includes deactivation and final disposition of EM-owned, high-risk radiologically contaminated Idaho National Laboratory buildings, deactivation of four spent fuel storage pools (completed), disposition of four excess nuclear test reactors, and disposition of a nuclear fuel reprocessing complex. The spent fuel storage pools contained contaminated water which could leak into the Snake River Plain Aquifer-- a critical concern for regional stakeholders and State agencies. The total contaminated water volume in the four pools was nearly 2.5 million gallons. The spent nuclear fuel storage pools have had spent fuel removed and all four basins have been dewatered with remediation actions completed.

In FY 2010, the following accomplishments were completed:

- Transferred the Emergency Communication System and relocated the dial room to enable the continuation of American Recovery and Reinvestment Act funded decontamination and

(dollars in thousands)

	FY 2010 Current Appropriation	FY 2012 Request

decommissioning work.

In FY 2012, the following activities are planned:

- No planned activities.

ID-0012B-N / SNF Stabilization and Disposition-2012 (Non-Defense)	**5,000**	**5,131**

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

The purpose of this PBS 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 2010, the following accomplishments were completed:

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

In FY 2012, 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.

Total, Idaho	**469,168**	**392,000**

Explanation of Funding Changes

	FY 2012 vs. FY 2010 Current Approp. ($000)
Defense Environmental Cleanup	
Community, Regulatory and Program Support	
ID-0100 / Idaho Community and Regulatory Support	
▪ No significant change.	210
Idaho National Laboratory	
ID-0012B-D / SNF Stabilization and Disposition-2012 (Defense)	
▪ The decrease is attributable to the completion of the transfer from wet to dry storage of spent (used) nuclear fuel and completion of treatment of the sodium bonded fuel from the Fast Flux test Facility.	-16,844
ID-0013 / Solid Waste Stabilization and Disposition	
▪ The increase will allow additional characterization and certification of contact-handled transuranic waste from other small DOE sites in preparation for shipment to the Waste Isolation Pilot plant.	4,988
ID-0014B / Radioactive Liquid Tank Waste Stabilization and Disposition-2012	
▪ This PBS has a net decrease of -$79,435,000. Of that amount, -$72,000,000 is a reduction in construction funding for the Sodium Bearing Waste Treatment project which finishes in FY 2011. It also includes a reduction of -$7, 00,000 which represents the completion of grouting the tank farm off-gas piping system.	-79,435
ID-0030B / Soil and Water Remediation-2012	
▪ Increase will provide for two additional Accelerated Retrieval Projects to operate in the facilities that were constructed with American Recovery and Reinvestment Act funding.	19,232
ID-0040B / Nuclear Facility D&D-2012	
▪ Decrease reflects the completion of relocation of the Emergency Communication System and dial room.	-5,450
Non-Defense Environmental Cleanup	
Small Sites	
ID-0012B-N / SNF Stabilization and Disposition-2012 (Non-Defense)	
▪ No significant change.	131
Total, Idaho	**-77,168**

Oak Ridge

Funding Schedule by Activity

	(Dollars in Thousands)	
	FY 2010 Current Appropriation	FY 2012 Request
Defense Environmental Cleanup		
Oak Ridge		
Oak Ridge		
OR-0011Z / Downblend of U-233 in Building 3019	38,900	0
OR-0013B / Solid Waste Stabilization and Disposition-2012	43,996	99,000
OR-0031 / Soil and Water Remediation-Offsites	0	3,000
OR-0041 / Nuclear Facility D&D-Y-12	36,700	30,000
OR-0042 / Nuclear Facility D&D-Oak Ridge National Laboratory	51,299	44,000
OR-0043 / Nuclear Facility D&D-East Tennessee Technology Park (Defense)	1,900	100
OR-0100 / Oak Ridge Reservation Community & Regulatory Support (Defense)	6,253	0
Subtotal, Oak Ridge	179,048	176,100
Community, Regulatory and Program Support		
Oak Ridge		
OR-0100 / Oak Ridge Reservation Community & Regulatory Support (Defense)	0	6,409
OR-0102 / East Tennessee Technology Park Contract/Post-Closure Liabilities/Administration	0	18,500
Subtotal, Oak Ridge	0	24,909
Total, Defense Environmental Cleanup	179,048	201,009
Uranium Enrichment Decontamination and Decommissioning Fund		
Oak Ridge		
Oak Ridge		
OR-0040 / Nuclear Facility D&D-East Tennessee Technology Park (D&D Fund)	0	182,747
D&D Activities		
Oak Ridge		
OR-0040 / Nuclear Facility D&D-East Tennessee Technology Park (D&D Fund)	212,800	0
OR-0102 / East Tennessee Technology Park Contract/Post-Closure Liabilities/Administration	12,200	0
Subtotal, Oak Ridge	225,000	0
Total, Uranium Enrichment Decontamination and Decommissioning Fund	225,000	182,747
Total, Oak Ridge	404,048	383,756

In FY 2012, EM will be consolidating EM Headquarters policy and oversight activities, community and regulatory support and contract/post closure activities across the EM complex into a single control point. The consolidation of these activities into a single control point will allow for greater transparency and accountability of overhead activities but will also provide flexability during the year of execution. While these activities are being consolidated into a single control point, the individual activities will continue to be displayed within the site chapters of the EM budget. In addition, a site control level is being instituted within the Uranium Enrichment Decontamination and Decommissioning Appropriation.

The funding table below provides a comparable display of the impacted activities and a comparable display will be continued throughout this budget chapter to aid in budget review.

Funding Schedule by Activity

	(Dollars in Thousands)	
	FY 2010 Current Appropriation	FY 2012 Request
Defense Environmental Cleanup		
Oak Ridge		
Oak Ridge		
OR-0011Z / Downblend of U-233 in Building 3019	38,900	0
OR-0013B / Solid Waste Stabilization and Disposition-2012	43,996	99,000
OR-0031 / Soil and Water Remediation-Offsites	0	3,000
OR-0041 / Nuclear Facility D&D-Y-12	36,700	30,000
OR-0042 / Nuclear Facility D&D-Oak Ridge National Laboratory	51,299	44,000
OR-0043 / Nuclear Facility D&D-East Tennessee Technology Park (Defense)	1,900	100
Subtotal, Oak Ridge	172,795	176,100
Community, Regulatory and Program Support		
Oak Ridge		
OR-0100 / Oak Ridge Reservation Community & Regulatory Support (Defense)	6,253	6,409
OR-0102 / East Tennessee Technology Park Contract/Post-Closure Liabilities/Administration	12,200	18,500
Subtotal, Oak Ridge	18453	24909
Total, Defense Environmental Cleanup	191,248	201,009
Uranium Enrichment Decontamination and Decommissioning Fund		
Oak Ridge		
Oak Ridge		

	(Dollars in Thousands)	
	FY 2010 Current Appropriation	FY 2012 Request
OR-0040 / Nuclear Facility D&D-East Tennessee Technology Park (D&D Fund)	212,800	182,747
Total, Uranium Enrichment Decontamination and Decommissioning Fund	212,800	182,747
Total, Oak Ridge	404,048	383,756

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, in accordance with approved Records of Decision.

Site Description

The Oak Ridge Reservation is in east Tennessee and is comprised of three geographic locations:

- 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.

- The Oak Ridge National Laboratory 3,300 acres historically have supported both the defense production operations and civilian energy research effort.

- The Y-12 National Security Complex site is 811 acres that was a uranium processing facility and now dismantles nuclear weapons components and serves as one of the nation's storehouses for special nuclear materials. 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 are impacted by 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.
- The factors for achieving reduced cleanup cost and schedule that must be considered are execution logic and mortgage reduction.
- Having established the risk-based prioritization for the work, a number of substantive changes to work practices have also been implemented that will facilitate work execution. These changes can be categorized as either improved work flow or alternative technical approaches, and these are considered to be enabling innovations for the plans to complete cleanup.

Site Completion (End State)

- At the end of cleanup, planned by FY 2020, the East Tennessee Technology Park will meet standards for industrial land use.
- 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 after 2017.
- The lifecycle planning estimate range is 2021 to 2022 for Oak Ridge Site Cleanup Completion.

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 at Oak Ridge National Laboratory. A final Record of Decision addressing groundwater concerns at the site will be needed.

- *Bethel Valley at Oak Ridge National Laboratory:* Specific high-risk reduction actions planned include preparing Building 3019 for U-233 downblending operations; restarting excavation of Tank W-1A (Corehole 8) under Recovery Act and associated transuranic soils; remediating radiologically and chemically contaminated soils and sediments that present risks to workers and groundwater sources; acquisition planning and baseline development for completing all required remediation and decommissioning and decontamination of surplus facilities at Oak Ridge National Laboratory.

- *Melton Valley at Oak Ridge National Laboratory:* This Comprehensive Environmental Response, Compensation, and Liability Act remedial action project was completed in FY 2006. However, because 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 East Tennessee Technology Park. Site closure will now be no earlier than FY 2020. Approximately 2,200 acres of the 5,000 administrative acres that comprise the East Tennessee Technology Park contain 165 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. 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 assumes the demolition of K-25, K-27, and K-31.

- *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. Specific high risk reduction actions planned include initiation of soil and scrap-yard remediation activities designed to reduce ongoing migration of mercury and other contamination into groundwater and surface water draining from the site.

- *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 properties, which cover 64 acres combined, are in residential and commercial areas and are accessible to the public. Primary contaminants include uranium, polychlorinated biphenyls, and heavy metals. In addition, the Screen Arts property, which is immediately adjacent to the David Witherspoon 1630 site, is being characterized, and may require remedial activities.

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 after 2017 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 disposed. A significant number of additional contaminated facilities at this site are expected to be transferred to EM from the Office of Science after 2017, 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*, was signed by DOE, the United States Environmental Protection Agency, and the Tennessee Department of Environment and Conservation and implemented on January 1, 1992, to establish a procedure framework and schedule for developing, implementing, and monitoring appropriate site response actions under the Comprehensive Environmental Response, Compensation, and Liability Act.

- In conjunction with the Federal Facility Agreement, DOE, the Environmental Protection Agency and the Tennessee Department of Environment and Conservation signed the *Oak Ridge Accelerated Cleanup Plan Agreement* on June 18, 2002. The purpose of this Agreement was to describe a streamlined decision-making process to facilitate the accelerated implementation of cleanup activities, to resolve the current Oak Ridge Reservation Federal Facility Agreement milestone dispute, and to establish future actions needed to complete the plan for accelerated cleanup.

- The second, the *Oak Ridge Reservation Compliance Order*, was signed on September 26, 1995, by DOE and the Tennessee Department of Environment and Conservation, to enforce treatment of mixed low-level wastes and transuranic 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*, was signed by DOE and the Environmental Protection Agency on October 28, 1996, to establish a framework for treatment of polychlorinated biphenyl-contaminated wastes under the Toxic Substances Control Act. This agreement requires substantive annual progress in disposition of Polychlorinated Biphenyl contaminated waste at Oak Ridge.

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 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 after 2017.

Interdependencies

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

- *Other DOE Sites:* Disposition of Oak Ridge waste is dependent on the Nevada National Security Site, Energy Solutions (formerly known as Envirocare Clive, Utah facility), and the Waste Isolation Pilot Plant.
- *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-l600 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 seven different prime contracts to implement its on-site cleanup strategy:

- Oak Ridge Environmental Management Cleanup Contract.
- The Transuranic Waste Treatment Contract.
- The U-233 Downblend Contract.
- K-33 Demolition Contract.
- Bethel Valley Burial Grounds Contract.
- ORNL Small Facilities D&D Contract.
- ORNL Hot Cell 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, and making the K-27 Building demolition ready by the end of 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. Foster Wheeler Environmental Corporation has constructed the Transuranic Waste Processing Facility and has begun the processing of transuranic waste. The original fixed-price contract was converted to a cost-plus-fixed-fee contract in September 2006 and novated to a small business, EnergX, in 2008. This contract was re-competed and awarded to a small business, Wastren Advantage Incorporated, in 2009.

U-233 Downblend Contract: The contract for U-233 downblending and Building 3019 shutdown was awarded to Isotek Systems, LLC in October, 2003. The original contract was awarded when the project was being managed by the Office of Nuclear Energy and included the extraction of U-233 daughter products for research in medical applications. 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. The contract is a cost reimbursement contract that encompasses three phases. Phase I is the planning and design which includes a fixed-fee provision. Phase II is project implementation which includes both performance-based fee and fixed-fee provisions. Phase III is Building 3019 shutdown which includes a fixed fee provision. In addition, several Indefinite Delivery/Indefinite Quantity (IDIQ) tasks have been awarded to complete specific cleanup work.

Data as of December 2010:

Contractor	Base Period Current Period	Total Value	Contract Description	Contract Type
Bechtel Jacobs Company	12/18/1997 – 12/31/2011	$4.4B	Oak Ridge cleanup contract. 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.	Cost plus Fixed Fee
Energy Solutions	06/10/2004 – 1/31/11	$18M	DOE Complex Wide Contract for the Disposal of Mixed Low Level Waste streams generated by DOE Sites	Firm Fixed Unit Price Indefinite Delivery Indefinite Quantity
Wastren Advantage Inc	12/01/2009 – 01/16/2013	$160M	Management of the Oak Ridge Reservation's contact-handled and remote-handled TRU waste at the TRU Waste Processing Facility.	Cost Plus Award Fee
LATA-SHARP Remediation Services LLC	04/06/2010 – 11/01/2012	$71M	Demolition and removal of Building K-33 at East Tennessee Technology Park	Firm Fixed Price (IDIQ)
Isotek Systems LLC	10/09/2003-09/30/11	$164.3M	Building 3019 Construction for Uranium 233 Downblending. 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.	Cost Plus Fixed Fee
Hot Cells Safety and Ecology Corporation	3/30/10 – 9/30/11	$51M	Deactivation, demolition and disposition of Building 3026 C/D hot cells, and to remove and disposition legacy material from Buildings 2026 and 3038 in preparation for D&D at the Oak Ridge National Laboratory	Firm Fixed Price (IDIQ)
Central Campus Facilities Safety and Ecology Corporation	3/9/10 – 6/22/11	$16.1M	Deactivation, Demolition, and Removal of multiple buildings at the Oak Ridge National Laboratory	Firm Fixed price (IDIQ)
Bethel Valley Burial Grounds LATA-Sharp Remediation Services	09/18/09 – 02/14/11	$10.2M	Remediate Solid Waste Storage Area (SWSA) 1 and SWSA 3 in Bethel Valley at the Oak Ridge National Laboratory (ORNL)	Firm Fixed price (IDIQ)

Cleanup Benefits

Near Term:

The cleanup actions will meet industrial use standards and eliminate the potential exposure of the public to hazardous and radioactive contamination.

Longer Term:

Closure of the East Tennessee Technology Park site is the next complex-wide opportunity for the EM Program to eliminate a major environmental liability. In addition, there will be benefits for the Oak Ridge communities that are derived from completing the cleanup of the site, such as protecting public health and safety.

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 and mitigate off-site releases.

Direct maintenance and repair at the East Tennessee Technology Park is estimated to be $40,574,000 in FY 2012.

Detailed Justification

(dollars in thousands)

	FY 2010 Current Appropriation	FY 2012 Request
OR-0100 / Oak Ridge Reservation Community & Regulatory Support (Defense)	**6,253**	**6,409**

This PBS is within the Defense Environmental Cleanup appropriation.

This PBS 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.

(dollars in thousands)

FY 2010 Current Appropriation	FY 2012 Request

In FY 2010, the following activities were completed:

- Continued 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.
- Continued activities by the Site Specific Advisory Board sponsored by DOE-EM to assist in public participation activities.

In FY 2012, 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.

Key Accomplishments (FY 2010)/Planned Milestones (FY 2012)

- Continue activities by the SSAB sponsored by DOE-EM to assist in public participation activities. (FY 2010)
- Provide financial support to TN for conducting annual oversight, monitoring, and reporting. (FY 2010)
- Site Specific Advisory Board (September 2012)
- State of Tennessee (TDEC) will conduct oversight, monitoring and reporting on OREM cleanup. (September 2012)

OR-0011Z / Downblend of U-233 in Building 3019 38,900 0

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) prepare the material for disposal. Disposing of the U-233 inventory 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

(dollars in thousands)

FY 2010 Current Appropriation	FY 2012 Request

inventory.

The Defense Nuclear Facilities Safety Board issued Recommendation 97-1, *Safe Storage of Uranium-233,* has identified concerns related to long-term storage of the inventory in Building 3019. In addition, the U-233 Project received approval of the performance baseline (Critical Decision 2) and limited construction/dismantling (Critical Decision 3A) on May 25, 2007.

In FY 2010, the following activities were completed:

- Conducted required surveillance and maintenance activities at Building 3019 to maintain a safe condition.
- Maintained compliance with requirements at the appropriate waste disposal site for U-233, which requires Category 1 Security and compliance with10 Code of Federal Regulations 830 and 835.

In FY 2012, the following activities are planned:

- Continue required surveillance and maintenance activities at Building 3019 to maintain a safe condition (using $17.5M of uncosted carryover funds).

Key Accomplishments (FY 2010)/Planned Milestones (FY 2012)

- Continue Design for construction of annex and building 3019 modifications (FY 2010)
- Continue surveillance and maintenance at U-233 to maintain a safe condition (FY 2010)
- Conduct required surveillance and maintenance for the 3019 Complex to maintain a safe condition. (September 2012)

OR-0013B / Solid Waste Stabilization and Disposition-2012	**43,996**	**99,000**

This PBS is within the Defense Environmental Cleanup appropriation.

This PBS 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 Oak Ridge Reservations transuranic waste and the management of waste stored at East Tennessee Technology Park.

(dollars in thousands)

FY 2010 Current Appropriation	FY 2012 Request

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 2010, the following activities were completed:

- Continued the Resource Conservation and Recovery Act closure fieldwork and submission of Resource Conservation and Recovery Act /Toxic Substances Control Act closure plan to Environmental Protection Agency and State.
- Operated Central Neutralization Facility for treatment of Toxic Substances Control Act Incinerator discharges and contaminated groundwater.
- Continued shipment of Polychlorinated Biphenyls contaminated waste in accordance with the State Compliance Agreement and Federal Facility Compliance Agreement.
- Continued processing contact-handled and remote-handled to Transuranic Waste Processing Facility to meet Site Treatment Plan milestones.
- Prepared transuranic waste for certification, shipment, and disposal at Waste Isolation Pilot Plant.
- Managed and stored mixed low-level waste in compliance with regulations.
- A portion of the scope of work typically covered in this project was executed with American Recovery and Reinvestment Act funding.

In FY 2012, the following activities are planned:

- Maintain regulatory safety basis documents and permits and operate waste storage facilities at East Tennessee Technology Park.
- Complete decommissioning of Central Neutralization Facility.
- Continue processing contact-handled and remote-handled to Transuranic Waste Treatment Facility to meet Site Treatment Plan milestones.
- Prepare transuranic waste for certification, shipment, and disposal at Waste Isolation Pilot Plant.
- Continue construction of the transuranic sludge processing facility buildouts.
- Manage storage and transfer of transuranic waste bound for the Transuranic Waste Processing Center.
- Operate Hexavalent Chromium Water treatment system.
- Initiate retrieval, treatment, packaging, and shipment for disposal of Solid Waste Storage Area 5N waste.

Key Accomplishments (FY 2010)/Planned Milestones (FY 2012)

- Continue disposition of the ETTP legacy PCB Federal Facility Compliance Agreement waste (FY 2010)
- Manage and store Mixed Low Level Waste in compliance with regulations (FY 2010)

(dollars in thousands)

	FY 2010 Current Appropriation	FY 2012 Request

- Toxic Substances Control Act Incinerator (FY 2010)
- Complete processing cumulative total of 221 cu m of RH waste (September 2012)
- Complete processing cumulative total of ~163 cu m of CH waste (September 2012)
- Manage and store MLLW in compliance at the RCRA storage facility (September 2012)
- Complete project final design documents and procurements for Sludge Buildout (September 2012)

OR-0031 / Soil and Water Remediation-Offsites	**0**	**3,000**

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. 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 2010, the following activities were completed:

- No activities were planned.

In FY 2012, the following activities are planned:

- Complete excavation, transportation and disposal of contaminated soils, in accordance with consent decree issued by the state of Tennessee to characterize and remediate the Screen Arts site.

Key Accomplishments (FY 2010)/Planned Milestones (FY 2012)

- Complete Field Construction - Screen Arts (September 2012)

(dollars in thousands)

	FY 2010 Current Appropriation	FY 2012 Request
OR-0041 / Nuclear Facility D&D-Y-12	**36,700**	**30,000**

This PBS is within the Defense Environmental Cleanup appropriation.

This PBS 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 2010 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 1.7 million cubic yards, with a final proposed build out capacity of 2.2 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 includes environmental monitoring of soils, sediments, surface water, and groundwater throughout the Oak Ridge Reservation, in order to effectively perform cleanup actions, is included in the PBS scope.

In FY 2010, the following activities were completed:

- Operated Environmental Management Waste Management Facility and other Oak Ridge Reservation Landfills to receive wastes from demolition and remedial activities in accordance with Department of Energy Order requirements for groundwater and surface water monitoring, including Environmental Management Waste Management Facility waste acceptance criteria attainment

(dollars in thousands)

FY 2010 Current Appropriation	FY 2012 Request

activities.

- Complied with legal agreements between the DOE, United States Environmental Protection Agency, Region 4, and the State of Tennessee, environmental laws and regulations, and DOE Order requirements for Environmental Management Waste Management Facility operations; groundwater and surface water monitoring, surveillance and maintenance of waste sites and inactive facilities and annual remediation effectiveness report.
- Initiated Y-12 site EM facilities decontamination & decommissioning and legacy waste removal
- Continued payments to Environmental Management Waste Management Facility perpetual care fund in accordance with a consent order with the State of Tennessee.
- Initiated expansion of Cell 6 at the Environmental Management Waste Management Facility to increase capacity from 1.7 to 2.2 million cubic yards.
- Supported the compliance agreement with the State of Tennessee for disposition of regulated waste currently stored in K-1065.
- A portion of the scope of work typically covered in this project was executed with American Recovery and Reinvestment Act funding.

In FY 2012, the following activities are planned:

- Operate Environmental Management Waste Management Facility and other Oak Ridge Reservation Landfills to receive wastes from demolition and remedial activities 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.
- Comply with legal agreements between the DOE, United States Environmental Protection Agency, Region 4, and the State of Tennessee, environmental laws and regulations, and DOE Order requirements for Environmental Management Waste Management Facility operations; groundwater and surface water monitoring, surveillance and maintenance of waste sites and inactive facilities and annual remediation effectiveness report.
- Continue operations of the Oak Ridge Reservation landfills to support disposal of sanitary waste and building debris from environmental cleanup and DOE program activities on the Oak Ridge Reservation.
- Support Research & Development for Mercury Integration Project and advanced monitoring systems.

Key Accomplishments (FY 2010)/Planned Milestones (FY 2012)

- Submit Water Resources Restoration Program RER to Regulators for Approval (FY 2010)
- Submit EMWMF WAC Attainment Capacity Assurance Report (CARAR) to Regulators for Approval (FY 2010)
- Continue management, surveillance, and maintenance of EM Facilities. (FY

(dollars in thousands)

	FY 2010 Current Appropriation	FY 2012 Request

2010/September 2012)

- Continue operation of the Environmental Management Waste Management Facility to support EM cleanup (FY 2010)
- Continue operation of the Oak Ridge Reservation landfills to support Oak Ridge Operations (FY 2010/September 2012)
- Fund the Perpetual Care Fee for the Environmental Management Waste Management Facility (FY 2010)
- Receive and dispose of all CERCLA waste sent to EMWMF from cleanup projects. (September 2012)

OR-0042 / Nuclear Facility D&D-Oak Ridge National Laboratory	**51,299**	**44,000**

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.

This PBS 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 2010, the following activities were completed:

- Continued Data Quality Objective sessions and initiate soil characterization activities and soil excavation for Oak Ridge National laboratory Soils and Sediments Project.
- Continued Acquisition Planning and Baseline development to support Critical Decision 2/3 for capital asset projects within the Integrated Facilities Disposition Program.
- Monitored groundwater and surface water in accordance with the Melton Valley and Bethel Valley Records of Decision.
- Performed surveillance and maintenance for Environmental Management inactive facilities and reactors at the Oak Ridge National Laboratory to maintain a safe and compliant condition.
- Maintained liquid, gaseous and process waste operations systems in support of the missions of the Office of Science and the Office of Environmental Management.
- A portion of the scope of work typically covered in this project was executed with American Recovery and Reinvestment Act funding.

(dollars in thousands)

FY 2010 Current Appropriation	FY 2012 Request

In FY 2012, the following activities are planned:

- Maintain Liquid, gaseous and process waste operations systems in support of the Office of Science and Environmental Management missions.
- Perform Surveillance and Maintenance required by the Melton Valley Comprehensive Environmental Response Compensation and Liability Act Record of Decision and for inactive facilities and reactors at the Oak Ridge National Laboratory.
- Monitor groundwater and surface water in accordance with the Melton Valley and Bethel Valley Records of Decision.
- Continuation of coolant salt removal at Molten Salt Reactor Experiment in accordance with enforceable milestone commitments established under the Federal Facility Agreement.
- Deactivation and Decommissioning of contaminated isotope facilities at Oak Ridge National Laboratory in compliance with Federal Facility Enforceable Agreement Milestones.
- Continue necessary planning and characterization activities and baseline development to support Critical Decision 2/3 for capital asset projects within the Integrated Facilities Disposition Program.
- Support Research & Development for Transformational Characterization Technologies and Remote Systems for Equipment Removal and Dismantlement.

Key Accomplishments (FY 2010)/Planned Milestones (FY 2012)

- Continue management, surveillance, and maintenance of EM Facilities. (FY 2010)
- Provide regulatory completion ops of the Oak Ridge National Laboratory Process waste Collection/Transfer System (FY 2010)
- Submit BV D&D Isotopes Facilities WHP to the regulators (March 2012)
- Treat and Dispose of all waste transferred to the ORNL Waste Treatment Facility (September 2012)

OR-0043 / Nuclear Facility D&D-East Tennessee Technology Park (Defense)	**1,900**	**100**

This PBS is within the Defense Environmental Cleanup appropriation.

This PBS, 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 PBS 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 2010 Current Appropriation	FY 2012 Request

In FY 2010, the following activities were completed:

- Conducted surveillance and maintenance on East Tennessee Technology Park defense facilities to ensure safety.

In FY 2012, the following activities are planned:

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

Key Accomplishments (FY 2010)/Planned Milestones (FY 2012)

- Continue minimal necessary surveillance and maintenance on ETTP defense facilities to ensure safety (FY 2010)
- S&M activities will be preformed to ensure that facilities are ETTP are safe and compliant (September 2012)

OR-0040 / Nuclear Facility D&D-East Tennessee Technology Park (D&D Fund) **212,800** **182,747**

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

This PBS 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 165 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.

(dollars in thousands)

FY 2010 Current Appropriation	FY 2012 Request

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

In FY 2010, the following activities were completed:

- Maintained East Tennessee Technology Park in a safe and secure condition.
- Submitted the Predominately Uncontaminated Facilities and Low Risk Low Complexity Phase Construction Completion Reports to the regulators.
- Conducted base operations activities at the East Tennessee Technology Park to provide infrastructure and support to the cleanup project.
- Excavated and disposed of the K-1070B Burial Ground.
- Removed tie lines in support of decontamination and decommissioning activities at East Tennessee Technology Park.
- Completed K-1093 pad removal
- Completed K-770 soils remediation.
- Initiated demolition of Warehouse row facilities.
- Conducted fieldwork in support of the Site wide Record of Decision treatability study - Phase I.
- Completed K-25 Building West Wing and wall demolition.

In FY 2012, the following activities are planned:

- Maintain East Tennessee Technology Park in a safe and secure condition.
- Continue base operations activities at the East Tennessee Technology Park to provide infrastructure and support to the cleanup project.
- Continue characterization of East Wing (including Tc99 area) and development of the Waste Handling Plan in support of East Wing gaseous diffusion equipment removal and demolition.
- Continue High Risk Equipment removal in the East Wing.
- Waste Handling Plan and removal of gaseous diffusion equipment for the North End of K-25.
- Complete National Historical Preservation Act negotiations and begin demolition of the North End.
- Begin demolition of remaining high risk Poplar Creek facilities, in accordance with the milestone.
- Support Research & Development for Mercury Integration Project and advanced monitoring systems.
- Support Research & Development for Transformational Characterization Technologies and Remote Systems for Equipment Removal and Dismantlement.

Key Accomplishments (FY 2010)/Planned Milestones (FY 2012)

- Predominately Uncontaminated Facilities Phase Construction Completion Reports (FY 2010)
- Submit the FY 2009 Earned Value Phase Construction Completion Reports to the regulators (FY 2010)

(dollars in thousands)

	FY 2010 Current Appropriation	FY 2012 Request

- Continue base ops activities at ETTP to provide infrastructure and support to the cleanup project (FY 2010)
- Continue surveillance and maintenance on ETTP facilities incl K-25/27 buildings to maintain a safe condition (FY 2010)
- Submit ETTP Remaining Facilities Main Plan Waste Handling Plan (March 2012)
- Perform demo preparation on East/North Wing of K-25 (September 2012)
- Base operating activities at ETTP to provide infrastructure and support to the cleanup project (September 2012)
- Submit Poplar Creek Phase Construction Completion Reports to the regulators (September 2012)
- Surveillance and maintenance activities will be performed to ensure ETTP is safe and compliant (September 2012)

OR-0102 / East Tennessee Technology Park Contract/Post-Closure Liabilities/Administration	**12,200**	**18,500**

This PBS is within the Uranium Enrichment Decontamination and Decommissioning Fund in FY 2010. Beginning in FY 2012, this PBS is within the Defense Environmental Cleanup appropriation.

This PBS 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 2010, the following activities were completed:

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

In FY 2012, the following activities are planned:

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

Key Accomplishments (FY 2010)/Planned Milestones (FY 2012)

- Post Retirement Life, Med Benefits & Pension (September 2012)

Total, Oak Ridge	**404,048**	**383,756**

Explanation of Funding Changes

	FY 2012 vs. FY 2010 Current Approp. ($000)
Defense Environmental Cleanup	
Community, Regulatory and Program Support	
OR-0100 / Oak Ridge Reservation Community & Regulatory Support (Defense)	
▪ No significant change.	156
OR-0102 / East Tennessee Technology Park Contract/Post-Closure Liabilities/Administration	
▪ Increase reflects additional costs associated with long-term contractor obligations including post-retirement life, medical and disability benefits for support Oak Ridge enrichment facility programs.	6,300
Oak Ridge	
OR-0011Z / Downblend of U-233 in Building 3019	
▪ Decrease reflects planned use of $17.5M of uncosted carryover to support safety activities in 2012, pending final alternatives evaluation to proceed with revised path forward.	-38,900
OR-0013B / Solid Waste Stabilization and Disposition-2012	
▪ Increase reflects resumption of base funding for Transuranic Waste Processing Facility accelerated scope for receipt, processing, and repackaging of contact-handled and remote-handled waste previously funded under the American Reinvestment Recovery in FY 2010 and in FY 2011.	55,004
OR-0031 / Soil and Water Remediation-Offsites	
▪ Increase reflects funding for the regulatory requirement to perform remedial activities at the Screen Arts site.	3,000
OR-0041 / Nuclear Facility D&D-Y-12	
▪ Decrease reflects completion of the final build out at the Environmental Management Waste Management Facility.	-6,700
OR-0042 / Nuclear Facility D&D-Oak Ridge National Laboratory	
▪ Decrease reflects replacement of a Molten Salt Reactor milestone with a Salt Removal Strategy Plan milestone following negotiations with the regulators.	-7,299
OR-0043 / Nuclear Facility D&D-East Tennessee Technology Park (Defense)	
▪ Decrease reflects decline in surveillance and maintenance activities at the Centrifuge Facilities complex.	-1,800
Uranium Enrichment Decontamination and Decommissioning Fund	
OR-0040 / Nuclear Facility D&D-East Tennessee Technology Park (D&D Fund)	
▪ Decrease reflects completion of contract transition activities and completion of some pre-demolition activities in the North End and East Wing of the K-25 building.	-30,053
Total, Oak Ridge	**-20,292**

Paducah

Funding Schedule by Activity

	(Dollars in Thousands)	
	FY 2010 Current Appropriation	FY 2012 Request
Defense Environmental Cleanup		
Community, Regulatory and Program Support		
Paducah Gaseous Diffusion Plant		
PA-0102 / Paducah Contract/Post-Closure Liabilities/Administration	0	1,534
PA-0103 / Paducah Community and Regulatory Support	0	2,580
Subtotal, Paducah Gaseous Diffusion Plant	0	4,114
Non-Defense Environmental Cleanup		
Gaseous Diffusion Plants		
Paducah Gaseous Diffusion Plant		
PA-0011 / NM Stabilization and Disposition-Paducah Uranium Facilities Management	248	1,369
PA-0011X / NM Stabilization and Disposition-Depleted Uranium Hexafluoride Conversion	40,243	51,071
Subtotal, Paducah Gaseous Diffusion Plant	40,491	52,440
Uranium Enrichment Decontamination and Decommissioning Fund		
Paducah		
Paducah Gaseous Diffusion Plant		
PA-0013 / Solid Waste Stabilization and Disposition	0	7,115
PA-0040 / Nuclear Facility D&D-Paducah	0	70,665
Subtotal, Paducah Gaseous Diffusion Plant	0	77,780
D&D Activities		
Paducah Gaseous Diffusion Plant		
PA-0013 / Solid Waste Stabilization and Disposition	13,218	0
PA-0040 / Nuclear Facility D&D-Paducah	98,345	0
PA-0102 / Paducah Contract/Post-Closure Liabilities/Administration	2,236	0
PA-0103 / Paducah Community and Regulatory Support	2,647	0
Subtotal, Paducah Gaseous Diffusion Plant	116,446	0
Total, Uranium Enrichment Decontamination and Decommissioning Fund	116,446	77,780
Total, Paducah	156,937	134,334

In FY 2012, EM will be consolidating EM Headquarters policy and oversight activities, community and regulatory support and contract/post closure activities across the EM complex into a single control point. The consolidation of these activities into a single control point will allow for greater transparency and accountability of overhead activities but will also provide flexibility during the year of execution. While

these activities are being consolidated into a single control point, the individual activities will continue to be displayed within the site chapters of the EM budget. In addition, a site control level is being instituted within the Uranium Enrichment Decontamination and Decommissioning Appropriation.

The funding table below provides a comparable display of the impacted activities and a comparable display will be continued throughout this budget chapter to aid in budget review.

Funding Schedule by Activity

	(Dollars in Thousands)	
	FY 2010 Current Appropriation	FY 2012 Request
Defense Environmental Cleanup		
Community, Regulatory and Program Support		
Paducah Gaseous Diffusion Plant		
PA-0102 / Paducah Contract/Post-Closure Liabilities/Administration (D&D Fund)	2,236	1,534
PA-0103 / Paducah Community and Regulatory Support (D&D Fund)	2,647	2,580
Subtotal, Paducah Gaseous Diffusion Plant	4,883	4,114
Non-Defense Environmental Cleanup		
Gaseous Diffusion Plants		
Paducah Gaseous Diffusion Plant		
PA-0011 / NM Stabilization and Disposition-Paducah Uranium Facilities Management	248	1,369
PA-0011X / NM Stabilization and Disposition-Depleted Uranium Hexafluoride Conversion	40,243	51,071
Subtotal, Paducah Gaseous Diffusion Plant	40,491	52,440
Uranium Enrichment Decontamination and Decommissioning Fund		
Paducah		
Paducah Gaseous Diffusion Plant		
PA-0013 / Solid Waste Stabilization and Disposition	13,218	7,115
PA-0040 / Nuclear Facility D&D-Paducah	98,345	70,665
Subtotal, Paducah Gaseous Diffusion Plant	111,563	77,780
Total, Paducah	156,937	134,334

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. As a result, the mission of the site has transitioned from primarily enrichment operations to shared missions with environmental cleanup, waste management, depleted uranium conversion, deactivation and decommissioning, and long-term stewardship. It is assumed that the United States Enrichment Corporation will continue commercial gaseous diffusion operations beyond 2013.

Site Description

Approximately 3,400 acres that is located in rural western Kentucky.

Site Cleanup Strategy/Scope of Cleanup

- Maintain a safe, secure, and compliant posture;
- Support high priority groundwater remediation;
- Deactivate and decommission excess facilities:
- Disposition transuranic, mixed, and low-level waste;
- Support soil and groundwater remediation;
- Convert and disposition depleted uranium hexafluoride.

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 is currently working with the Kentucky Department for Environmental Protection and the United States Environmental Protection Agency, Region 4, to further define which projects can be sequenced, while optimizing resources and utilizing a risk-based approach, to ensure timely environmental cleanup and minimize workforce impacts.

In addition, Paducah completed construction of the depleted uranium hexafluoride conversion facility. DOE anticipates the depleted uranium hexafluoride conversion operations to continue 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 FY 2040 to FY 2052.

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 4 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, in compliance with 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.

Critical Site 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:

- DOE 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.

- 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.

Interdependencies

Dependent upon the Nevada National Security Site and commercial waste disposal sites for low-level, and mixed low-level waste disposal.

Contract Synopsis

Data as of December 2010

Contractor	Base Period Current Period	Total Value	Contract Description	Contract Type
LATA/Environmental Services of Kentucky/Paducah Remediation	4/22/2010-7/21/2015	$268M	Paducah Remediation	Cost Plus Award Fee

Swift & Staley Mechanical Contractors	12/16/2009-3/15/2015	$60.7M	Paducah Infrastructure Support Services	Cost Plus Award Fee
Uranium Disposition Services, LLC	8/29/2002-2/28/2011	$637M	Design, construction and operate Depleted Uranium Hexafluoride Conversion Facilities at Portsmouth and Paducah	Hybrid Cost Plus Contract Fixed /Incentive/Award Fee Elements

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 $4,390,000.

Detailed Justification

(dollars in thousands)

	FY 2010 Current Appropriation	FY 2012 Request
PA-0011 / NM Stabilization and Disposition-Paducah Uranium Facilities Management	**248**	**1,369**

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

This PBS 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 2010, the following accomplishments were completed:

- Conducted safe and compliant surveillance and maintenance of inactive facilities.
- Inspected and maintained polychlorinated biphenyl collection and containment systems.
- Conducted cleanup, sampling and disposal of polychlorinated biphenyl spills.

In FY 2012, the following activities are planned:

- Ensure safety and services continue regarding mission critical facilities and infrastructure.
- Continue field activities associated with the polychlorinated biphenyl collection and containment troughing system in the cascade buildings (C-331, C-333, C-335, and C-337).

Key Accomplishments (FY 2010)/Planned Milestones (FY 2012)

- Inspect and maintain the polychlorinated biphenyl collection and containment system. (FY 2010/September 2012)

PA-0011X / NM Stabilization and Disposition-Depleted Uranium Hexafluoride Conversion	**40,243**	**51,071**

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

(dollars in thousands)

FY 2010 Current Appropriation	FY 2012 Request

Approximately 700,000 metric tons of depleted uranium hexafluoride are stored in 60,000 cylinders 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 Paducah 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 and cylinders will be initially stored on-site and ultimately sent to a disposal facility, and the hydrogen fluoride co-products will be sold on the commercial market.

This PBS also includes surveillance and maintenance of all cylinders during conversion of the existing stockpile which will take about 25 years. The conversion facility contractor assumed responsibility for maintenance and surveillance of all depleted uranium hexafluoride cylinders in FY 2005.

Construction of the facility was completed in December 2008. Testing and commissioning activities continue in FY 2011, with hot operations expected to commence in second quarter FY 2011.

In FY 2010, the following accomplishments were completed:

- Continued cylinder surveillance and maintenance, to keep existing material in a safe, stable condition.
- Initiated systems testing, and integrated systems of the DUF6 Project Conversion facility.
- Completed the operational readiness review.

In FY 2012, the following activities are planned:

- Conduct cylinder surveillance and maintenance, to keep existing material in a safe stable condition.
- Maintain safe DUF6 conversion operations at full capacity.
- Package 18,000 metric tons of depleted uranium for disposition.

Key Accomplishments (FY 2010)/Planned Milestones (FY 2012)

- Complete integrated systems testing. (FY 2010)
- Package 18,000 metric tons of depleted uranium for disposition. (September 2012)

(dollars in thousands)

	FY 2010 Current Appropriation	FY 2012 Request
PA-0102 / Paducah Contract/Post-Closure Liabilities/Administration	**2,236**	**1,534**

This PBS is within the Uranium Enrichment Decontamination and Decommissioning Fund in FY 2010. Beginning in FY 2012, this PBS is within the Defense Environmental Cleanup appropriation.

This PBS 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 2010, the following accomplishments were completed:

- Provided support to DOE and Department of Justice for all investigations and litigation.
- Provided 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.

In FY 2012, 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.

Key Accomplishments (FY 2010)/Planned Milestones (FY 2012)

- Provided support for investigations and litigations (FY 2010)
- Provide support for investigations and litigations (September 2012)

PA-0103 / Paducah Community and Regulatory Support	**2,647**	**2,580**

This PBS is within the Uranium Enrichment Decontamination and Decommissioning Fund in FY 2010. Beginning in FY 2012, this PBS is within the Defense Environmental Cleanup appropriation.

This PBS scope supports 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. 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

(dollars in thousands)

FY 2010 Current Appropriation	FY 2012 Request

Environmental Response, Compensation, and Liability Act. Additionally, this project scope also supports the activities performed by the Paducah Citizens Advisory Board.

In FY 2010, the following accomplishments were completed:

- Continued support to the Citizens Advisory Board to assist in the public participation activities required by the Comprehensive Environmental Response, Compensation, and Liability Act.
- Ensured requirements are met regarding the grants.

In FY 2012, 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 grants.

Key Accomplishments (FY 2010)/Planned Milestones (FY 2012)

- Provide financial support to the Commonwealth of Kentucky as required by the Agreement-in-Principle (FY 2010/September 2012)
- Provide financial support to the State for all FFA administrative activities. (FY 2010)
- 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 (September 2012)

PA-0013 / Solid Waste Stabilization and Disposition 13,218 7,115

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

This PBS 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

(dollars in thousands)

FY 2010 Current Appropriation	FY 2012 Request

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 m^3 (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 2010, the following accomplishments were completed:

- Completed tie-in of cells 4&5 at C-746-U Landfill.
- Conducted surveillance and maintenance of the waste storage buildings.
- Continued operation and maintenance of the C-746-U onsite sanitary landfill.
- Disposed of 746 cubic meters of newly generated waste.

In FY 2012, the following activities are planned:

- Continue disposition of newly generated waste.
- Complete construction of cells 6 & 7 for the C-746-U on site sanitary landfill.
- Continue disposal of low-level and mixed low-level waste.

Key Accomplishments (FY 2010)/Planned Milestones (FY 2012)

- Dispose of 746 cubic meters of newly-generated waste (FY 2010/September 2012)
- Operate and maintain the C-746-U landfill and various onsite waste storage facilities. (FY 2010)

PA-0040 / Nuclear Facility D&D-Paducah **98,345** **70,665**

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

This PBS 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)

(dollars in thousands)

FY 2010 Current Appropriation	FY 2012 Request

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 PBS 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 2010, the following accomplishments were completed:

- Continued decontamination and decommissioning of C-340, C-410, and C-746-A East End Smelter.
- Conducted pump and treat operations and environmental surveillance, monitoring, and reporting.
- Continued trichloroethylene source removal of C-400 groundwater remediation and dissolved Phase Plume actions.
- Completed remediation of surface water operable units and three inactive soils facilities.

In FY 2012, the following activities are planned:

- Complete demolition of C-340 and C-410 complexes.
- Dispose of all demolition waste from C-340 and C-410 complexes and complete site restoration activities.

(dollars in thousands)

FY 2010 Current Appropriation	FY 2012 Request

- Complete construction of Southwest Plume sources treatment system and initiate operations.
- Complete C-400 groundwater plume project (removal of trichloroethylene Dense Non-Aqueous Phase Liquids).

Key Accomplishments (FY 2010)/Planned Milestones (FY 2012)

- C-410 Systems Removal: Start Stabilization & Removal of Uranium Powder System (FY 2010)
- C-400 Phase I Construction: Complete Treatment System Connections (FY 2010)
- C-400 Phase I Construction: Begin Construction Acceptance Testing (FY 2010)
- C-400 Phase I Construction: Complete Construction Acceptance Testing (FY 2010)
- C-410: Complete Electrical System Component Removal & Packaging of Sector 3 Prohibited Items (FY 2010)
- C-410 Systems Removal: Resolve Walkdown Concerns for Uranium Powder (FY 2010)
- C-410 Systems Removal: Receive approval for Statement of Work for Vacuum - Characterization (FY 2010)
- C-410 Systems Removal: Complete Sampling Paper Insulated Lead Covered Cables for Removal in Sector 4 (FY 2010)
- C-410 Systems Removal: Stabilization & Removal of HVAC - Demob - Zone 45 Complete (FY 2010)
- C-410 Systems Removal: Stabilization & Removal of HVAC - Demobilization - Zone 45 Complete (FY 2010)
- C-410 Systems Removal: Complete Application of Fixative to Slab at Building C-410A (October 2011)
- Issue Outyear Environmental Monitoring D1 Site Management Plan to Regulators (November 2011)
- C-410 Systems Removal: Complete Flowable Backfill Pits / Basement at Building C-410 (November 2011)
- C-410 Systems Removal: Complete Post Demolition Activities at Building C-410 Complete (December 2011)
- Issue Outyear Solid Waste Management Unit 3 Remedial Design Work Plan/Schedule to EPA/KY (D1) (December 2011)
- C-410 Systems Removal: Complete Post Demolition Activities at Building C-420 Complete (March 2012)
- C-410 Systems Removal: Complete Post Demolition Fencing at Building C-420 Complete (April 2012)

(dollars in thousands)

	FY 2010 Current Appropriation	FY 2012 Request
▪ Submit D1 Record of Decision-Site-Wide Soils OU Remedial Action to the US EPA & KY (September 2012)		
Total, Paducah	**156,937**	**134,334**

Explanation of Funding Changes

	FY 2012 vs. FY 2010 Current Approp. ($000)
Defense Environmental Cleanup	
Community, Regulatory and Program Support	
PA-0102 / Paducah Contract/Post-Closure Liabilities/Administration	
▪ Decrease due to slightly lower level of litigation requirements in FY 2012.	-702
PA-0103 / Paducah Community and Regulatory Support	
▪ No significant change.	-67
Non-Defense Environmental Cleanup	
Gaseous Diffusion Plants	
PA-0011 / NM Stabilization and Disposition-Paducah Uranium Facilities Management	
▪ Increase needed in FY 2012 because funding in FY 2010 was supplemented by carryover from FY 2009 and has been utilized. Funding is required in FY 2012 to support the polychlorinated biphenyl remediation activities.	1,121
PA-0011X / NM Stabilization and Disposition-Depleted Uranium Hexafluoride Conversion	
▪ Increase supports continuation of ramp up (including increase in staff) necessary for hot functional testing, leading to full operations of the DUF6 Conversion Facility.	10,828

	FY 2012 vs. FY 2010 Current Approp. ($000)
Uranium Enrichment Decontamination and Decommissioning Fund	
Paducah	
PA-0013 / Solid Waste Stabilization and Disposition	
▪ Decrease reflects the completion of disposition of all legacy waste (that was generated by activities at the Paducah Gaseous Diffusion Plant prior to 1993) at offsite disposal facilities.	-6,103
PA-0040 / Nuclear Facility D&D-Paducah	
▪ Decrease reflects completion of enhanced groundwater plume monitoring system and optimization of the Northwest plume pump and treat system.	-27,680
Total, Paducah	**-22,603**

Portsmouth

Funding Schedule by Activity

	(Dollars in Thousands)	
	FY 2010 Current Appropriation	FY 2012 Request
Defense Environmental Cleanup		
Community, Regulatory and Program Support		
Portsmouth Gaseous Diffusion Plant		
PO-0103 / Portsmouth Contract/Post-Closure Liabilities/Administration	0	792
PO-0104 / Portsmouth Community and Regulatory Support	0	1,041
Subtotal, Portsmouth Gaseous Diffusion Plant	0	1,833
Non-Defense Environmental Cleanup		
Gaseous Diffusion Plants		
Portsmouth Gaseous Diffusion Plant		
PO-0011 / NM Stabilization and Disposition-Portsmouth Other Uranium Facilities Management	8,641	0
PO-0011X / NM Stabilization and Disposition-Depleted Uranium Hexafluoride Conversion	51,753	48,148
Subtotal, Portsmouth Gaseous Diffusion Plant	60,394	48,148
Uranium Enrichment Decontamination and Decommissioning Fund		
Portsmouth		
Portsmouth Gaseous Diffusion Plant		
PO-0013 / Solid Waste Stabilization and Disposition	0	21,982
PO-0040 / Nuclear Facility D&D-Portsmouth	0	221,660
Subtotal, Portsmouth Gaseous Diffusion Plant	0	243,642
D&D Activities		
Portsmouth Gaseous Diffusion Plant		
PO-0013 / Solid Waste Stabilization and Disposition	14,871	0
PO-0040 / Nuclear Facility D&D-Portsmouth	216,288	0
PO-0103 / Portsmouth Contract/Post-Closure Liabilities/Administration	614	0
PO-0104 / Portsmouth Community and Regulatory Support	631	0
Subtotal, Portsmouth Gaseous Diffusion Plant	232,404	0
Total, Uranium Enrichment Decontamination and Decommissioning Fund	232,404	243,642
Total, Portsmouth	292,798	293,623

In FY 2012, EM will be consolidating EM Headquarters policy and oversight activities, community and regulatory support and contract/post closure activities across the EM complex into a single control point. The consolidation of these activities into a single control point will allow for greater transparency and accountability of overhead activities but will also provide flexibility during the year of execution. While these activities are being consolidated into a single control point, the individual activities will continue

to be displayed within the site chapters of the EM budget. In addition, a site control level is being instituted within the Uranium Enrichment Decontamination and Decommissioning Appropriation.

The funding table below provides a comparable display of the impacted activities and a comparable display will be continued throughout this budget chapter to aid in budget review.

Funding Schedule by Activity

	(Dollars in Thousands)	
	FY 2010 Current Appropriation	FY 2012 Request
Defense Environmental Cleanup		
Community, Regulatory and Program Support		
Portsmouth Gaseous Diffusion Plant		
PO-0103 / Portsmouth Contract/Post-Closure Liabilities/Administration (D&D Fund)	614	792
PO-0104 / Portsmouth Community and Regulatory Support (D&D Fund)	631	1,041
Subtotal, Portsmouth Gaseous Diffusion Plant	1,245	1,833
Non-Defense Environmental Cleanup		
Gaseous Diffusion Plants		
Portsmouth Gaseous Diffusion Plant		
PO-0011 / NM Stabilization and Disposition-Portsmouth Other Uranium Facilities Management	8,641	0
PO-0011X / NM Stabilization and Disposition-Depleted Uranium Hexafluoride Conversion	51,753	48,148
Subtotal, Portsmouth Gaseous Diffusion Plant	60,394	48,148
Uranium Enrichment Decontamination and Decommissioning Fund		
Portsmouth		
Portsmouth Gaseous Diffusion Plant		
PO-0013 / Solid Waste Stabilization and Disposition	14,871	21,982
PO-0040 / Nuclear Facility D&D-Portsmouth	216,288	221,660
Subtotal, Portsmouth Gaseous Diffusion Plant	231,159	243,642
Total, Portsmouth	292,798	293,623

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.

Site Description

The Site is located approximately 75 miles south of Columbus, Ohio.

Site Cleanup Strategy/Scope of Cleanup

- Maintain a safe, secure, and compliant posture;
- Convert and dispose of depleted uranium hexafluoride;
- Deactivate gaseous diffusion plants;
- Support full-scale decontamination and decommissioning of gaseous diffusion plants;
- Dispose of all low-level and mixed low-level waste;
- Dispose of all excess material;
- Support groundwater trichloroethylene source removal.

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 objective 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 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 and 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).

The EM lifecycle planning estimate range is 2044 to 2052.

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.

Current cleanup activities are conducted in accordance with Resource Conservation and Recovery Act and Comprehensive Environmental Response, Compensation, and Liability Act requirements (although Portsmouth is not on the National Priorities List). DOE and the Ohio Environmental Protection Agency have reached agreement on the regulatory framework for final decontamination and decommissioning of the facilities under the Comprehensive Environmental Response, Compensation, and Liability Act and ongoing environmental media cleanup activities under Resource Conservation and Recovery Act (Consent Order and Consent Decree, respectively). A draft Remedial Investigation/Feasibility Study Work Plan has established the planned cleanup activities.

Critical Site Uncertainties and Assumptions

- It is assumed that the United States Enrichment Corporation will support the timely return of leased gaseous diffusion plant facilities to the DOE for decontamination and decommissioning. United States Enrichment Corporation has signed an agreement to transfer the process buildings and other facilities. A 60-day notice was also given for facility walk-downs to begin transfer.

- DOE is evaluating the regulatory transition from the Nuclear Regulatory Commission to the DOE which 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, disposal/recycling options for the decontamination and decommissioning materials waste, and stakeholder/regulator acceptance.

Interdependencies

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

Contract Synopsis

Data as of December 2010

Contractor	Base Period Current Period	Total Value	Contract Description	Contract Type
Western-EnergX Mission Support , LLC	12/22/2009 – 3/15/2015	$42.45M	Portsmouth Facility Support Services	Cost Plus Award Fee
LATA/Parallax Portsmouth	1/10/2005 – 3/7/2011	$480M	Portsmouth Remediation	Cost Plus Incentive Fee
Restoration Services Inc.	6/25/2008 - 9/30/2013	$67M	Portsmouth Environmental Technical Services Support Contract	Time and Materials Task Order

Contractor	Base Period Current Period	Total Value	Contract Description	Contract Type
Uranium Disposition Services LLC	8/29/2002- 2/28/2011	$637M	Design, construction and operate Depleted Uranium Hexafluoride Conversion Facilities at Portsmouth and Paducah	Hybrid cost plus contract – fixed/incentive/ award fee elements
Fluor B&W Portsmouth, LLC	3/28/2011-3/27/2016	$2.1B	Portsmouth Gaseous Diffusion Plant D&D	Cost Plus Incentive Fee
United States Enrichment Corporation	8/01/2001– 3/7/2011	$816M	Cold Standby and Cold Shutdown of the Portsmouth Gaseous Diffusion Plant	Cost Reimbursement with/Fixed Fee

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. 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 $3,664,000.

Detailed Justification

(dollars in thousands)

	FY 2010 Current Appropriation	FY 2012 Request
PO-0011 / NM Stabilization and Disposition-Portsmouth Other Uranium Facilities Management	**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 2010, the following accomplishments were completed:

- Continued disposition of highly enriched uranium.

In FY 2012, the following activities are planned:

- Project concluded.

Key Accomplishments (FY 2010)/Planned Milestones (FY 2012)

- Performed polychlorinated biphenyl activities in process buildings to maintain compliance. (FY 2010)

PO-0011X / NM Stabilization and Disposition-Depleted Uranium Hexafluoride Conversion	**51,753**	**48,148**

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 PBS 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. In FY 2010, testing and commissioning activities continued, and hot functional testing/hot operations were initiated. Ramp up and full

(dollars in thousands)

FY 2010 Current Appropriation	FY 2012 Request

operations commenced in FY 2011.

In FY 2010, the following accomplishments were completed:

- Conducted training, qualifications, and evaluation of facility staff and operators and completed Operational Readiness Review for the DUF6 Conversion project.
- Conducted cylinder maintenance and surveillance to maintain existing material in safe condition.

In FY 2012, the following activities are planned:

- Operate the DUF6 conversion facility and package 13,500 metric tons of depleted uranium for disposal.
- Continue cylinder maintenance and surveillance to maintain existing material in safe condition.

Key Accomplishments (FY 2010)/Planned Milestones (FY 2012)

- Completed integrated systems testing. (FY 2010)
- Complete processing of approximately 13,500 metric tons of DUF6 material. (September 2012)

PO-0103 / Portsmouth Contract/Post-Closure Liabilities/Administration **614** **792**

This PBS is within the Uranium Enrichment Decontamination and Decommissioning Fund in FY 2010. Beginning in FY 2012, this PBS is within the Defense Environmental Cleanup appropriation.

The scope of this PBS 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 2010, the following accomplishments were completed:

- Continued to provide defense against legal claims filed against the Government and its contractors.
- Conducted record searches in support of legal claims, DOE and Department of Justice

(dollars in thousands)

FY 2010 Current Appropriation	FY 2012 Request

investigations/studies, Freedom of Information Act requests, and requests from both state and Federal regulatory and elected officials.

In FY 2012, 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.

Key Accomplishments (FY 2010)/Planned Milestones (FY 2012)

- Defended against legal claims filed against the Government's contractors. (FY 2010)
- Defend against legal claims filed against the Government's contractors (September 2012)

PO-0104 / Portsmouth Community and Regulatory Support **631** **1,041**

This PBS is within the Uranium Enrichment Decontamination and Decommissioning Fund in FY 2010. Beginning in FY 2012, this PBS is within the Defense Environmental Cleanup appropriation.

This PBS 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 2010, the following accomplishments were completed:

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

In FY 2012, the following activities are planned:

- Continue to support oversight activities of the Ohio Environmental Protection Agency.

(dollars in thousands)

FY 2010 Current Appropriation	FY 2012 Request

- Continue support for the designated Site Specific Advisory Board.
- Continue Payments-In-Lieu-Of-Taxes to Ohio's Pike County.

Key Accomplishments (FY 2010)/Planned Milestones (FY 2012)

- Supported Ohio EPA grant activities associated with Portsmouth Consent Decree. (FY 2010)
- Support the Ohio EPA grant activities for Portsmouth Consent Decree (September 2012)

PO-0013 / Solid Waste Stabilization and Disposition 14,871 21,982

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

This PBS scope includes storage, characterization, treatment, and disposition of legacy waste generated by activities at the Portsmouth Gaseous Diffusion Plant. These activities will reduce risks and storage costs. The primary waste streams are low-level, mixed low-level, Toxic Substances Control Act low-level, hazardous, sanitary, and newly generated wastes. Disposal of legacy waste is critical to completing cleanup of the site.

In FY 2010, the following accomplishments were completed:

- Characterized, treated, and disposed of newly-generated waste, and continued disposition of uranium materials stored at the Uranium Management Center, Building X-744-G.
- A portion of the scope of work typically covered in this project was executed with ARRA funding.

In FY 2012, the following activities are planned:

- Continue disposition of uranium materials, including surplus low enriched natural and depleted uranium, from Fernald, Hanford, and several universities no longer used in research programs and material generated during cascade operations stored at the Uranium Management Center.
- Characterize, treat, and dispose of any newly generated waste.

Key Accomplishments (FY 2010)/Planned Milestones (FY 2012)

- Submitted Annual Report for the Site Treatment Plan to the Ohio Environmental Protection Agency. (FY 2010/December 2011)
- Completed disposition of small cylinders. (FY 2010)

(dollars in thousands)

	FY 2010 Current Appropriation	FY 2012 Request
▪ Submit Annual TSCA/FFCA Compliance Report to US EPA (FY 2010/June 2012)		
PO-0040 / Nuclear Facility D&D-Portsmouth	**216,288**	**221,660**

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

This PBS scope includes remedial actions due to contamination resulting from the plant's historical uranium enrichment operations, facility decontamination and decommissioning, and surveillance and maintenance activities at the Portsmouth Gaseous Diffusion Plant. The Department has selected Fluor-B&W Portsmouth LLC for the decontamination and decommissioning of the Portsmouth Gaseous Diffusion Plant. 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 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 2010, the following accomplishments were completed:

- Conducted environmental monitoring and reporting for groundwater, surface water, sediment, biological, vegetation, and associated sample collection to maintain compliance.
- Completed investigation of seven-unit plume in Quadrant II.
- Performed removal activities to reduce certain deposits in accordance with the deposit removal plan.
- Performed deactivation activities on specified returned facilities and leased areas.
- Conducted removal of interior building excess DOE materials and remove chemical and hazardous materials.
- Conducted site-wide infrastructure surveillance and maintenance.

(dollars in thousands)

FY 2010 Current Appropriation	FY 2012 Request

In FY 2012, the following activities are planned:

- Complete preparatory work and removal of excess equipment/hazardous materials from X-326, X-330, and X-333.
- Complete removal of process motors from X-326.
- Begin removal of X-326 process equipment.

Key Accomplishments (FY 2010)/Planned Milestones (FY 2012)

- Awarded decontamination and decommissioning and surveillance and maintenance contract. (FY 2010)
- Began Transition to the D&D contract. (FY 2010)
- Continued D&D of gaseous diffusion plant ancillary facilities and systems. (FY 2010)
- Conduct environmental monitoring and reporting for groundwater/surface water/sediment/vegetation. (September 2012)
- Continue actions to remediate contaminated soil and groundwater media. (September 2012)

Total, Portsmouth	**292,798**	**293,623**

Explanation of Funding Changes

	FY 2012 vs. FY 2010 Current Approp. ($000)
Defense Environmental Cleanup	
Community, Regulatory and Program Support	
PO-0103 / Portsmouth Contract/Post-Closure Liabilities/Administration	
▪ No significant change.	178
PO-0104 / Portsmouth Community and Regulatory Support	
▪ Increase supports a new grant to develop a public end state vision, and recommended solutions to energy and environmental problems.	410
Non-Defense Environmental Cleanup	
Gaseous Diffusion Plants	
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	
▪ Decrease reflects that additional support for the lead plant start up was no longer necessary, and reflects transition to full-scale operations of the DUF6 Conversion Facility.	-3,605
Uranium Enrichment Decontamination and Decommissioning Fund	
Portsmouth	
PO-0013 / Solid Waste Stabilization and Disposition	
▪ Reflects increase necessary to complete disposition at offsite disposal facilities, including the Nevada National Security Site, of uranium materials stored in the Uranium Management Center from universities and other sites that no longer utilize material in research programs and from cascade operations at the site.	7,111
PO-0040 / Nuclear Facility D&D-Portsmouth	
▪ Increase supports removal of process motors from X-326 and an increased focus on decontamination and decommissioning activities subsequent to facility turnover.	5,372
Total, Portsmouth	**825**

Richland

Funding Schedule by Activity

	(Dollars in Thousands)	
	FY 2010 Current Appropriation	FY 2012 Request
Defense Environmental Cleanup		
Hanford Site		
2012 Accelerated Completions		
RL-0011 / NM Stabilization and Disposition-PFP	85,321	0
RL-0012 / SNF Stabilization and Disposition	124,729	0
RL-0041 / Nuclear Facility D&D-River Corridor Closure Project	331,317	0
Subtotal, 2012 Accelerated Completions	541,367	0
2035 Accelerated Completions		
RL-0013C / Solid Waste Stabilization and Disposition- 2035	128,154	0
RL-0030 / Soil and Water Remediation-Groundwater/Vadose Zone - 2035	199,689	0
RL-0040 / Nuclear Facility D&D-Remainder of Hanford - 2035	98,930	0
RL-0100 / Richland Community and Regulatory Support	21,940	0
Subtotal, 2035 Accelerated Completions	448,713	0
Central Plateau Remediation		
RL-0011 / NM Stabilization and Disposition-PFP	0	0
RL-0012 / SNF Stabilization and Disposition	0	0
RL-0013C / Solid Waste Stabilization and Disposition- 2035	0	0
RL-0030 / Soil and Water Remediation-Groundwater/Vadose Zone - 2035	0	0
Subtotal, Central Plateau Remediation	0	0
Hanford Site		
RL-0011 / NM Stabilization and Disposition-PFP	0	48,458
RL-0012 / SNF Stabilization and Disposition	0	112,250
RL-0013C / Solid Waste Stabilization and Disposition- 2035	0	143,897
RL-0030 / Soil and Water Remediation-Groundwater/Vadose Zone - 2035	0	222,285
RL-0040 / Nuclear Facility D&D-Remainder of Hanford - 2035	0	56,288
RL-0041 / Nuclear Facility D&D-River Corridor Closure Project	0	330,534
Subtotal, Hanford Site	0	913,712
River Corridor and Other Cleanup Operations		
RL-0040 / Nuclear Facility D&D-Remainder of Hanford - 2035	0	0
RL-0041 / Nuclear Facility D&D-River Corridor Closure Project	0	0
RL-0100 / Richland Community and Regulatory Support	0	0
Subtotal, River Corridor and Other Cleanup Operations	0	0
Total, Hanford Site	990,080	913,712
Community, Regulatory and Program Support		
Richland		
RL-0100 / Richland Community and Regulatory Support	0	20,338
Total, Defense Environmental Cleanup	990,080	934,050

Non-Defense Environmental Cleanup		
Fast Flux Test Reactor Facility D&D		
Fast Flux Test Reactor Facility D&D		
RL-0042 / Nuclear Facility D&D-Fast Flux Test Facility Project	7,652	2,703
Total, Richland	997,732	936,753

In FY 2012, EM will be consolidating EM Headquarters policy and oversight activities, community and regulatory support and contract/post closure activities across the EM complex into a single control point. The consolidation of these activities into a single control point will allow for greater transparency and accountability of overhead activities but will also provide flexibility during the year of execution. While these activities are being consolidated into a single control point, the individual activities will continue to be displayed within the site chapters of the EM budget. In addition, EM is proposing to transfer existing PBSs from the currently established control points of Central Plateau Remediation and River Corridor and Other Cleanup Operations to a single control point at the Hanford site in order to provide the site with flexibility to achieve its overall mission.

The funding table below provides a comparable display of the impacted activities and a comparable display will be continued throughout this budget chapter to aid in budget review.

Funding Schedule by Activity

	(Dollars in Thousands)	
	FY 2010 Current Appropriation	FY 2012 Request
Defense Environmental Cleanup		
Hanford Site		
RL-0011 / NM Stabilization and Disposition-PFP	85,321	48,458
RL-0012 / SNF Stabilization and Disposition	124,729	112,250
RL-0013C / Solid Waste Stabilization and Disposition- 2035	128,154	143,897
RL-0030 / Soil and Water Remediation-Groundwater/Vadose Zone - 2035	199,689	222,285
RL-0040 / Nuclear Facility D&D-Remainder of Hanford - 2035	98,930	56,288
RL-0041 / Nuclear Facility D&D-River Corridor Closure Project	331,317	330,534
Subtotal, Hanford Site	968,140	913,712
Community, Regulatory and Program Support		
RL-0100 / Richland Community and Regulatory Support	21,940	20,338
Total, Defense Environmental Cleanup	990,080	934,050
Non-Defense Environmental Cleanup		
Fast Flux Test Reactor Facility D&D		
RL-0042 / Nuclear Facility D&D-Fast Flux Test Facility Project	7,652	2,703
Total, Richland	997,732	936,753

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 Hanford mission is now primarily site cleanup and environmental restoration to protect the Columbia River.

Site Description

- The Hanford Site occupies an area of 1,533 square kilometers (586 square miles).

- The environmental cleanup and closure work remains in the Central Plateau, the River Corridor, the Fast Flux Test Facility, and the 600 Area.

Central Plateau:
The Central Plateau includes approximately 75 square miles in the central portion of the Hanford Site. It is also known as the 200 Area. The Central Plateau is the location of chemical processing facilities used to separate and recover plutonium for use in nuclear weapons and several other valuable isotopes. For the purpose of future planning and development of regulatory documents, the Central Plateau has been divided into an Inner Area and Outer Area. The Inner Area (~10 square miles) contains most of the land that is currently defined as 200 East and 200 West Areas. The Inner Area is anticipated to be the final footprint of Hanford, and will be dedicated to long-term waste management and containment of residual contamination. The Outer Area (~65 square miles) is the portion of the Central Plateau outside the boundary of the Inner Area. Cleanup of the Outer Area is planned to be completed in the 2015 to 2020 time period.

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: The B Plant, deactivated in 1998, and the Plutonium Uranium Extraction Plant that was shut down in 1997. The Effluent Treatment Facility, the Treated Effluent Disposal Facility, the Waste Encapsulation and Storage Facility, and the Canister Storage Facility used in waste management activities are located in this 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 area includes the Central Waste Complex, the Waste Receiving and Processing Facility, the Environmental Restoration and Disposal Facility, Plutonium Finishing Plant complex and three processing plants: T Plant, U Plant and S Plant which are three canyon facilities that were previously deactivated. The majority of highly contaminated equipment has been removed from the Plutonium Finishing Plant and demolition of the main building will commence in FY 2012. Installation of the large 200 West Pump and Treat Facility will be completed in FY 2011 and startup of the facility will continue in FY 2012. Most retrievably stored suspect transuranic waste has been retrieved and shipped to the Waste Isolation Pilot Plant.

River Corridor

The River Corridor includes the nine production reactors and associated facilities in the 100 Area 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.

- 100 K-West & K-East Areas: K-West and K-East reactors were operated from 1955 to 1970 and 1971 respectively. The K-East reactor is being prepared for interim safe storage, facility demolition and waste site remediation is in progress, and the remaining fuel and sludge are being removed from the fuel storage basin.

- 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. The building demolition and remediation of waste sites is in progress.

- 100 D & DR Areas: D Reactor was one of the three original reactors built during 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 and waste site remediation is in progress.

- 100 H Area: H Reactor operated in 1949 to 1965. H Reactor was placed into interim safe storage in October 2005 and remediation of waste sites is in progress.

- 100 F Area: F Reactor went into production in February 1945 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 remediated 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 fuel fabrication and processing capability. Demolition of buildings and remediation of waste sites is in progress.

Fast Flux Test Facility

- The Fast Flux Test Facility is located in the 400 Area of the Hanford Site. 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 the Columbia Generating Station, a nuclear power plant operated by Energy Northwest on land leased

from the DOE. The 600 Area also hosts utility corridors and remediation sites, such as the 618-10 and 618-11 Burial Grounds.

Site Cleanup Strategy/Scope of Cleanup

- Cleanup of facilities and waste sites in the 100, 200, 300, 400, and 600 Areas.
- Retrieval of suspect transuranic waste for final disposition off-site.
- Decontamination and decommissioning of the Plutonium Finishing Plant.
- Completion of groundwater remediation.
- Safe and secure interim storage of special nuclear material and spent (used) nuclear fuel.

Site Completion (End State)

- The lifecycle planning estimate is 2050 to 2062.
- The Federal government is expected to maintain ownership of most of the site once cleanup is complete.
- 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.

Regulatory Framework

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. In October 2010, the Department of Energy and the Washington State Department of Ecology reached an agreement on revised timetables under the Tri-party Agreement and a new Consent Decree to be filed in the federal district court for cleanup on the Hanford Site.

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 by September 2016.
- M-091-41A, Complete Retrieval of Non-Caisson Remote-Handled Waste by December 2016.
- M-091-42, Complete the Treatment of Small Container Contact-Handled Mixed Low Level Waste by December 2017.
- M-091-46, Complete the Certification of Small Container Contract-Handled Transuranic Mixed Waste by December 2017.

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 Identified in the Removal Action Work Plan(s) for the 300 Area 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-015-00D, 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 Technetium 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 December 2016.
- 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 suspect transuranic waste is to be processed and an estimated 10,000 cubic meters shipped to the Waste Isolation Pilot Plant from the Hanford Site.

- Approximately 2,100 metric tons of spent (used) 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.

Contract Synopsis

Data as of December 2010

Contract	Base Period Current Period	Total Value	Contract Description	Contract Type
Advancemed Corp.	Base 3/8/2004 - 9/30/2006 Seven 1-Year Options FY07 Thru FY13	$141M	Occupational Medical Services for Hanford Site	Cost plus Award Fee
CH2MHill Plateau Remediation Co	5 Year Base 10/1/2008 - 9/30/2013 One 5-Year Option 10/1/2013 - 9/30/2018	$5.26B	Completion of Plutonium Finishing Plant, non-Tank Farm Waste Disposal Operations and complete Groundwater Characterization, Remediation and Surveillance and Maintenance	Cost plus Award Fee

Contract	Base Period Current Period	Total Value	Contract Description	Contract Type
Mission Support Alliance, LLC	5 Year Base 9/3/2008 - 9/30/2013 (Delayed Start 8/24/09) Five 1-Year Options 10/1/2013 – 9/30/2018	$3.0B	Comprehensive Infrastructure and Site Services for Richland and Office of River Protection including Safety and Security, Utilities, Business Management, Information Resources Management and Portfolio Management	Cost plus Award Fee
Johnson Controls Inc.	11/15/1996 - 11/14/2021	$160.7M	Energy Savings Performance Contract for Hanford Area 200	Fixed Price with Economic Price Adjustment
Unitech Services Group Inc.	Base 11/1/2003 - 10/31/2006 Seven 1-Year Options to 10/31/2013	$13.5M	Regulated and Non-Regulated Laundry Services	Fixed Price Fixed Unit Rates
Washington Closure LLC	3/23/2005 - 9/30/2015	$2.48B	River Corridor Cleanup	Cost plus Incentive Fee
Penser North America	Base 10/1/2009 - 9/30/2011 Three 1-Year Options to 9/30/2014	$1.5M	Workers Compensation Claims Administrative Services	Fixed Unit Price plus Award Fee

Cleanup Benefits

The legacy of Hanford's 40 years of nuclear weapons production for the nation's defense includes enormous quantities of spent (used) 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. Continued remediation of the waste sites and demolition of old facilities is required to prevent further contamination of the Columbia River due to contaminants leaching from the soils into the groundwater.

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.
Direct maintenance and repair estimate at the Richland Operations Office is $40,292,000.
Near Term

- Spent (Used) 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 was 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 has been reduced after the facility was 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 legacy 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 removal, demolition of the basins and ancillary facilities, and 100 K Area remediation.

- Complete conversion of K-East, K-West, 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.

Detailed Justification

(dollars in thousands)

	FY 2010 Current Appropriation	FY 2012 Request
RL-0100 / Richland Community and Regulatory Support	**21,940**	**20,338**

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 FY 2010, the following accomplishments were completed:

- Supported Washington and Oregon States emergency preparedness, environmental oversight, and other related activities.

- Supported Natural Resource Injury assessment activities required by Comprehensive Environmental Response, Compensation, and Liability Act regulations and the DOE Natural Resource Damage Assessment policy.

- Provided 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.

In FY 2012, the following activities are planned:

- Support Washington and Oregon States emergency preparedness, environmental oversight, and other related activities.

(dollars in thousands)

FY 2010 Current Appropriation	FY 2012 Request

- 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.

- Support Natural Resource Injury assessment activities required by Comprehensive Environmental Response, Compensation, and Liability Act regulations and the DOE Natural Resource Damage Assessment policy.

Key Accomplishments (FY 2010)/Planned Milestones (FY 2012)

- Continue to provide support to the Natural Resource Trustee Council and the Hanford Advisory Board. (FY 2010)
- Continue to support various programs such as Resource Conservation and Recovery Act mixed waste fee. (FY 2010)
- Reimburse the Department of Ecology and the Department of Health (September 2012)
- Support Washington and Oregon States emergency preparedness (September 2012)
- Support activities required by CERCLA regulations and DOE National Resource Damage Assessment policy (September 2012)

RL-0042 / Nuclear Facility D&D-Fast Flux Test Facility Project	**7,652**	**2,703**

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.

(dollars in thousands)

FY 2010 Current Appropriation	FY 2012 Request

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 2010, the following accomplishments were completed:

- Provided site-wide services for day-to-day operations of general utilities, fire department, and analytical services.
- Provided surveillance and maintenance activities necessary to ensure safety for Fast Flux Test Facility and support facilities.
- Provided support for the Tank Closure and Waste Management Environmental Impact Statement.

In FY 2012, the following activities are planned:

- Provide site-wide services for day-to-day operations of general utilities, fire department, and analytical services.
- Provide surveillance and maintenance activities necessary to ensure safety for Fast Flux Test Facility and support facilities.
- Provide support for the Tank Closure and Waste Management Environmental Impact Statement.

Key Accomplishments (FY 2010)/Planned Milestones (FY 2012)

- Maintain minimum safe surveillance and maintenance for Fast Flux Test Facility. (FY 2010)
- Provide surveillance and maintenance to ensure minimum safety for Fast Flux Test Facility (September 2012)

RL-0011 / NM Stabilization and Disposition-PFP	**85,321**	**48,458**

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

(dollars in thousands)

FY 2010 Current Appropriation	FY 2012 Request

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 Decommissioning & Decontamination - 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.

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

In FY 2010, the following accomplishments were completed:

- Provided 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 a safe and compliant condition.

- Provided program management, quality assurance; management assessments and corrective action development; regulatory compliance monitoring; performance assessment support; and records management.

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

- Continued decontamination and decommissioning of Plutonium Reclamation Facility and Americium Facility.

In FY 2012, the following activities are planned:

- Maintain Plutonium Finishing Plant nuclear safety; maintain, manage and administer radiological control, fire protection, occupational safety and health, and the training program.

- Provide administration and direction of Plutonium Finishing Plant support, baseline and project control, conduct of operations, facility property administration, maintenance of policies and procedures, occurrence reporting, quality assurance support, management assessment and corrective action development, regulatory compliance monitoring; performance assessment support; and records management.

(dollars in thousands)

FY 2010 Current Appropriation	FY 2012 Request

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

Key Accomplishments (FY 2010)/Planned Milestones (FY 2012)

- Complete Protected Area Closure Activities (FY 2010)
- Complete de-inventory of the Slightly Irradiated Fuel (FY 2010)
- Maintain Plutonium Finishing Plant Facilities in a Safe and Compliant Mode (September 2012)

RL-0012 / SNF Stabilization and Disposition **124,729** **112,250**

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

This PBS supports Richland's mission for accelerated clean up of the River Corridor through stabilization, removal, and off-shipment of nuclear materials including spent (used) nuclear fuel, radioactively contaminated sludge, water and debris from the K Basins. This PBS also supports K-West Basin removal. The scope of this project encompassed the removal, packaging, and transportation of approximately 2,100 metric tons of degrading spent (used) 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 K-West Basin will be removed from the basins and treated as remote-handled waste into its final disposal form, ready for permanent disposal off the Hanford site.

The end-state of this PBS is the removal of all spent (used) 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. 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 (used) 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.

In FY 2010, the following accomplishments were completed:

- Provided site-wide services of day-to-day operations of general utilities, fire department, and analytical services.
- Operated and maintained K-West Basin and associated structures in a safe and compliant manner

(dollars in thousands)

	FY 2010 Current Appropriation	FY 2012 Request

and supported required surveillance and maintenance activities.

- Obtained DOE approval of Sludge Treatment Project Phase 1, Critical Decision 1 for the Engineered Container and Settler Tube sludge.

- Continued sludge removal design and characterization sampling and testing of the Knockout Pots, Engineered Containers and Settler Tubes.

In FY 2012, the following activities are planned:

- Provide 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 and support required surveillance and maintenance activities.

- Complete Knock-Out Pot Disposition Subproject, which includes processing Knock-Out Pot material in Multiple Canister Overpacks and shipping to the Canister Storage Building for storage.

- Provide engineering, design, procurement to support continued work towards Critical Decision 2/3 for the Engineered Container/Settler Tube Sludge Disposition Subproject.

- Begin construction for the sludge containerization.

Key Accomplishments (FY 2010)/Planned Milestones (FY 2012)

- Continue K West Basin safe and compliant and fuel processing capabilities (September 2012)

- Package and Transfer Knock-Out Pot Sludge from the KW Basin to the Canister Storage Building (September 2012)

RL-0013C / Solid Waste Stabilization and Disposition- 2035	**128,154**	**143,897**

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

The scope of this PBS includes storage of irradiated 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.

This PBS includes packaging of EM legacy and non-legacy irradiated nuclear fuel and storage in the Canister Storage Building or 200 Area Interim Storage Area. This PBS also includes wet storage of

(dollars in thousands)

FY 2010 Current Appropriation	FY 2012 Request

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 low-level burial grounds will also be performed. About 24,000 cubic meters of suspect transuranic waste is to be processed and an estimated 10,000 cubic meters 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 51,000 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.

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 irradiated 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 2010, the following accomplishments were completed:

- Provided safe and compliant operations to treat mixed low-level waste, to perform transuranic waste repackaging activities under the American Recovery and Reinvestment Act, and to ship transuranic waste to the Waste Isolation Pilot Plant.

- Provided core management and expertise to ensure compliance with Tri-Party Agreement M-91 and scope performed under the American Recovery and Reinvestment Act.

- Maintained the Integrated Disposal Facility; performed solid waste activities; and provided safe operations to store low-level waste, mixed low-level waste, and transuranic waste at the Central Waste Complex and the Low Level Burial Grounds.

(dollars in thousands)

FY 2010 Current Appropriation	FY 2012 Request

- Provided operations and upgrades to treat Hanford site effluents; site-wide services for day-to-day operations of general utilities, fire department, and analytical services.
- Provided base operations to support safe and compliant interim storage of Irradiated Nuclear Fuel.
- Operated and maintained the Waste Encapsulation and Storage Facility and associated structures, operating systems, equipment, and monitoring systems.
- Supported transuranic waste retrieval capability under the American Recovery and Reinvestment Act in order to meet Tri-Party Agreement M-91-40.

In FY 2012, the following activities are planned:

- Maintain and upgrade T-Plant, maintain the Integrated Disposal Facility, the Waste Receiving and Processing Facility, and the Central Waste Complex in safe and compliant conditions.
- Maintain a viable waste management program to support all Hanford projects and operations and provided base operations for solid waste activities.
- Provide support for the Tank Closure and Waste Management Environmental Impact Statement.
- Treat and dispose liquid wastes from the generators and dispose of treated liquid effluents from the 200 Area Liquid Effluent Facility.
- Provide waste acceptance services, interface with regulators, and project management, risk management, planning, and baseline performance reporting. Also, provide administration and coordination of essential programs such as Transportation & Packaging, Emergency Preparedness, Quality Assurance, Corrective Action Management, Safety Basis development and implementation, and Criticality and Nuclear Safety programs.
- Provide site-wide services for day-to-day operations of general utilities, fire department, and analytical services; operations necessary to support safe and compliant interim storage of Irradiated Nuclear Fuel, which include operating and maintaining the Canister Storage Building and the 200 Area Interim Storage Area facilities, associated structures, operating systems, equipment and monitoring systems.
- Support interim storage of cesium and strontium capsules at the Waste Encapsulation and Storage Facility.

(dollars in thousands)

	FY 2010 Current Appropriation	FY 2012 Request

- Provide operations to support K-Basin sludge storage.

Key Accomplishments (FY 2010)/Planned Milestones (FY 2012)

- Continue to operate 200 Area Liquid Effluent Facility (FY 2010/September 2012)
- M-091-03 Submit Revised Hanford Site TRUM/MLLW PMP to Ecology (FY 2010)
- Continued base operations and minimal upgrades to treat Mixed Low Level and transuranic waste (FY 2010)
- Maintain base operations of the Low Level Waste and Mixed Low Level Waste disposal facilities (FY 2010)
- M-091-03F, Submit Annual Revision Of TRUM And MLLW Project Management Plan (PMP) to Ecology (June 2012)
- Continued base operations and minimal upgrades to treat MLLW and transuranic waste (September 2012)
- Provide safe and compliant solid waste facilities. (September 2012)

RL-0030 / Soil and Water Remediation-Groundwater/Vadose Zone - 2035	**199,689**	**222,285**

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, 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 an integrated Comprehensive Environmental Response, Compensation, and Liability Act and Resource Conservation and Recovery Act compliant network to address emerging groundwater plumes and remediation requirements to conduct site-wide groundwater monitoring; and 6) groundwater well drilling, maintenance, decommissioning; and 7)

(dollars in thousands)

FY 2010 Current Appropriation	FY 2012 Request

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, 2016. Groundwater completion activities will follow waste site closure activities through the 2024 time frame. By 2024, all existing unused wells will be physically decommissioned.

In FY 2010, the following accomplishments were completed:

- Provided site-wide services for day-to-day operations of general utilities, fire department, and analytical services.
- Continued integration of site-wide groundwater and vadose zone cleanup activities, groundwater contamination monitoring, operations, maintenance, and modifications of existing remediation systems; deployed chemical and biological treatment to select areas in support of final remedies and continued implementation the Deep Vadose Zone Treatability Testing Project.
- Completed Comprehensive Environmental Response, Compensation and Liability Act Remedial Investigation/Feasibility Study Process and Proposed Plan to obtain final Record of Decision for the 100 Area groundwater operable units.

In FY 2012, the following activities are planned:

- Provide site-wide services for day-to-day operations of general utilities, fire department, and analytical services.
- Continue integration of site-wide groundwater and vadose zone cleanup activities, groundwater contamination monitoring, and partial operations, maintenance, and necessary modifications of existing remediation systems, and deployment of chemical and biological treatment to select areas in support of final remedies.
- Complete Acceptance Test Plan, Operations Test Plan, and operational startup for new 100-HX Pump and Treat Facility and operational testing of the groundwater system for treating Tc-99 at S-SX tank farm.
- Begin Phase 1 operations of 200W pump and treat system.
- Conduct scientific applied research and technology development activities for field characterization of the vadose zone and cleanup options.

(dollars in thousands)

FY 2010 Current Appropriation	FY 2012 Request

- Expect to meet FY 2012 enforceable agreement milestones to include but are not limited to:
  - Continuing Remedial Investigation/Feasibility Study process to develop proposed plan for all 100 and 300 Areas' Operable Units.
  - Expanding current pump-and-treat system at 100-HR-3 Operable Unit.

Key Accomplishments (FY 2010)/Planned Milestones (FY 2012)

- Submit a draft Comprehensive Environmental Response, Compensation, and Liability Act Proposed Plan (FY 2010)
- M-037-01, Revised Closure Plan for Hexone Storage and Treatment Facility TSD unit. (FY 2010)
- Continue to construct groundwater wells to support existing pump and treat operations (FY 2010/September 2012)
- Initiate installation of 100-HR-3 Pump and Treat Environmental Remediation System at 100-D Area (FY 2010)
- Perform Remedial Investigation and Feasibility Study in support of 100-NR-2 Operable Unit (FY 2010)
- M-015-91A, Submit Feasibility Study Work Plan for the 200 West Area 1 operable unit (December 2011)
- M-016-111C Expand current pump-and-treat system at 100-HR-3 Operable Unit (December 2011)
- M-085-10A Submit Remedial Investigation/Feasibility Study Work Plan for B Plant Canyon to Ecology (December 2011)
- M-015-38B, Feasibility Study report and revised Proposed Plan waste sites in the outer area (April 2012)
- Continue RI/FS process to develop proposed plan for all 100 & 300 Area Operable Units (September 2012)
- M-015-110A, 200-DV-1 RCRA Facility Investigation/Corrective Measures Study & RI/FS work plan (September 2012)
- Support completion of the necessary characterization and supporting decision documentation (September 2012)
- Support necessary groundwater operations and maintenance (September 2012)

RL-0040 / Nuclear Facility D&D-Remainder of Hanford - 2035	**98,930**	**56,288**

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

This PBS scope includes implementation of various Hanford Site cleanup initiatives: cleanup of

(dollars in thousands)

FY 2010 Current Appropriation	FY 2012 Request

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.

In FY 2010, the following accomplishments were completed:

- Provided site-wide services for day-to-day operations of general utilities, fire department, and analytical services and steam for critical site heating systems.
- Provided 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.
- Managed surveillance and maintenance and waste site remediation activities (i.e., Environmental Safety and Health oversight, quality management, safety and job hazards analysis, technical support and integration of site activities).

In FY 2012, the following activities are planned:

- Provide site-wide services for day-to-day operations of general utilities, fire department, and analytical services and steam for critical site heating systems.
- Manage surveillance and maintenance (i.e., Environmental Safety and Health oversight, quality management, safety and job hazards analysis, technical support and integration of site activities).
- Provide funding for Richland direct contracts that provide steam for critical site heating systems, occupational medicine, Bonneville Power Administration electricity, litigation support and General Services Administration office space rent.

Key Accomplishments (FY 2010)/Planned Milestones (FY 2012)

- Maintain minimum safety and surveillance and maintenance services for the Central Plateau (FY 2010/September 2012)

(dollars in thousands)

	FY 2010 Current Appropriation	FY 2012 Request
RL-0041 / Nuclear Facility D&D-River Corridor Closure Project	**331,317**	**330,534**

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

The River Corridor Closure Project addresses the remediation of contaminated soils and facilities located in the geographic area consisting of over 210 square miles of the Hanford Site adjacent to the Columbia River in Richland, Washington. The project will also place the production reactors in an interim safe storage condition until a final decision is made addressing reactor disposition. Remediation activities are being conducted in accordance with Comprehensive Environmental Response, Compensation, and Liability Act Interim Action Records of Decision. The River Corridor is divided into four major sub-areas: (1) 100 Area, comprised of shutdown plutonium production reactors, support facilities, and burial grounds; (2) 300 Area, comprised of former reactor fuel fabrication, research and development, and support facilities; (3) the support complex in the 400 Area, comprised of a small number of former maintenance and storage facilities and waste sites located outside of the Fast Flux Test Facility reactor protected area; and (4) 600 Area, which includes two major burial grounds (618-10 and 618-11) located between the 100 and 300 Areas, and vacant land extending from the Columbia River to the Central Plateau in the middle of the Site. Wastes generated from remediation activities under this project are disposed of in the Environmental Restoration Disposal Facility in the 200 Area, managed as an operations activity under PBS RL-0041. The majority of work under this project is being performed by Washington Closure Hanford, LLC. Part of the 100 K Area work is being performed by CH2MHill under the Plateau Remediation Contract.

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 2010, the following accomplishments were completed:

- Provided site-wide services for day-to-day operations of general utilities, fire department, and analytical services; surveillance and maintenance of nuclear and support facilities in the 100, 300, and 400 Areas of the River Corridor and continued operations of specific key utilities (water, sewer electrical) in those same areas.

- Completed removal/remediation of 6 of 19 high priority surplus facilities in the 300 Area; 22 waste sites at the 100 B/C Area; 6 waste sites in the 300-FF-2; and disposition of 13 facilities.

- Disposed of 1,400,000 tons of waste at the Environmental Restoration Disposal Facility in support of Hanford Site cleanup-activities.

In FY 2012, the following activities are planned:

(dollars in thousands)

FY 2010 Current Appropriation	FY 2012 Request

- Operate the Environmental Restoration Disposal Facility in support of Hanford Site demolition and remediation activities.
- Complete the interim remedial actions for the 100 D and H Areas.
- Complete interim remedial actions for 100-IU-2 and 100-IU-6.
- Initiate remediation of the deep chromium contamination waste site 100-C-7.
- Continue interim remediation for all 300 area "inside the fence" waste sites north of Apple Street.
- Continue 105-N reactor interim safe storage.
- Complete the selected removal and/or remedial actions for 11 of the high priority facilities in the 300 Area.
- Continue Field remediation and facility disposition other areas along the Columbia River Corridor.
- Continue remediation of the 618-10 burial grounds.
- Complete deactivation and decommissioning of two buildings and removal of one soil site in the 100 K Area.
- Continue Interim Safe Storage of the K-East Reactor.

Key Accomplishments (FY 2010)/Planned Milestones (FY 2012)

- Complete Interim Remediation Actions At 100-B/C Area (FY 2010)
- Complete interim remedial actions for 6 specific wastes sites in the 300-FF-2 Operable Unit. (FY 2010)
- Complete disposition of 13 surplus facilities in the 300 and 100 Areas (FY 2010)
- Continue field remediation in the 100 K-Area (FY 2010)
- M-094-08, Comp. Selected Removal &/or Rem. Actions for 11 High Priority Facilities in the 300 Area (December 2011)
- M-016-47, Complete the Interim Remedial Actions for the 100 D Area. (December 2011)
- M-016-56, Complete the Interim Remedial Actions for 100-IU-2 and 100-IU-6. (February 2012)

(dollars in thousands)

	FY 2010 Current Appropriation	FY 2012 Request
Total, Richland	**997,732**	**936,753**

Explanation of Funding Changes

	FY 2012 vs. FY 2010 Current Approp. ($000)
Defense Environmental Cleanup	
Community, Regulatory and Program Support	
RL-0100 / Richland Community and Regulatory Support	
▪ Decrease associated with reduction in support for Washington and Oregon States emergency preparedness, environmental oversight, other related, and Natural Resource Injury Assessment activities.	-1,602
Hanford Site	
RL-0011 / NM Stabilization and Disposition-PFP	
▪ The decrease is the result of the completion of shipments of special (used) nuclear materials from Plutonium Finishing Plant in FY 2010 (-$20,352) and a reduction in facilities surveillance and maintenance, project management and site services due to specific decontamination and decommissioning activities being completed through the American Recovery and Reinvestment Act in FY 2011 (-$16,511).	-36,863
RL-0012 / SNF Stabilization and Disposition	
▪ Decrease results in reduced support for sludge removal activities; construction of sludge storage containers; and characterization work to sample and test Knockout Pots for sludge in the K-West basin.	-12,479
RL-0013C / Solid Waste Stabilization and Disposition- 2035	
▪ The increase supports the maintenance and planned upgrades at T Plant to support the storage of K Basin sludge removed under PBS RL-0012.	15,743
RL-0030 / Soil and Water Remediation-Groundwater/Vadose Zone - 2035	
▪ The increase supports the additional operations required for groundwater remediation systems in the Central Plateau and expects to meet enforceable agreement milestones for PBS RL-0030.	22,596
RL-0040 / Nuclear Facility D&D-Remainder of Hanford - 2035	
▪ Decrease reflects prioritization of Hanford site activities (-$4,000 for Central Plateau waste site remediation and -$38,642 for infrastructure projects) to support compliance requirements for other projects.	-42,642

	FY 2012 vs. FY 2010 Current Approp. ($000)
RL-0041 / Nuclear Facility D&D-River Corridor Closure Project	
▪ The decrease reflects completion of interim remedial actions in the 100 and 300 Areas.	-783
Non-Defense Environmental Cleanup	
Fast Flux Test Reactor Facility D&D	
RL-0042 / Nuclear Facility D&D-Fast Flux Test Facility Project	
▪ Decrease is associated with a reduction in requirements for fire systems resulting in a comparable reduction in surveillance and maintenance work.	-4,949
Total, Richland	**-60,979**

River Protection

Funding Schedule by Activity

	(Dollars in Thousands)	
	FY 2010 Current Appropriation	FY 2012 Request
Defense Environmental Cleanup		
Office of River Protection		
Tank Farm Activities		
ORP-0014 / Radioactive Liquid Tank Waste Stabilization and Disposition	406,600	521,391
Waste Treatment and Immobilization Plant		
ORP-0060 / Major Construction-Waste Treatment Plant	690,000	840,000
Total, Office of River Protection	1,096,600	1,361,391

Site Overview

The 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.

The Office of River Protection is responsible for the storage, retrieval, treatment, immobilization, and disposal of liquid tank waste and operation, maintenance, engineering, and construction activities in the 200 Area Tank Farms. 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 awaiting final disposal. The lower-hazard waste will be disposed in buried waste facilities on the Hanford site.

Site Description

- Located in eastern Washington State with an area of 586 square miles.
- During its 40 years of production approximately 74 tons of plutonium was produced.
- There are now 53 million gallons of radioactive waste in 177 underground storage tanks, as well as contaminated equipment and soils in 18 tank farms located on the Central Plateau.

Site Cleanup Strategy/Scope of Cleanup

Significant cleanup progress has been made on mitigating the risks at the site. For example,

- Completed the transfer and stabilization of liquid waste from single shelled tanks to safer double shelled tanks.

- Continue retrieval of solids and salt cake from single shell tanks. To date, seven tanks have been retrieved and an additional four have been retrieved to the limits of technology.

- Completed the Hanford integrated disposal facility for disposal of low level waste and mixed low activity waste.

- Completed installation of the T Farm Interim Surface Barrier.

- The draft Tank Closure and Waste Management Environmental Impact Statement has been completed and comment evaluation is under way.

- The Waste Treatment and Immobilization Plant is being constructed to immobilize the radioactive tank waste. It is the largest radioactive-chemical processing facility in the world. As of December 31, 2010, the Waste Treatment Plant construction is approximately 81 percent complete with design/engineering, approximately 53 percent with construction, and more than 50 percent complete overall.

- Determine necessary supplemental treatment technologies for treating a portion of the low activity waste.

- Develop transformational technologies that could reduce the life cycle cost associated with processing and disposing of Hanford's radioactive tank waste.

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.

Regulatory Framework

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. In October 2010, the Department of Energy and the Washington State Department of Ecology reached an agreement on revised timetables under the Tri-party Agreement and a new Consent Decree was filed in federal district court for cleanup of the Hanford Site.

- Complete construction of next interim barrier (SX Farm): 6/30/12.

- M-045-83 Complete the Closure of Waste Management Area C: 6/30/19.

- D-00B-01Complete retrieval of C Farm single-shell tanks: 9/30/14.

- M-045-81 Implement and complete remaining activities for C Farm Closure Demonstration Plan: 9/30/14.
- M-045-82 Submit complete permit modification requests for C Farm Closure: 9/30/15.
- D-00B-03 Initiate retrieval of tank wastes in at least 5 of 9 additional single-shell tanks: 12/31/17.
- D-00B-094 Complete retrieval of tank wastes from the 9 single-shell tanks: 9/30/22.

Critical Project 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, including:

- 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

Data as of December 2010

Contractor	Base Period Current Period	Total Value	Contract Description	Contract Type
Tank Operations Contract Washington River Protection Solutions, LLC DE-AC27-08RV14800	5 Year Base 10/1/2008 - 9/30/2012 Two Options 10/1/2012 – 9/30/2014 & 10/1/2014 – 09/30/2015	$7.1B	Tank Operations Contract Complete Maintenance, Operations and Construction Activities for the Retrieval, Storage and Disposition of treated Radioactive Waste	Cost Plus Award Fee

Contractor	Base Period Current Period	Total Value	Contract Description	Contract Type
Waste Treatment and Immobilization Plant Bechtel National, Inc. DE-AC27-01RV14136	12/11/2000 - 8/15/2019	$11.1B	Waste Treatment and Immobilization Plant Construction	Cost Plus Award Fee
222-S Analytical Lab Advanced Technologies and Laboratories International, Inc. DE-AC27-10RV15051	11/20/2009 – 1/2/2015	$48.7M	222-S Analytical Lab Services	Cost Plus Award Fee

Cleanup Benefits

The Office of River Protection's cleanup strategy is a risk-based approach that focuses on contamination sources that are the greatest contributors to risk. The cleanup focus will achieve 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. These Tank Farms include 177 underground storage tanks that contain approximately 190 million curies in approximately 53 million gallons of chemically hazardous radioactive waste from past processing operations, in addition to 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.

During Hanford's more than 40 years of production, highly radioactive waste was piped to underground tanks. In some cases small amounts of radioactive waste were discharged underground; uncontaminated and slightly contaminated liquids and cooling water were pumped to ditches and ponds; contaminated water 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. Forty percent of the approximately one billion curies of radioactivity within the DOE nuclear weapons complex resides at Hanford. These materials will be dealt with in a safe and protective manner.

Direct maintenance and repair at the Office of River Protection is estimated to be $33,583,000.

Detailed Justification

(dollars in thousands)

	FY 2010 Current Appropriation	FY 2012 Request
ORP-0014 / Radioactive Liquid Tank Waste Stabilization and Disposition	**406,600**	**521,391**

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 Statement has been 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, construct, and operate the 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.

- Operate treatment facilities to complete the tank waste program.

- Close 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.

(dollars in thousands)

FY 2010 Current Appropriation	FY 2012 Request

- Construct storage facilities where vitrified high-level waste canisters will be stored.
- Dispose 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 sludge 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 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 the 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 pre-treating and immobilizing the low activity waste.

In FY 2010, the following activities were completed:

(dollars in thousands)

FY 2010 Current Appropriation	FY 2012 Request

- Completed one Evaporator Campaign for space management.
- Initiated design and procurement activities to retrieve the next two single-shell tanks.
- Continued to perform single-shell tank integrity evaluations.
- Conducted double-shell tank space evaluation and provide necessary updates for continued safe storage.
- Operated the 222-S laboratory and 242-A evaporator.
- Removed hose-in-hose transfer lines.
- Completed installation of the TY Farm Interim Barrier.
- Initiated C Farm Closure Demonstration Plan.
- Conducted 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.
- Submitted Secondary Waste Treatment Critical Decision-0 Package.
- Submitted Supplemental Treatment Critical Decision-0 Package.

In FY 2012, the following activities are planned:

- Expect to meet FY 2012 enforceable agreement milestones, to include but are not limited to:
    - AY/AZ Ventilation Upgrade Design, Procurement, Construction, Startup & Readiness.
    - Waste Treatment Plant Commissioning Plan Review, Joint Test Group Participation, Cold Commissioning Performance Testing Oversight, and Remotability Test Oversight.
    - Supplemental Treatment alternatives (including Next Generation Melters).
    - Sodium Mitigation.
- Complete Bulk Retrieval from one C Farm Single-Shell Tanks.
- Complete Hard Heel Removal from three C Farm Single-Shell Tanks.
- Complete design, procurement and retrieval activities for the next three C Farm Single-Shell Tanks

(dollars in thousands)

FY 2010 Current Appropriation	FY 2012 Request

- Complete Installation of MARS technology in Tank C-105.
- Complete Construction of SX Interim Barrier.
- Initiate AW and AZ Farm Feed Delivery System including design and procurement.
- Initiate SY 102 Feed Delivery System including design and procurement.
- Continue to perform Single-Shell Tank integrity evaluations and implement expert panel recommendations.
- Conduct Single-Shell Tank structural analysis.
- Complete one Evaporator Campaign for space management.
- Continue removal of Hose-in Hose Transfer lines.
- Obtain Critical Decision-1 for the Interim Hanford Storage Facility.
- Issue Interim Hanford Storage Conceptual Design Report.
- Obtain Critical Decision-1 for the Secondary Waste Treatment/Effluent Treatment Facility.
- Issue Conceptual Design report for the Secondary Waste/Effluent Treatment Facility.
- Continue Immobilized Low-Activity Waste glass testing.
- Continue development of third retrieval technology in support of purposed Consent Decree/Tri Party Agreement requirements.
- Complete A350 Catch Tank Pumping.
- 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.

Key Accomplishments (FY 2010)/Planned Milestones (FY 2012)

- Complete one evaporator campaign for space management (FY 2010/September 2012)
- Conduct Double-Shell Tank Space Evaluation (FY 2010)

(dollars in thousands)

	FY 2010 Current Appropriation	FY 2012 Request
▪ Continue to perform additional single-shell tank integrity evaluations (FY 2010) ▪ Initiate design and procurement activities to retrieve the next C Farm single-shell tank (FY 2010) ▪ Operate the 222-S laboratory and 242-A evaporator (FY 2010/September 2012) ▪ Perform Surveillance, monitoring and corrective maintenance of the Tank Farm facilities (FY 2010) ▪ Remove Hose-in-Hose Transfer Lines (FY 2010/September 2012) ▪ Submit System Plan Update (October 2011) ▪ Complete Installation of 1 of 4 New Interim Barriers (SX Farm) (June 2012) ▪ Complete A350 Catch Tank Pumping (September 2012) ▪ Complete Bulk Retrieval from one C Farm Single-Shell Tank (September 2012) ▪ Complete Hard Heel Removal from three C Farm Single-Shell Tanks (September 2012) ▪ Complete design and procurement activities for the next three C Farm Single-Shell Tanks (September 2012) ▪ Conduct Single-Shell Tank structural analysis (September 2012) ▪ Continue ILAW glass testing (September 2012) ▪ Issue Conceptual Design report for the Secondary Waste/Effluent Treatment Facility (September 2012) ▪ Issue Interim Hanford Storage Conceptual Design Report (September 2012) ▪ Obtain Critical Decision (CD) 1 for the Interim Hanford Storage Facility (September 2012) ▪ Obtain Critical Decision (CD) 1 for the Secondary Waste Treatment/Effluent Treatment Facility (September 2012)		

ORP-0060 / Major Construction-Waste Treatment Plant **690,000** **840,000**

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

(dollars in thousands)

FY 2010 Current Appropriation	FY 2012 Request

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. In FY 2012 the project is transitioning from two subprojects to one project. 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. Approximately 50 percent of the low-activity waste fraction will be transferred and immobilized (vitrified into glass) in the Low-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.

The Department is executing a plan that provides a summary of strategies and key actions that optimize the approach to startup, commissioning and turnover of the Waste Treatment and Immobilization Plant facilities.

In FY 2010, the following activities were completed:

Low-Activity Waste Facility –

- Completed piping fabrication drawings.
- Completed interior architectural engineering.
- Completed electrical engineering.
- Completed controls and instrumentation instrument rack release for fabrication.
- Completed fabrication of the melter #1 and #2 lid and balance of components.
- Received packaged carbon dioxide storage vessel and refrigeration unit.
- Completed erection of the switchgear building and truck bay.

(dollars in thousands)

FY 2010 Current Appropriation	FY 2012 Request

- Continued installation of bulk electrical wiring, conduit, and support racks.
- Completed fabrication of the two melters.

Analytical Laboratory Facility –

- Completed electrical design tie-ins with vendor designed equipment.
- Completed Mechanical Handling (i.e. heating and ventilation air handler) design.
- Delivered the Autosampler System equipment.
- Delivered the shield window glass to the equipment staging area.
- Delivered the exhaust gas ventilation stack discharge monitoring instruments to the equipment staging area.
- Completed fabrication of in-cell lighting.
- Completed installation of the waste collection tank pit elevated concrete.
- Continued to install bulk piping.
- Continued to install commercial and Quality Level heating ventilation and air-conditioning duct.

Balance of Facilities –

- Finalized electrical capacity calculations for the Waste Treatment and Immobilization Plant.
- Completed acquisition package for the Wet Chemical Facility.
- Completed concrete slab and wall placement for the Ammonia Facility, including slab piping and conduit.
- Continued installation of instrumentation and electrical commodities in the Water Treatment Facility.

High-Level Waste Facility –

- Completed 63 concrete placements totaling 7,200 cubic yards.
    - Completed all slabs to El –14’ (2nd story).
    - Completed all concrete placements for the annex, incl. Elev. 37’ (3rd story) slabs.

(dollars in thousands)

FY 2010 Current Appropriation	FY 2012 Request

- Installed 593 tons of structural steel.
    - Completed Erection of all Structural Steel to El –0'-14' (2nd story).
- Received and Installed C5 containment Shield doors for Melter Caves 1 & 2.
- Received and staged (in place) -C2/C3 containment Shield Doors for Melter Caves 1 & 2.
- Completed Title II design for HVAC systems.
- Completed the design of all main steel for the High-Level Waste facility.
- Fabricated and delivered 10 shield doors.

Pretreatment Facility –

- Released for construction 450,000 piping linear feet out of a total of 540,000 linear feet.
- Released for construction 110,600 cubic yards of concrete, out of the total of 114,000 cubic yards.
- Delivered a total of 340,000 linear feet of engineered pipe sections.
- Delivered 10,500 tons of structural steel.
- Set into position one of four ultrafiltration vessels.
- Placed 3,000 cubic yards of concrete.
- Installed 1,900 tons of structural steel.
- Installed 16,800 lineal feet of pipe.

In FY 2012, the following activities are planned:

For the Low-Activity Waste Facility –

- Accept Thermal Catalytic Oxidizer; a major off-gas component.
- Design will be completed.
- The Thermal Catalytic Oxidizer will be staged.
- Piping installation will be 90% complete.

(dollars in thousands)

FY 2010 Current Appropriation	FY 2012 Request

- HVAC system duct work (932,000 lbs) will be complete.

For the Analytical Laboratory –
- Construction substantially complete consisting of all major civil, structural, piping, mechanical, and electrical power equipment installed and inspected and all piping hydro-tested to confirm capability to meet design requirements.

For the Balance of Facilities –
- Complete construction of the Chiller Compressor Plant and the Anhydrous Ammonia Facility.
- Complete Title II Civil/Structural design.

For the High-Level Waste Facility –
- Install Acid Waste and Plant Wash Vessels in the Wet Process Cell.
- Install Thermal Catalytic Oxidizers.
- Install Offgas Carbon Adsorber.
- Complete the installation of all ventilation and secondary offgas components in the Filter Cave.
- Complete pipe and hanger installations for PA06.

For the Pretreatment Facility –
- Receive Cesium Nitric Acid Recovery boiler and heat exchanger.
- Receive 480-volt Motor control center.
- Complete fabrication of 4 B cell vessels for Ultrafiltration system.
- Receive 5 major hot cell jumpers.
- Place 3,500 cubic yards of concrete, 89 percent complete.
- Install 825 tons of structural steel, 44 percent complete.
- Install 80,000 linear feet of piping, 38 percent complete.
- Install 75,000 pounds of HVAC ducting, 19 percent complete.

(dollars in thousands)

	FY 2010 Current Appropriation	FY 2012 Request

Key Accomplishments (FY 2010)/Planned Milestones (FY 2012)

- Low-Activity Waste Construction - Erect Switchgear Building (FY 2010)
- High-Level Waste -Receive and Accept Melter Cave 1 Crane Maintenance (FY 2010)
- High-Level Waste -Erect Structural Steel, EL 0-14ft (FY 2010)
- Issue-For-Construction Drawings for the Pretreatment Rack Design (FY 2010)
- Pretreatment Facility - Release for construction all steel work for the 4th floor (77 foot level). (FY 2010)
- Install Hot Cell cranes and shield doors in the Pretreatment Facility. (FY 2010)
- Lab - Receive Autosampler (ASX) Equipment (FY 2010)
- High-Level Waste Engineering - Complete HVAC Design (Title II) (FY 2010)
- Lab - Complete Installation of Autosampler System (October 2011)
- Balance of Facilities - Complete Chiller Compressor Plant Construction (March 2012)
- PT Facility - Controls and Instrumentation Design Complete (March 2012)
- High Level Waste Facility– Set off gas carbon adsorber (May 2012)
- PT Facility - Set Remaining Pretreatment Vessels at Elevation 0 Ft (August 2012)
- High Level Waste Facility -- Installation of HVAC duct at the 0’ elevation corridors (September 2012)
- Pretreatment Facility – Complete Electrical Design for the Pretreatment Facility (September 2012)

Total, River Protection	**1,096,600**	**1,361,391**

Explanation of Funding Changes

	FY 2012 vs. FY 2010 Current Approp. ($000)
Defense Environmental Cleanup	
Office of River Protection	
Tank Farm Activities	
ORP-0014 / Radioactive Liquid Tank Waste Stabilization and Disposition	
▪ Increase in funding is critical for tank farm infrastructure upgrades and waste feed delivery projects to provide required systems for start-up and commissioning of the Waste Treatment and Immobilization Plant hot operations. In addition, Supplemental Treatment activities are necessary to treat ~50% of the Low Activity Waste from the Waste Treatment and Immobilization Plant. Mandatory activities to meet the revised timetables under the Consent Decree and Tri-Party Agreement include retrieval of C Farm single-shell tanks, construction of interim barriers, and development of a third retrieval technology.	114,791
Waste Treatment and Immobilization Plant	
ORP-0060 / Major Construction-Waste Treatment Plant	
▪ Increase in funding maintains the current total project cost and mitigates project risks as they are realized, enhancing completion of the Waste Treatment and Immobilization Plant within budget and on schedule. Additionally, funding supports project design completion in 2013, facility construction completion in 2016, and facility commissioning of the Waste Treatment and Immobilization Plant in 2019.	150,000
Total, River Protection	**264,791**

01-D-416 Waste Treatment and Immobilization Plant, Hanford, WA
Project Data Sheet is for Construction

1. Significant Changes

The most recent DOE O 413.3B approved Critical Decision is 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.

A Federal Project Director at the appropriate level has been assigned to this project. This Project Data Sheet is an update of the FY 2011 Project Data Sheet.

An accelerated funding request of an additional $150,000,000 in FY 2012 is needed in order to support the increased confidence level to complete the project within budget and on schedule. This facilitates the mitigation of project risks as they are realized and supports the project design completion in 2013, facility construction complete in 2016, and facility commissioning in 2019. There is no change in the Total Project Cost for the Fiscal Year 2012 Construction Project Data Sheet.

The Department is executing a plan that provides a summary of strategies and key actions that optimize the approach to startup, commissioning and turnover of the Waste Treatment and Immobilization Plant facilities.

Status of Major Technical and Performance Issues

The Defense Nuclear Facilities Safety Board (Board) provides nuclear safety oversight of the Waste Treatment and Immobilization Plant Project. The Board has no open issues with the Low Activity Waste, Analytical Laboratory and the Balance of Facilities. The top issues the Department is currently working on with the Board include: 1) concerns with control of hydrogen in pipes and ancillary vessels in the Pretreatment Facility, 2) concerns with mixing of fluids and solids in the Pretreatment Facility process vessels; and 3) issues associated with deposition velocity relative to radiological releases in unmitigated accident scenarios, this issue does not directly impact this project.

The Department is actively engaged with the Board on a regular basis and has clear plans in place to address resolution of these issues. These actions are identified in existing project plans.

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	SEP 1995	SEP 1996	4Q FY2005	AUG 1998	OCT 2001	1Q FY2007	N/A	N/A
FY 2002 Budget Request	SEP 1995	SEP 1996	4Q FY2005	4Q FY1998	MAY 2002	1Q FY2007	N/A	N/A
FY 2003 Budget Request	SEP 1995	SEP 1996	4Q FY2005	4Q FY1998	MAY 2002	1Q FY2007	N/A	N/A
FY 2004 Budget Request	SEP 1995	SEP 1996	4Q FY2005	4Q FY1998	MAY 2002	1Q FY2007	N/A	N/A

(fiscal quarter or date)

	CD-0	CD-1	PED Complete	CD-2	CD-3	CD-4	D&D Start	D&D Complete
FY 2003 Congressional Notification	SEP 1995	SEP 1996	4Q FY2005	04/21/2003	04/21/2003	3Q FY2008	N/A	N/A
FY 2005 Budget Request	SEP 1995	SEP 1996	4Q FY2005	04/21/2003	04/21/2003	3Q FY2008	N/A	N/A
FY 2004 Reprogramming	SEP 1995	SEP 1996	4Q FY2005	04/21/2003	04/21/2003	3Q FY2008	N/A	N/A
FY 2006 Budget Request	SEP 1995	SEP 1996	4Q FY2007	04/21/2003	04/21/2003	3Q FY2008	N/A	N/A
FY 2007 Budget Request	SEP 1995	SEP 1996	4Q FY2007	04/21/2003	04/21/2003	3Q FY2008	N/A	N/A
FY 2008 Budget Request	SEP 1995	SEP 1996	4Q FY2010	04/21/2003	04/21/2003	2Q FY2017	N/A	N/A
FY 2009 Budget Request	SEP 1995	SEP 1996	4Q FY2013	04/21/2003	04/21/2003	1Q FY2020	N/A	N/A
FY 2010 Budget Request	SEP 1995	SEP 1996	1Q FY2016	04/21/2003	04/21/2003	1Q FY2020	N/A	N/A
FY 2012 Budget Request	SEP 1995	SEP 1996	1Q FY2016	04/21/2003	04/21/2003	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

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	Total Project Cost
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 2012	0	12,263,000	12,263,000	0	0	0	12,263,000

(Fiscal Quarter)

TEC, PED	TEC, Construction	TEC, Total	OPC Except D&D	OPC, D&D	OPC, Total	Total Project Cost

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 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 for this scope 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 operations, once completed, will treat and stabilize these waste-forms.

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 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 Waste Treatment Plant Key Project Performance Parameters for the Low Activity Waste facility are 18-metric tons of glass per day and the High Level Waste facility are 3.6 metric tons. 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 Department's Waste Treatment and Immobilization Plant Project 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 Department's 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 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 procurement and construction; 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 activities. 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.

Risk Management is an integral part of project management and not a separate function. Risk Management is used as a management tool to identify and manage risks to avoid/minimize negative impacts and maximize positive impacts. The risk management process and its integration and execution throughout the project areas and organizations is overseen by a Joint Risk Management Team chaired by the Waste Treatment Plant Project Manager and comprised of DOE's Area Federal Project Managers and key Waste Treatment Plant Senior Project and Functional Managers.

The status of risks is reviewed monthly as a minimum including a dashboard assessment. The Engineering, Procurement, Construction, and Commissioning and DOE Risk Handling Strategies include developing Risk Response Plans, establishing risk handling actions including identifying individual responsibilities, documenting completion dates, determining residual risk levels, establishing impacts, and developing a time phased residual impact profile.

Remaining risks are primarily associated with construction and commissioning activities.

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. In October 2010, the Department of Energy and the Washington State Department of Ecology agreed on revised timetables under the Tri-Party Agreement and a new Consent Decree has been filed in federal district court for cleanup of the Hanford Site. Major milestones include beginning treatment of waste at the Waste Treatment 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).

The current status of the project is on schedule to meet the project design completion in 2013, facility construction complete in 2016, and facility commissioning in 2019. The FY 2012 funding request provides the project with an 80% confidence level and mitigates project risks as they are realized and is based on a phased startup and commissioning approach that will allow the facilities to be transitioned to an operational state on as short a timeline as credible.

The project is being conducted in accordance with the project management requirements in DOE Order 413.3B, *Program and Project Management for the Acquisition of Capital Assets*, and all appropriate project management requirements have been met.

5. Financial Schedule

01-D-416 Waste Treatment and Immobilization Plant

	(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	716,612
FY 2010	690,000	690,000	788,379
FY 2011	740,178	740,178	840,629
FY 2012	840,000	840,000	880,129
FY 2013[j]	970,000	970,000	941,608
FY 2014[j]	890,000	890,000	889,605
FY 2015[j]	790,000	790,000	800,044
FY 2016[j]	600,000	600,000	622,353
FY 2017[j]	380,000	380,000	408,420
FY 2018[j]	355,000	355,000	363,938
FY 2019[j]	240,000	240,000	275,401
FY 2020[j]	63,263	63,263	67,663
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) In accordance with the President's proposal to implement a 5-year non-security discretionary spending freeze, budget figures shown for years after FY 2012 are notional and do not represent policy. Funding decisions will be made on a year-by-year basis.

The following tables break out the previous configuration of two line items.

01-D-16A-D, Low-Activity Waste Facility, Analytical Laboratory, Balance of Facilities, High-Level Waste Facility

	(dollars in thousands)		
	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
Construction			
FY 2005[a]	1,927,257	1,927,257	1,737,190
FY 2006	373,244	373,244	361,714
FY 2007[b]	479,000	450,000	420,421
FY 2008[c]	433,023	462,022	488,268
FY 2009	425,000	425,000	419,820
FY 2010	365,000	365,000	455,168
FY 2011	370,178	370,178	448,085
FY 2012	363,000	363,000	390,198
FY 2013	460,000	460,000	409,454
FY 2014	405,000	405,000	398,354
FY 2015	395,000	395,000	399,971
FY 2016	425,000	425,000	432,870
FY 2017	280,000	280,000	294,193
FY 2018	215,000	215,000	228,037
FY 2019	103,000	103,000	131,242
FY 2020	44,833	44,833	48,549
Total, Construction	7,063,535	7,063,535	7,063,535

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) Ten (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. High-Level Waste's portion of the hold-back is $22,700,000.
c) FY 2008 Enacted Appropriations reflect a reduction of $1,611,000 due to the FY 2008 Government-wide Rescission of 0.91 percent.

01-D-16E, Pretreatment Facility

	(dollars in thousands)		
	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
Construction			
FY 2005[a]	1,192,822	1,188,766	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	296,791
FY 2010	325,000	325,000	333,210
FY 2011	370,000	370,000	392,545
FY 2012	477,000	477,000	489,931
FY 2013	510,000	510,000	532,154
FY 2014	485,000	485,000	491,251
FY 2015	395,000	395,000	400,073
FY 2016	175,000	175,000	189,483
FY 2017	100,000	100,000	114,227
FY 2018	140,000	140,000	135,901
FY 2019	137,000	137,000	144,159
FY 2020	18,430	18,430	19,114
Total, Construction	5,199,465	5,199,465	5,199,465

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) Ten (10) percent of the FY 2007 Appropriation was 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.

6. Details of Project Cost Estimate

01-D-416 Waste Treatment and Immobilization Plant

	(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[a]	2,380,748	2,443,355	1,125,000
Facility Construction[b]	3,720,637	3,714,187	2,155,000
Commissioning[c]	1,409,428	1,360,225	876,000
Technical Support/Transition	185,000	185,000	50,000
Contingency/Fee[d]	2,019,210	2,067,000	100,000
Total, Construction	12,263,000	12,263,000	5,781,000

	(dollars in thousands)		
	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
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, Total Project Cost	12,263,000	12,263,000	5,781,000
Total, Contingency	[2,019,210]	[2,067,000]	[100,000]

a) Equipment/Procurement dollars represent costs of plant equipment, bulk plant material, and acquisition services.
b) Facility Construction dollars represent construction costs through system turnover.
c) Commissioning dollars represent the cost of Start-up and Commissioning.
d) Contingency/Fee dollars represent the contractor's Management Reserve, Fee, and DOE Project Contingency.

7. Schedule of Appropriation Requests

01-D-416 Waste Treatment and Immobilization Plant

Request		($K) Prior Years	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY2016	Outyears	Total
FY 2002	TEC	4,350,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4,350,000
	OPC	0	0	0	0	0	0	0	0	0
	TPC	4,350,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4,350,000
FY 2003	TEC	4,350,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4,350,000
	OPC	0	0	0	0	0	0	0	0	0
	TPC	4,350,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4,350,000
FY 2004	TEC	4,350,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4,350,000
	OPC	0	0	0	0	0	0	0	0	0
	TPC	4,350,000	N/A	N/A	N/A	N/A	N/A		N/A	4,350,000
FY 2005	TEC	5,781,000	0	0	0	0	0	0	0	5,871,000
	OPC	0	0	0	0	0	0	0	0	0
	TPC	5,781,000	0	0	0	0	0	0	0	5,871,000
FY 2006	TEC	5,693,872	87,128	0	0	0	0	0	0	5,781,000
	OPC	0	0	0	0	0	0	0	0	0
	TPC	5,693,872	87,128	0	0	0	0	0	0	5,781,000
FY 2007	TEC	5,682,770	98,230	0	0	0	0	0	0	5,781,000
	OPC	0	0	0	0	0	0	0	0	0
	TPC	5,682,770	98,230	0	0	0	0	0	0	5,781,000
FY 2008 Performance Baseline	TEC	6,394,559	690,000	690,000	690,000	690,000	690,000	690,000	1,728,441	12,263,000
	OPC	0	0	0	0	0			0	0
	TPC	6,394,559	690,000	690,000	690,000	690,000	690,000	690,000	1,728,441	12,263,000
FY 2009	TEC	6,394,559	690,000	690,000	690,000	690,000	690,000	690,000	1,728,441	12,263,000
	OPC	0	0	0	0	0			0	0
	TPC	6,394,559	690,000	690,000	690,000	690,000	690,000	690,000	1,728,441	12,263,000
FY 2010	TEC	6,394,559	690,000	690,000	690,000	690,000	690,000	690,000	1,728,441	12,263,000
	OPC	0	0	0	0	0			0	0
	TPC	6,394,559	690,000	690,000	690,000	690,000	690,000	690,000	1,728,441	12,263,000
FY 2011	TEC	6,394,559	740,178	690,000	690,000	690,000	690,000	690,000	1,678,263	12,263,000
	OPC	0	0	0	0	0			0	0

	TPC	6,394,559	740,178	690,000	690,000	690,000	690,000	690,000	1,678,263	12,263,000
FY 2012	TEC	6,394,559	740,178	840,000	970,000	890,000	790,000	600,000	1,038,263	12,263,000
	OPC	0	0	0	0	0			0	0
	TPC	6,394,559	740,178	840,000	970,000	890,000	790,000	600,000	1,038,263	12,263,000

By Line Item

01-D-16A-D, Low-Activity Waste Facility, Analytical Laboratory, Balance of Facilities, High-Level Waste Facility

		($K)								
Request		Prior Years	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	Outyears	Total
FY 2008 Performance Baseline	TEC	3,991,023	315,000	292,000	155,000	350,000	365,000	320,000	1,080,977	6,869,000
	OPC	0	0	0	0	0	0	0	0	0
	TPC	3,991,023	315,000	292,000	155,000	350,000	365,000	320,000	1,080,977	6,869,000
FY 2009	TEC	4,026,023	290,000	370,000	325,000	355,500	365,000	388,500	748,977	6,869,000
	OPC	0	0	0	0	0	0	0	0	0
	TPC	4,026,023	290,000	370,000	325,000	355,500	365,000	388,500	748,977	6,869,000
FY 2010	TEC	4,026,023	310,000	355,000	335,000	330,000	375,000	492,000	1,100,977	7,324,000
	OPC	0	0	0	0	0	0	0	0	0
	TPC	4,026,023	310,000	355,000	335,000	330,000	375,000	492,000	1,100,977	7,324,000
FY 2011	TEC	4,026,023	225,178	375,000	310,000	330,000	355,000	455,000	1,247,799	7,324,000
	OPC	0	0	0	0	0	0	0	0	0
	TPC	4,026,023	225,178	375,000	310,000	330,000	355,000	455,000	1,247,799	7,324,000
FY 2012	TEC	4,026,023	370,178	363,000	460,000	405,000	395,000	425,000	619,334	7,063,535
	OPC	0	0	0	0	0	0	0	0	0
	TPC	4,026,023	370,178	363,000	460,000	405,000	395,000	425,000	619,334	7,063,535

01-D-16E, Pretreatment Facility

		($K)								
Request		Prior Years	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	Outyears	Total
FY 2008 Performance Baseline	TEC	2,393,536	340,000	320,000	365,000	34,000	325,000	301,000	1,315,464	5,394,000
	OPC	0	0	0	0	0	0	0	0	0
	TPC	2,393,536	340,000	320,000	365,000	34,000	325,000	301,000	1,315,464	5,394,000
FY 2009	TEC	2,348,536	400,000	320,000	365,000	334,500	325,000	301,000	999,964	5,394,000
	OPC	0	0	0	0	0	0	0	0	0
	TPC	2,348,536	400,000	320,000	365,000	334,500	325,000	301,000	999,964	5,394,000
FY 2010	TEC	2,373,536	380,000	335,000	355,000	360,000	315,000	200,000	620,464	4,939,000
	OPC	0	0	0	0	0	0	0	0	0
	TPC	2,373,536	380,000	335,000	355,000	360,000	315,000	200,000	620,464	4,939,000
FY 2011	TEC	2,348,536	415,000	315,000	380,000	360,000	335,000	235,000	550,464	4,939,000
	OPC	0	0	0	0	0	0	0	0	0
	TPC	2,348,536	415,000	315,000	380,000	360,000	335,000	235,000	550,464	4,939,000
FY 2012	TEC	2,348,536	370,000	477,000	510,000	485,000	395,000	175,000	438,929	5,199,465
	OPC	0	0	0	0	0	0	0	0	0
	TPC	2,348,536	370,000	477,000	510,000	485,000	395,000	175,000	438,929	5,199,465

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. 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 Project Data Sheet.

9. Required D&D Information

Area	Square Feet
N/A	N/A

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:

- Critical Decision - 0: Approved Mission Need - September 1995
- Critical Decision - 1: Approved Preliminary Baseline Range - September 1996
- Critical Decision - 2: Approved Performance Baseline - August 1998

The project is being executed in accordance with the project management requirements in DOE Order 413.3B, *Program and Project Management for the Acquisition of Capital Assets*. The following critical decisions were approved after the December 2000 award:

- Critical Decision - 3A: Approved Limited Construction - October 2001
- Critical Decision - 3B: Approved Preliminary Construction - May 2002
- Critical Decision - 3C: Approved Full Construction - April 2003
- Approval of Revised Cost and Schedule Baseline - December 2006

The following critical decision is planned for the future:
Critical Decision - 4: Approved Start of Operation - 1Q FY 2020 and is based on a phased startup and commissioning approach that will allow the facilities to be transitioned to an operational state on as short a timeline as credible.

Savannah River

Funding Schedule by Activity

	(Dollars in Thousands)	
	FY 2010 Current Appropriation	FY 2012 Request
Defense Environmental Cleanup		
Savannah River Site		
2035 Accelerations		
SR-0012 / SNF Stabilization and Disposition	37,768	0
SR-0030 / Soil and Water Remediation	1,000	0
SR-0100 / Savannah River Community and Regulatory Support	18,300	0
Subtotal, 2035 Accelerations	57,068	0
Cleanup and Waste Disposition		
SR-0100 / Savannah River Community and Regulatory Support	0	0
Nuclear Material Stabilization and Disposition		
SR-0011C / NM Stabilization and Disposition	391,625	0
Savannah River Site		
SR-0011C / NM Stabilization and Disposition	0	235,000
SR-0012 / SNF Stabilization and Disposition	0	40,137
SR-0013 / Solid Waste Stabilization and Disposition	0	30,040
SR-0014C / Radioactive Liquid Tank Waste Stabilization and Disposition-2035	0	880,558
SR-0030 / Soil and Water Remediation	0	38,409
Subtotal, Savannah River Site	0	1,224,144
Site Risk Management Operations		
SR-0011C / NM Stabilization and Disposition	0	0
SR-0012 / SNF Stabilization and Disposition	0	0
SR-0014C / Radioactive Liquid Tank Waste Stabilization and Disposition-2035	0	0
Subtotal, Site Risk Management Operations	0	0
Tank Farm Activities		
SR-0014C / Radioactive Liquid Tank Waste Stabilization and Disposition-2035	761,256	0
Total, Savannah River Site	1,209,949	1,224,144
Community, Regulatory and Program Support		
Savannah River		
SR-0100 / Savannah River Community and Regulatory Support	0	9,584
Total, Defense Environmental Cleanup	1,209,949	1,233,728

In FY 2012, EM will be consolidating EM Headquarters policy and oversight activities, community and regulatory support and contract/post closure activities across the EM complex into a single control point. The consolidation of these activities into a single control point will allow for greater transparency and accountability of overhead activities but will also provide flexibility during the year of execution. While these activities are being consolidated into a single control point, the individual activities will continue to be displayed within the site chapters of the EM budget. In addition, EM is proposing to remove the currently established control points of Cleanup and Waste Disposition and Site Risk Management Operations within the Savannah River Site allowing the primary control to remain at the site level. EM will continue to manage and report all activities for the Savannah River site at the PBS level.

The funding table below provides a comparable display of the impacted activities and a comparable display will be continued throughout this budget chapter to aid in budget review.

Funding Schedule by Activity

	(Dollars in Thousands)	
	FY 2010 Current Appropriation	FY 2012 Request
Defense Environmental Cleanup		
Savannah River Site		
SR-0011C / NM Stabilization and Disposition	391,625	235,000
SR-0012 / SNF Stabilization and Disposition	37,768	40,137
SR-0013 / Solid Waste Stabilization and Disposition	0	30,040
SR-0014C / Radioactive Liquid Tank Waste Stabilization and Disposition-2035	761,256	880,558
SR-0030 / Soil and Water Remediation	1,000	38,409
Subtotal, Savannah River Site	1,191,649	1,224,144
Community, Regulatory and Program Support		
SR-0100 / Savannah River Community and Regulatory Support	18,300	9,584
Total, Defense Environmental Cleanup	1,209,949	1,233,728

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 DOE national security and non-proliferation programs, and work that is performed at the Savannah River National Laboratory.

Site Description

- 310 square miles.
- 1,000 facilities concentrated within only 10 percent of the total land area.

Site Cleanup Strategy/Scope of Cleanup

- Eliminate or minimize nuclear materials, spent (used) nuclear fuel, and waste through safe stabilization, treatment, and/or disposition.

- Reduce the costs of continuing operations and surveillance and maintenance.

- 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 were entered into with the State of South Carolina.

- The Federal Facility Agreement for the Savannah River Site.

- The Savannah River Site Area Completion Strategy.

- Public Law 107-107, Section 3155, Disposition of Surplus Defense Plutonium at the Savannah River Site, Aiken, South Carolina.

- Section 3137 of the National Defense Authorization Act for Fiscal Year 2001 (Public Law 106-398) as amended by Section 3115, of the National Defense Authorization Act for Fiscal Year 2004 (Public Law 108-136).

- The Savannah River Site Treatment Plan.

- Saltstone Disposal Facility Industrial Solid Waste Landfill Permit.

- Section 3116 of the Ronald W. Reagan National Defense Authorization Act.
- Nuclear Cooperation Agreements.

Critical Project Uncertainties and Assumptions

Program-specific uncertainties that could have significant impacts to individual projects and may impact the overall cleanup scope, schedule, and costs have been identified:

- Delays in off-site disposal would require an increase in storage capacity for high-level waste;
- 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;
- Nuclear nonproliferation concerns are leading to continual increases in the amount, type, and schedule of Foreign Research Reactor fuel returns. These changes result in uncertainty in the support required for the receipt, storage, and maintenance of the safety basis for the spent fuel storage area;
- 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 surplus plutonium stored by EM at the Savannah River Site;
- Uncertainty in sludge inventory and characteristics of tank waste that could adversely affect disposition costs and schedules;
- Assume safe standby of H-Canyon pending the decision on used nuclear fuel processing;
- 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;
- 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-4.

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.
- National Nuclear Security Administration – Nuclear Nonproliferation Program – Enriched Uranium Blend-Down.
- National Nuclear Security Administration – Global Threat Reduction Initiative – Foreign Research Reactor Spent Nuclear Fuel Returns.
- Office of Nuclear Energy – Domestic Research Reactor Returns.
- Office of Science – Oak Ridge Research Reactor Returns.
- Savannah River National Laboratory.
- United States Forest Service – Savannah River Forest Station.
- Tennessee Valley Authority.
- Idaho National Laboratory.
- Enriched Uranium Receipts from National Nuclear Security Administration Sites (Y-12 Oak Ridge, Los Alamos, Lawrence Livermore and others).
- Nevada National Security Site disposal facilities.

Contract Synopsis

Data as of December 2010

Contractor	Base Period Current Period	Total Value	Contract Description	Contract Type
US Army Corps of Engineers	8/1985 – Perpetuity	$83.4M	Project and Construction Management Support	Interagency Agreement - IN CLOSEOUT

Contractor	Base Period Current Period	Total Value	Contract Description	Contract Type
US Army Corps of Engineers	6/2010 - 6/2015	$5.2M	Project & Construction Management Support	Interagency Agreement
US Army Corps of Engineers	11/2009 - 11/2014	$22.5M	Cost Estimating Support	Interagency Agreement
US Forest Service	10/2000 - 9/2015	$183 M	Natural Resources Management	Interagency Agreement - Five year Extension Awarded
Wackenhut Services Inc	5 Year Base 1/1/2010 – 12/31/2015 2 Option Periods: 1/1/2016 – 12/31/2018 1/1/2017 – 12/31/2020	$989M	Paramilitary Security Services Safeguarding Special Nuclear Material. Developing procedures governing protective force operations. Maintaining aviation (helicopter) operations.	Cost Plus Award Fee
South Carolina Electric and Gas Company	6/2006 -5/2014	$103M	Electrical Operation and Maintenance	Fixed Price
Parsons Infrastructure and Technology Group	9/2002 -3/2017	$1.34B	Design, Construction and Commissioning of Salt Waste Processing Facility	Cost Plus Incentive Fee
Savannah River Remediation LLC	6 Year Base 7/1/2009-6/30/2015 2 Option Periods Option 1: 7/1/2015 - 6/30/2017	$4.7B	Liquid Waste Program to treat, store and dispose of radioactive liquid waste at Savannah River Site.	Cost Plus Award Fee

Contractor	Base Period Current Period	Total Value	Contract Description	Contract Type
	Option 2: 7/1/2015 - 6/30/2017			
Savannah River Nuclear Solutions	5 Year Base: 8/1/2008 - 7/31/2013 Option Period: 8/1/2013- 7/31/2018	$8B (Base + Option)	Management and Operation of Savannah River Site	Cost Plus Award Fee

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.

Direct maintenance and repair at the Savannah River Site is estimated to be $132,683,000.

Detailed Justification

(dollars in thousands)

	FY 2010 Current Appropriation	FY 2012 Request
SR-0100 / Savannah River Community and Regulatory Support	**18,300**	**9,584**

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.

In FY 2010, the following accomplishments were completed:

- Conducted forest management activities to sustain the Savannah River Sites natural resources.
- Continued Payments-in-Lieu-of-Taxes to Aiken, Allendale, and Barnwell counties.
- Provided technical expertise in the conduct of geological surveys and natural resource management.
- Executed grant programs with Historically Black Colleges and Universities focusing on scientific research related to environmental issues.
- Continued grant for South Carolina Department of Health Environmental Control oversight of environmental monitoring, Federal Facility Agreement, Agreement in Principle, and Site Treatment Plan; continued Inter-Agency Agreement with Environmental Protection Agency.

In FY 2012, the following activities are planned:

- Conduct forest management activities to sustain the Savannah River Sites natural resources.
- Continue Payments-in-Lieu-of-Taxes to Aiken, Allendale, and Barnwell counties.

(dollars in thousands)

	FY 2010 Current Appropriation	FY 2012 Request
SR-0011C / NM Stabilization and Disposition	**391,625**	**235,000**

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

The H Area facilities will continue to disposition enriched uranium materials (from the National Nuclear Security Administration) through late FY 2011. The materials to be disposed through H Area consist of uranium solutions and surplus non-pit plutonium. Funding for the Highly Enriched Uranium Blend Down program, which was previously funded by the National Nuclear Security Administration is included in this PBS. In FY 2012 H-Canyon will be placed into a safe standby state pending the decision on spent (used) nuclear fuel processing.

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. These Savannah River Site facilities will be operated in compliance with applicable laws, regulations, and DOE Orders. Legacy special nuclear material is protected from theft and sabotage, including upgrade of protective capabilities, as appropriate. The special nuclear material will be managed until final disposition facilities are available.

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 stabilized surplus non-pit plutonium materials. 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 performs any necessary surveillance in accordance with DOE Standard-3013. Plutonium that meets the criteria for disposition via the DOE mixed-oxide fuel program may be transferred for disposition by FY 2019.

In FY 2010, the following accomplishments were completed:

- Continued surveillance and maintenance of the F Area Storage Facility (235-F) as well as for the Receiving Basin for Off-Site Fuels Facility. Initiated 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).

- Performed surveillance of special nuclear materials in storage in accordance with DOE-STD-3013 and the surveillance and monitoring plan.

(dollars in thousands)

FY 2010 Current Appropriation	FY 2012 Request

- Continued to receive weapons grade surplus non-pit plutonium from Los Alamos National Laboratory, and Lawrence Livermore National Laboratory.

- Operated H-Canyon to process unirradiated highly enriched uranium, blend down the resultant solution to low enriched uranium, and ship to Tennessee Valley Authority.

- Completed the dissolution of all the unirradiated highly enriched uranium materials.

- Operated HB-Line to disposition surplus non-pit plutonium materials.

- Completed preparations in H and L Areas to ship aluminum-clad spent (used) nuclear fuels to process the used nuclear fuel in H-Canyon.

In FY 2012, the following activities are planned:

- Continue surveillance and maintenance of the F Areas Storage Facility (235-F) as well as for the Receiving Basin for Off-Site Fuels Facility. Continue the 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).

- Perform surveillance of special nuclear materials in storage by non-destructive means only in accordance with DOE-STD-3013 and the surveillance and monitoring plan.

- Maintain H-Canyon in a safe standby condition pending the decision on spent (used) nuclear fuel processing.

Key Accomplishments (FY 2010)/Planned Milestones (FY 2012)

- Continue Operations of the K Area Material Storage Facility (FY 2010)
- Continue Surveillance Capability of 3013 Containers in K Area in compliance with DOE-STD-3013 (FY 2010)
- Continue Operations of K Area Material Storage Facility (September 2012)
- Continue Surveillance of DOE-STD-3013 Containers in K-Area (September 2012)
- KAMS Expansion Completed (September 2012)

(dollars in thousands)

	FY 2010 Current Appropriation	FY 2012 Request
SR-0012 / SNF Stabilization and Disposition	**37,768**	**40,137**

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

This PBS covers the scope and funding for the legacy spent (used) nuclear fuel originating from Atomic Energy Commission and DOE activities, and non-legacy spent (used) nuclear fuel, originating in both Foreign and Domestic Research Reactors which is being transferred to the Savannah River Site for safe, secure storage pending disposition. All spent (used) nuclear fuel activities at Savannah River are conducted in a single area and consolidated for storage in a single basin.

The end-state will be accomplished when all remaining Savannah River Site inventories of legacy spent (used) nuclear fuel have been disposed, and the spent (used) nuclear fuel facilities have been deactivated and turned over for final disposition. Activities include: receipt of legacy spent (used) nuclear fuel in L-Disassembly Basin cask unloading and preparation for underwater storage, cask loading, and shipments of irradiated and non-irradiated spent (used) nuclear fuel and miscellaneous legacy materials for disposition. A basin de-ionization system will be operated in support of fuel storage and water chemistry control requirements.

All deactivation activities under this PBS are scheduled to be completed by FY 2022 and the facilities transferred to PBS SR-0030, Soil and Water Remediation.

In FY 2010, the following accomplishments were completed:

- Provided safe storage for all spent (used) nuclear fuel stored in L Area.
- Continued facility surveillance and maintenance activities, including maintenance of equipment, facility, grounds, instrumentation, and infrastructure.
- Completed all preparations to support shipment of aluminum-clad used nuclear fuel to H Canyon for disposition.
- Continued receipt of foreign and domestic research reactor spent (used) nuclear fuels.
- Received first shipment of gap fuel (non-US origin highly enriched uranium fuel) from Chile.

In FY 2012, the following activities are planned:

- Provide safe storage for all spent (used) nuclear fuel stored in L Area.

(dollars in thousands)

FY 2010 Current Appropriation	FY 2012 Request

- Continue facility surveillance and maintenance activities, including maintenance of equipment, facility, grounds, instrumentation, and infrastructure.

- Continue receipt of foreign and domestic research reactor spent (used) fuel except for HFIR fuel.

- Conduct scientific applied research and technology development activities to assure safe extended storage of spent (used) nuclear fuel and stabilization of degraded fuel.

Key Accomplishments (FY 2010)/Planned Milestones (FY 2012)
▪ Receive FRR/DRR SNF (FY 2010/September 2012)

SR-0013 / Solid Waste Stabilization and Disposition **0** **30,040**

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

This PBS scope covers the storage, treatment and disposal functions for transuranic, low- level, mixed low-level, hazardous, and sanitary waste, as well as pollution prevention, waste minimization, waste certification, and other waste management support functions. In addition, this project covers surveillance and maintenance for the Consolidated Incinerator Facility and general "landlord" scope.

In FY 2010, the following accomplishments were completed:

- No planned activities in FY 2010; the scope of work typically covered in this PBS was executed with ARRA funding.

In FY 2012, the following activities are planned:

- Disposal of up to 2,517 m^3 of newly generated low-level waste.

- Disposal of 50 m^3 of mixed low-level waste inventory.

- Disposal of up to 150 m^3 of hazardous waste inventory.

- Disposal of sanitary waste.

- Management of waste certification program.

(dollars in thousands)

	FY 2010 Current Appropriation	FY 2012 Request
SR-0014C / Radioactive Liquid Tank Waste Stabilization and Disposition-2035	**761,256**	**880,558**

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. The Department started operating the Defense Waste Processing Facility in 1996 to vitrify high-level waste in a stable form and store it for eventual off-site disposal. The ability to safely process the salt component of the waste stored in underground storage tanks at Savannah River is a crucial prerequisite for completing high-level waste disposal. In order to relieve tank space shortages and assure that vitrification in the Defense Waste Processing Facility of the high-activity fraction of liquid waste will continue uninterrupted, the Actinide Removal Process and Modular Caustic Side Extraction Unit started up in the third quarter of FY 2008. This provides an interim processing capability to remove and treat salt waste from the tank farms to create additional tank space before the start up of the Salt Waste Processing Facility. It also provides Savannah River the opportunity to develop operating experience on a production-scale actinide and cesium removal processes which will be used to optimize the start up and initial operations of the Salt Waste Processing Facility. 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 needed 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.

For the Salt Waste Processing Facility, a total of $234,118,000 for construction was appropriated in FY 2010 and $170,071,000 is requested in FY 2012 to continue construction (05-D-405).

(dollars in thousands)

FY 2010 Current Appropriation	FY 2012 Request

In FY 2010, the following accomplishments were completed:

- Operated the Defense Waste Processing Facility and produced 186 canisters.
- Continued the Effluent Treatment Facility operations.
- Continued operation of F and H Tank Farms.
- Continued construction of the Salt Waste Processing Facility.
- Continued operation of Actinide Removal Process and Modular Caustic Side Extraction to enable feed preparation for the Salt Waste Processing Facility.
- Continued operation of the Saltstone Facility.

In FY 2012, the following activities are planned:

- Operate the Defense Waste Processing Facility and produce 312 canisters.
- Continue the Effluent Treatment Facility operations.
- Continue operation of F and H Tank Farms.
- Continue construction of the Salt Waste Processing Facility.
- Operation of Actinide Removal Process and Modular Caustic Side Extraction at planned rates.
- Operate the Saltstone Facility at planned rates.
- Initiate planning activities for Glass Waste Storage Building #3.
- Continue Tank 48 Treatment Process Project.
- Complete the Defense Waste Processing Facility Melter #3

(dollars in thousands)

FY 2010 Current Appropriation	FY 2012 Request

- Support fabrication of the Defense Waste Processing Facility Melter #4 and procurement of Melter #5.
- Complete construction of Saltstone Disposal Unit #2.
- Continue construction of Saltstone Disposal Units #3 and 5.
- Initiate pre-planning activities for Saltstone Disposal units #6, 7, 8, and 9.
- Continue design, procurement, and fabrication of the Salt Disposal Initiatives using small column ion exchange technology.
- Close two non-compliant tanks in FY 2012 which will meet two FFA tank closure commitments with due dates in the first quarter FY 2013.
- Continue waste removal activities in support of sludge and salt batch preparation to feed DWPF and ARP/MCU and in support of tank closure acceleration consistent with the Enhanced Tank Waste Strategy Initiative.
- Continue tank farm modifications to support SWPF startup.
- Complete design of the Enhanced Chemical Cleaning Units and continue fabrication and assembly.

Key Accomplishments (FY 2010)/Planned Milestones (FY 2012)

- Request CBC Assistance (FY 2010)
- Initiate DCAA Audit (FY 2010)
- Submit Performance Baseline (FY 2010)
- Review Performance Baseline (FY 2010)
- Deck at 116' Complete - Central Processing Area (FY 2010)
- Definitize Contract Modification (FY 2010)
- Produce 186 Canisters of Vitrified High-Level Waste (FY 2010)
- DWPF SAS Mode (FY 2010)

(dollars in thousands)

	FY 2010 Current Appropriation	FY 2012 Request

- Argon Tank Construction (FY 2010)
- Submit F Tank Farm Draft Waste Determination Basis Document to NRC (FY 2010)
- Roof at 154' Complete (November 2011)
- Roof at 176' Complete (January 2012)
- Cold Chemical Area Complete (January 2012)
- Alpha Finishing Facility Complete (February 2012)
- Facility Support Area Complete (February 2012)
- Piping Installation Complete - Process Building (March 2012)
- Complete HVAC Installation (March 2012)

SR-0030 / Soil and Water Remediation	**1,000**	**38,409**

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

The Soil and Water Remediation PBS scope includes the remediation of Savannah River Site contaminated soils and waste sites to reduce risk and to protect groundwater aquifers and surface waters from the spread of contamination by addressing the sources of contamination using an Area Completion Approach.

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. This work was initially located under PBS SR-0040C, Nuclear Facility D&D- 2035, but has been combined with the work scope in PBS SR-0030, Soil and Water Remediation.

In FY 2010, the following accomplishments were completed:

- Provide modeling capabilities to assess the threat of Comprehensive Environmental Response, Compensation and Liability Act contaminants on human health and the environment.
- A portion of scope typically covered in this PBS is being executed with ARRA funding.

In FY 2012, the following activities are planned:

- Maintain safe and stable facility conditions by performing surveillance and maintenance.
- Continue to provide sound management of and support to the project (safety and health,

(dollars in thousands)

	FY 2010 Current Appropriation	FY 2012 Request

coordination, environmental compliance, waste management, quality assurance, project controls, estimating, finance, and engineering).

- Continue to operate and maintain regulatory required soil and groundwater remedial systems to protect human health and the environment.
- Continue groundwater and stream monitoring to demonstrate to the regulators remedial systems' effectiveness and improvement of groundwater quality.
- Attainment of enforceable Federal Facility Agreement milestones and Resource Conservation and Recovery Act commitments.

Total, Savannah River	**1,209,949**	**1,233,728**

Explanation of Funding Changes

	FY 2012 vs. FY 2010 Current Approp. ($000)
Defense Environmental Cleanup	
Community, Regulatory and Program Support	
SR-0100 / Savannah River Community and Regulatory Support	
▪ Decrease eliminates funding for conducting geological surveys and for the grant program.	-8,716
Savannah River Site	
SR-0011C / NM Stabilization and Disposition	
▪ Decrease reflects placement of H-Canyon in a safe standby condition, pending the decision on spent (used) nuclear fuel processing, the completion of the californium shuffler, and the one time funding for K-Area purification vault in FY 2010.	-156,625
SR-0012 / SNF Stabilization and Disposition	
▪ Increase reflects escalation costs for activities to support Foreign Research Reactor Fuel and Domestic Research Reactor Fuel Program, and research and technology development activities to extend safe storage of spent (used) nuclear fuel.	2,369

	FY 2012 vs. FY 2010 Current Approp. ($000)
SR-0013 / Solid Waste Stabilization and Disposition	
▪ Increase reflects resumption of base funding for management of low-level, mixed low-level and hazardous waste which was previously funded by the American Recovery and Reinvestment Act appropriation.	30,040
SR-0014C / Radioactive Liquid Tank Waste Stabilization and Disposition-2035	
▪ Increase reflects a continuation of Tank 48 Treatment Process Project, the initiation of planning activities for Glass Waste Storage Building #3, the support of fabrication of Defense Waste Processing Facility Melter #4 and the procurement of Melter #5, activities to support closure of two tanks, and acceleration of multiple tank isolation and closures which is consistent with the Enhanced Tank Waste Strategy Initiative. .	119,302
SR-0030 / Soil and Water Remediation	
▪ Increase reflects the return of work scope that was previously funded by the American Recovery and Reinvestment Act appropriation.	37,409
Total, Savannah River	**23,779**

Salt Waste Processing Facility, Savannah River Site, Aiken, South Carolina (Construction 05-D-405) - (SR-0014C)

1. Significant Changes

There are no significant changes since the FY 2010 Congressional Submission.

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 2012	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 2012	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 ming	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 2012	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 bottom-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 estimated additional material and associated labor to install, and incorporating the cost of realized risk of material cost increases and design delays. The resulting baseline total project cost was $1,339,548,586, an increase of $440,211,586 over the Critical Decision 2 baseline estimate.

The cost and schedule confidence levels established at Critical Decision 3 in 2009 were a cost of $1,340 million at a 95 percent confidence level and a completion date of October 2015, which includes 126 weeks of schedule contingency, at a 95 percent confidence level.

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 (includes 126 weeks of contingency)

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			
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	151,743
FY 2011	234,118	234,118	330,878
FY 2012	170,071	170,071	230,782
FY 2013	22,834	22,834	22,834
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	155,459
FY 2011	234,118	234,118	330,878
FY 2012	170,071	170,071	230,782
FY 2013	22,834	22,834	22,834
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	12,672
FY 2011	25,202	25,202	36,814
FY 2012	32,579	32,579	38,789
FY 2013	57,963	57,963	58,075
FY 2014	5,403	5,403	5,403

	(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	12,672
FY 2011	25,202	25,202	36,814
FY 2012	32,579	32,579	38,789
FY 2013	57,963	57,963	63,478
FY 2014	5,403	5,403	5,403
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 [a]	106,824	106,824	129,218
FY 2009	168,657	168,657	119,684
FY 2010	259,320	259,320	168,131
FY 2011	259,320	259,320	367,692
FY 2012	202,650	202,650	269,571
FY 2013 [b]	80,797	80,797	80,909
FY 2014 [b]	5,403	5,403	5,403
Total, TPC	1,339,548	1,339,548	1,339,548

(a) Includes a Congressional Reprogramming of $15,000,000 from the construction project (05-D-405) to Project Engineering and Design (03-D-414)
(b) In accordance with the President's proposal to implement a 5-year non-security discretionary spending freeze, budget figures shown for years after FY 2012 are notional and do not represent policy. Funding decisions will be made on a year-by-year basis.

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

	(dollars in thousands)		
	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total, Construction	895,151	895,151	482,199
Total, TEC	1,138,856	1,138,856	725,904
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	TBD	TBD	TBD	TBD	TBD	TBD
	OPC	11,967	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
	TPC	80,967	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	336,040	0	0	0	0	0	0	0	336,040
	OPC	103960	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	120952	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
FY 2010	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
FY 2012	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

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 contactor staff will be involved in areas concerning high-level waste system interfaces, feed, and product specifications, etc.

Lawrence Livermore National Laboratory

Funding Schedule by Activity

	(Dollars in Thousands)	
	FY 2010 Current Appropriation	FY 2012 Request
Defense Environmental Cleanup		
NNSA Sites		
Lawrence Livermore National Laboratory		
VL-FOO-0013B-D / Solid Waste Stabilization and Disposition Support - Lawrence Livermore National Laboratory (Defense)	238	238
VL-LLNL-0031 / Soil and Water Remediation-Lawrence Livermore National Laboratory - Site 300	2,686	635
Subtotal, Lawrence Livermore National Laboratory	2,924	873

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. The characterization of Operable Unit 9, Building 812 Firing Table is underway, once complete and a cleanup remedy is selected and approved by the regulators, EM will initiate the cleanup and complete all activities at Site 300.

Site Description

- 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 will be 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 is underway and will remain the responsibility of EM a remedial alternative is selected and implemented and the project is complete.

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 actions be taken. A Remedial Investigation/Feasibility Study is currently being revised to define alternatives for the remediation needed in this area based on EM headquarters recommendations.

Regulatory Framework

The Environmental Restoration activities at Lawrence Livermore National Laboratory Site 300 are governed by site-specific agreements.

- Comprehensive Environmental Response Compensation and Liability Act.
- Federal Facility Agreement (1992).
- Record of Decision (2008) establishing ground water cleanup standards.

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 Lawrence Livermore National Laboratory operates under the LLC contact, 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 characterization of contaminants at Operable Unit 9 Building 812 Firing Table is currently underway.

Detailed Justification

	(dollars in thousands)	
	FY 2010 Current Appropriation	FY 2012 Request
VL-FOO-0013B-D / Solid Waste Stabilization and Disposition Support - Lawrence Livermore National Laboratory (Defense)	**238**	**238**

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

The activities in this PBS support the cleanup activities at Site 300 that will be completed with the remediation of contaminated soil at Operable Unit 9, Building 812 Firing Table. 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 2010, the following activities were completed:

- Maintained regulatory interactions in support of Building 812 Firing Table cleanup.

In FY 2012, the following activities are planned:

- Support the Lawrence Livermore National Laboratory Site 300 Building 812 soil and groundwater remediation and the grants with the State of California Regional Water Quality Control Board and Department of Toxic Substances.

VL-LLNL-0031 / Soil and Water Remediation- Lawrence Livermore National Laboratory - Site 300	**2,686**	**635**

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

(dollars in thousands)

FY 2010 Current Appropriation	FY 2012 Request

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 remediation network system will address risk reduction associated with groundwater contamination and will complete the project.

The characterization of Operable Unit 9 Building 812 Firing Table is underway and will remain the responsibility of EM until a remedial alternative is selected and implemented and the project is complete.

In FY 2010, the following activities were completed:

- Completed soil removal action at the Building 850 Firing Table and prepared of a bid and awarded contract for the surface and subsurface soil surveys, and began preparation of the Building 812 soil Characterization Work Plan for regulatory review and approval.

- Received approval of Critical Decision-4, denoting project completion for the Office of Environmental management's soil and groundwater cleanup scope at Operable Units 1-8 with remaining EM cleanup work to be done at bldg 812 Operable Unit 9.

In FY 2012, the following activities are planned:

- Perform modification to the Building 812 groundwater extraction and treatment system, and revise the human health and ecological risk assessment to support a new soil remedial alternative for the Feasibility Study for the Building 812 area.

Key Accomplishments (FY 2010)/Planned Milestones (FY 2012)

- Complete Building 812 Soil Characterization (November 2011)

Total, Lawrence Livermore National Laboratory	**2,924**	**873**

Explanation of Funding Changes

	FY 2012 vs. FY 2010 Current Approp. ($000)
Defense Environmental Cleanup	
NNSA Sites	
Lawrence Livermore National Laboratory	
VL-LLNL-0031 / Soil and Water Remediation-Lawrence Livermore National Laboratory - Site 300	
▪ Decrease reflects the completion of soil removal activities at the Building 850 Firing Table.	-2,051
Total, Lawrence Livermore National Laboratory	**-2,051**

Los Alamos National Laboratory

Funding Schedule by Activity

	($ in thousands)	
	FY 2010 Current Appropriation	FY 2012 Request
Defense Environmental Cleanup		
NNSA Sites		
Los Alamos National Laboratory		
VL-LANL-0013 / Solid Waste Stabilization and Disposition-LANL Legacy	107,005	187,059
VL-LANL-0030 / Soil and Water Remediation-LANL	90,495	162,246
VL-LANL-0040-D / Nuclear Facility D&D-LANL (Defense)	0	8,634
Subtotal, Los Alamos National Laboratory	197,500	357,939
NNSA Service Center/Separations Processing Research Unit (SPRU)		
VL-FAO-0101 / Miscellaneous Programs and Agreements in Principle	2,938	0
Total, NNSA Sites	200,438	357,939
Community, Regulatory and Program Support		
NNSA Service Center/Separations Processing Research Unit (SPRU)		
VL-FAO-0101 / Miscellaneous Programs and Agreements in Principle	0	3,638
Total, Defense Environmental Cleanup	200,438	361,577

In FY 2012, EM will be consolidating EM Headquarters policy and oversight activities, community and regulatory support and contract/post closure activities across the EM complex into a single control point. The consolidation of these activities into a single control point will allow for greater transparency and accountability of overhead activities but will also provide flexibility during the year of execution. While these activities are being consolidated into a single control point, the individual activities will continue to be displayed within the site chapters of the EM budget.

The funding table below provides a comparable display of the impacted activities and a comparable display will be continued throughout this budget chapter to aid in budget review.

Funding Schedule by Activity

	($ in thousands)	
	FY 2010 Current Appropriation	FY 2012 Request
Defense Environmental Cleanup		
NNSA Sites		
VL-LANL-0013 / Solid Waste Stabilization and Disposition-LANL Legacy	107,005	187,059
VL-LANL-0030 / Soil and Water Remediation-LANL	90,495	162,246
VL-LANL-0040-D / Nuclear Facility D&D-LANL (Defense)	0	8,634
Subtotal, NNSA Sites	197,500	357,939
Community, Regulatory and Program Support		
VL-FAO-0101 / Miscellaneous Programs and Agreements in Principle	2,938	3,638
Total, Defense Environmental Cleanup	200,438	361,577

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. Los Alamos National Laboratory highest priorities for the cleanup mission are to maintain safety and compliance with the FY2005 Consent Order. EM will continue to aggressively pursue cleanup in accordance with the Consent Order while working with regulators to facilitate cleanup as quickly as possible.

Site Description

- Forty square mile site, 60 miles north-northeast of Albuquerque in north-central New Mexico and 25 miles northwest of Santa Fe.
- Undeveloped tracts of land North, West, and South surrounding Los Alamos National Laboratory are held by other Federal agencies.
- 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

- Develop a comprehensive and detailed plan for cleanup of Environmental Management legacy waste sites at Los Alamos.
- Continue 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.
- Conduct assessments and corrective actions at contaminated sites to reduce unacceptable human health and ecological risks, and to reduce the inventory of legacy transuranic waste.
- Restoration strategy is risk-based and complies with regulatory requirements to provide for future land use scenarios.
- Disposition strategy for transuranic waste is to characterize, package, and ship waste to the Waste Isolation Pilot Plant.
- Decontamination and decommissioning and demolition of process-contaminated facilities at Technical Area-21 and waste management facilities at Technical Area-54 allows for characterization and cleanup of Solid Waste Management Units which are collocated in the footprint of the structures.

Site Completion (End State)

- Protection and monitoring of the regional aquifer which is the drinking water source for Los Alamos County.
- Cleanup of sites at Los Alamos National Laboratory and surrounding areas to levels appropriate for the intended land use.
- Decontamination, decommissioning, and removal of process contaminated facilities at Technical Area-21 and waste management facilities at Technical Area-54.
- Disposal of all legacy transuranic waste and mixed low-level waste from Los Alamos National Laboratory.
- 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.

Technical Area -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 New Mexico Environment Department is evaluating cleanup alternatives, has directed revisions to the evaluation 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 started in last quarter FY 2009 and continued through 2010, and should complete in 2011.

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 Technical Area -21, is FY 2012. Material Disposal Area T will necessarily continue into FY 2013 for a project start (cap) as the New Mexico Environment Department has not specified a remedy yet.

Material Disposal Area-A - The project will remediate three components; a central pit, two trenches, and two General's Tanks. Most all of the contents of the central pit and eastern trenches are assumed to be radioactive low-level waste with a fraction assumed to be mixed low-level waste. The General's Tanks were plutonium solution recovery tanks that were cleaned before closure, may contain some heel material, and will be removed and disposed. The specific remedy for the tanks has not been specified by the New Mexico Environment Department. The pit, trenches, and tank areas will be backfilled and final grading will be performed over all the excavated areas. Although this project is undergoing independent project review in the Fall of 2011, Material Disposal Area-A has a completion date of May 2012 in the Consent Order between Los Alamos National Laboratory and the New Mexico Environment Department.

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.

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 waste include:

- 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.

- 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, and the Clean Air Act
- 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 phases of characterization in addition to assumed plans that have already been imposed on the site in the last 3 years. Also New Mexico Environment Department 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 at levels that are protective of human, 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
- 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

- Off-site treatment and disposal facilities for mixed low-level and low-level wastes

Contract Synopsis

A new contract was awarded in December 2005 to Los Alamos National Security, LLC, which assumed responsibility on June 1, 2006.

- The 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, signed in 2005. 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 foot print, allows for the transfer to lands to the County of Los Alamos and other property owners, reduces risk to the citizens of Los Alamos County, and surrounding Pueblo lands, and protects groundwater and surface waters of the State.

Detailed Justification

(dollars in thousands)

	FY 2010 Current Appropriation	FY 2012 Request
VL-LANL-0013 / Solid Waste Stabilization and Disposition-LANL Legacy	**107,005**	**187,059**

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

The Solid Waste Stabilization and Disposition PBS, also known as the Legacy Waste Disposition Project, is comprised of the characterization treatment, storage, transportation and disposition 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.

(dollars in thousands)

FY 2010 Current Appropriation	FY 2012 Request

This PBS scope is integrated with the Soil and Water Remediation PBS (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 PBS 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 PBS and the Los Alamos National Laboratory for contact- and remote-handled transuranic waste retrieval and disposition.

In FY 2010, the following activities were completed:

- Implemented the revised Area G BIO upgrade.
- Completed disposition of 400 drums of mixed low-level (reclassified transuranic waste).
- Completed field characterization of 33 shafts to support final disposition.
- Repacked 2,300 Drum Equivalents of Contact- Handled transuranic waste.
- Shipped 158 transuranic shipments to Waste Isolation Pilot Plant.

In FY 2012, the following activities are planned:

- Complete services and action to maintain safe operations associated with the stored transuranic inventory such as safe configuration and within prescribed Material at Risk limits.
- Conservation and Recovery Act permit, and conceptual design and cost estimate prepared for Contact-Handled transuranic Retrieval scope to support the Capital Critical Decision process.
- Develop critical decision project documents for retrieval operations of Trenches A-D, PIT-9 and corrugated metal pipes project.
- Disposition of mixed low-level waste/low-level waste and transuranic waste.
- Construction of a modular box line and disposition of excess materials in TA-54 to remain compliant for the new Resource Conservation and Recovery Act permit.
- Decommission and demolition of TA-54 Area G structures on Pad 9 including 54-0229, -0230, -0231, -0232; structures on Pad 5 including 54-0049 and -0224; and structures on Pad 6 including 54-0153 and -0283.

(dollars in thousands)

FY 2010 Current Appropriation	FY 2012 Request

Key Accomplishments (FY 2010)/Planned Milestones (FY 2012)

- Hot Cell Liner Start (Safety Basis) (April 2012)
- Begin Retrieval Operations for Trenches A-D (July 2012)

VL-LANL-0030 / Soil and Water Remediation-LANL 90,495 162,246

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

The Los Alamos National Laboratory Soil and Water Remediation PBS scope includes identification, investigation and remediation of chemical and or radiological contamination attributable to past Laboratory operations and practices. The remaining scope of the PBS includes characterization, monitoring, and protection of the surface and groundwater at the Laboratory and approximately 860 Potential Release Sites left to be investigated, remediated or closed by evaluation and assessment of human health and ecological risks. Included in the scope for the 860 sites remaining to be addressed are: 1) characterization and final remedy of eight priority material disposal areas which are to follow the Resource Conservation and Recovery Act corrective measures study and implementation process. One of the material disposal areas, at Technical Area-54, is the former and active radioactive waste disposal area for the Laboratory; 2) protection and monitoring of groundwater resources to ensure protection of drinking water supplies; 3) remediation of Technical Area-21, including 3 material disposal areas and over 100 Solid Waste Management Units.

In FY 2010, the following activities were completed:

- Continued groundwater sampling included in the 2009 Interim Facility-Wide Groundwater Monitoring Plan consistent with the Consent Order and the Resource Conservation and Recovery Act Operating Permit; continued reporting groundwater results in watershed Periodic Monitoring Reports consistent with Consent Order and the Resource Conservation and Recovery Act Operating Permit; completed Potrillo Fence Canyons Field Sediment Investigation.

- Completed the Sandia Canyon Investigation Report and Sandia Canyon Phase II Work Plan.

- Completed Pueblo Canyon Grade Control Structure and Stream Gage E060 construction and submittal of associated Completion Report.

- Completed characterization for Upper Sandia Canyon and Upper Cañada del Buey Aggregate Areas; completed field work Investigation Report for Technical Area (TA)-49 Sites Inside and Outside the Nuclear Environmental Site Boundary.

(dollars in thousands)

FY 2010 Current Appropriation	FY 2012 Request

- Completed Phase II field work and the Phase II Investigation Report for Material Disposal Area C; completion of Chaquehui Canyon, Lower Pajarito Canyon, Upper Water Canyon, and Upper Pajarito Canyon Aggregate Area Work Plans.

- Completed monitoring and maintenance activities for surface remedy at 260 Outfall in Cañon de Valle.

- Completed the Technical Area-16 260 Outfall Surface Corrective Measures Implementation installation of remedies.

- Completed Demolition Documentation Report for Bayo Wastewater Treatment Plant, Solid Waste Management Unit 00-118(b).

- Completed removal and waste disposal activities and construction of retention basins at Solid Waste Management Unit 01-001(f).

- Completed fieldwork and reporting (and approval) to U.S. Environmental Protection Agency for the Technical Area-21 Polychlorinated biphenyls site cleanup; completed cleanup fieldwork and reporting to New Mexico Environment Department for the DP Site Aggregate Phase II for 35 sites.

- Developed baseline risk assessment for Material Disposal Area T, including new geologic model and new conceptual site model and a groundwater network evaluation report to New Mexico Environment Department for Material Disposal Area T and Technical Area-21.

- Completed Installation, monitoring and New Mexico Environment Department reporting for new, deep vapor monitoring wells at Material Disposal Area T and V.

In FY 2012, the following activities are planned:

- Complete and deliver the revised Corrective Measures Evaluation Report for Material Disposal Area G to meet Consent Order cleanup requirements; completion and delivery of the Statement of Basis for Material Disposal Area H and L; initiate Corrective Measures Implementation Design for Material Disposal Area H and L; and continued vapor monitoring and reporting at Material Disposal Areas G, H, and L.

- Complete Material Disposal Area an exhumation of the wastes in the central pit and eastern trenches, remove and dispose of the General's Tanks, backfill the excavation areas, cover and sample the area for release.

- Continue to provide services such as database management, computer support, information

(dollars in thousands)

FY 2010 Current Appropriation	FY 2012 Request

management, records processing, GIS support, and database interface; meet Consent Order requirements for reporting and access to data by the Public through web-based databases (e.g. RACER).

- Complete the Annual and Semi-Annual reporting requirements under the Environmental Protection Agency Individual Permit of February 2009.
- Complete groundwater monitoring and reporting requirements consistent with Consent Order and the Resource Conservation and Recovery Act Operating Permit; continue storm-water sampling, sediment monitoring, mitigation and reporting requirements consistent with the Individual Permit.
- Continue High and Moderate Priority Site corrective action requirements consistent with the Individual Permit; completion of Asphalt Monitoring and Removal Report for Guaje/Barrancas/Rendija Canyons Aggregate Area; completion of 2009 biennial Ordnance Survey Report for Guaje/Barrancas/Rendija Canyons Aggregate.
- Complete Phase II characterization activities for Upper Los Alamos Canyon Aggregate Area; completion of Phase II Investigation Report for Upper Los Alamos Canyon Aggregate Areas.

Key Accomplishments (FY 2010)/Planned Milestones (/FY 2012)

- Complete construction of 260 Outfall CMI for alluvial/surface water treatment system (FY 2010)
- S-Site Aggregate Area Investigation Report (FY 2010)
- Complete phase 2 investigation and report for Pueblo Canyon Aggregate Area (FY 2010)
- MDA L Corrective Measure Evaluation Report, R1 (FY 2010)
- Complete and submit CME Plans for MDA C (February 2012)
- DP West Buildings 21-005, 21-150 Building Footprint Letter Work Plan (May 2012)
- Phase II Investigation/Remediation Report for Material Disposal Area (MDA) A (May 2012)
- Individual Permit Metals Background Report (June 2012)
- Annual Surface Flow Report (July 2012)
- MDA T, Periodic Monitoring Reports (September 2012)
- 260 Outfall, Periodic Monitoring Report (September 2012)
- Complete MDA T CME report (September 2012)
- Completion of Sandia Canyon Investigation Phase II Report (September 2012)

(dollars in thousands)

	FY 2010 Current Appropriation	FY 2012 Request
▪ Los Alamos/Pueblo Canyon Aggregate Areas Remedy Completion Reports (September 2012) ▪ Phase II Investigation Report for Upper Los Alamos Canyon Aggregate Areas (September 2012) ▪ Start of Characterization Activities for DP West Building 21-257 (September 2012)		
VL-LANL-0040-D / Nuclear Facility D&D-LANL (Defense)	**0**	**8,634**

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 2010, the following activities were completed:

- Completed deactivation and decommissioning of 54-0226 (21,718 ft^2) and 54-0281 (4,160 ft^2) at Area G.
- Completed deactivation and decommissioning of 54-0062 (3,852 ft^2) and 54-0216 (3,306 ft^2) at Area L.
- Completed the removal of over 2600 ft^2 of concrete pad at Area L (54-0035, 54-0036, and 54-0058).
- Oversight and integration coordination with Readiness in Technical Base and Facilities for deactivation of building 21-257 that was funded by NNSA.
- Assessment of facility, including tanks, lines and process equipment and compilation facility characterization plan for building 21-257.
- Compilation of capital project baseline for Technical Area-21 deactivation and decommissioning, including all facilities not included in the baseline for American Recovery and Reinvestment Act.

In FY 2012, the following activities are planned:

- The budget request for FY 2012 for these Capital Projects (TA-21 and TA-54 D&D) support activities required for Consent Order compliance including:
    - Deactivation and decommissioning of the remaining structure, 54-0215, at Area L.

(dollars in thousands)

FY 2010 Current Appropriation	FY 2012 Request

- Initiate deactivation and decommissioning of the structures located at Area G including:
  - Pad 5 (54-0049 and 54-0224)
  - Pad 6 (54-0153 and 54-0283)
  - Pad 9 (54-0229, 54-0230, 54-0231, and 54-0232)
  - Structure (54-0008)
- Characterization of structure 21-257 (Solid Waste Management Unit 21-011(a)) for decommission and demolition preparation.

Key Accomplishments (FY 2010)/Planned Milestones (FY 2012)

- Start D&D Field Work at DP West (FY 2010)
- DP West Building 21-257 Building Footprint Letter Work Plan (September 2012)

VL-FAO-0101 / Miscellaneous Programs and Agreements in Principle **2,938** **3,638**

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

This PBS provides support for the New Mexico Agreement in Principle and the Natural Resource Damage Assessment at Los Alamos National Laboratory. In which, a preassessment screening, representing the first phase of a Natural Resource Damage Assessment for the Los Alamos National Laboratory site has been completed and the Los Alamos National Laboratory Natural Resource Trustee Council concluded that a full assessment can be conducted.

In FY 2010, the following activities were completed:

- Supported the New Mexico Agreement in Principle.
- Supported the Natural Resource Damage Assessment at Los Alamos National Laboratory.

In FY 2012, the following activities are planned:

- Support the New Mexico Agreement in Principle.
- Support the Natural Resource Damage Assessment at Los Alamos National Laboratory.

(dollars in thousands)

	FY 2010 Current Appropriation	FY 2012 Request
Total, Los Alamos National Laboratory	**200,438**	**361,577**

Explanation of Funding Changes

	FY 2012 vs. FY 2010 Current Approp. ($000)
Defense Environmental Cleanup	
Community, Regulatory and Program Support	
NNSA Service Center/Separations Processing Research Unit (SPRU)	
VL-FAO-0101 / Miscellaneous Programs and Agreements in Principle	
▪ No significant change.	700
NNSA Sites	
Los Alamos National Laboratory	
VL-LANL-0013 / Solid Waste Stabilization and Disposition-LANL Legacy	
▪ Increase reflects additional disposal and processing of Transuranic mixed low level waste/low level waste and developing critical decision documents for "Corrugated Metal Pipes" projects.	80,054
VL-LANL-0030 / Soil and Water Remediation-LANL	
▪ Increase reflects additional regulatory requirements needed to meet the 2015 completion date, including a new remedy (excavation) for material disposal area A, new deep groundwater and vapor monitoring wells, additional groundwater sampling and analyses, and additional investigation phases and pilot tests for several material disposal areas.	71,751
VL-LANL-0040-D / Nuclear Facility D&D-LANL (Defense)	
▪ Increase reflects the cleanup of decontamination and decommissioning activities at Technical Area-21 and Technical Area-54 to meet Consent Order milestones.	8,634
Total, Los Alamos National Laboratory	**161,139**

Nevada

Funding Schedule by Activity

	($ in thousands)	
	FY 2010 Current Appropriation	FY 2012 Request
Defense Environmental Cleanup		
NNSA Sites		
Nevada		
VL-NV-0030 / Soil and Water Remediation-Nevada	57,794	58,872
VL-NV-0080 / Operate Waste Disposal Facility-Nevada	14,055	4,508
VL-NV-0100 / Nevada Community and Regulatory Support	2,556	0
Subtotal, Nevada	74,405	63,380
Community, Regulatory and Program Support		
Nevada		
VL-NV-0100 / Nevada Community and Regulatory Support	0	2,620
Total, Defense Environmental Cleanup	74,405	66,000

In FY 2012, EM will be consolidating EM Headquarters policy and oversight activities, community and regulatory support and contract/post closure activities across the EM complex into a single control point. The consolidation of these activities into a single control point will allow for greater transparency and accountability of overhead activities but will also provide flexibility during the year of execution. While these activities are being consolidated into a single control point, the individual activities will continue to be displayed within the site chapters of the EM budget.

The funding table below provides a comparable display of the impacted activities and a comparable display will be continued throughout this budget chapter to aid in budget review.

Funding Schedule by Activity

	($ in thousands)	
	FY 2010 Current Appropriation	FY 2012 Request
Defense Environmental Cleanup		
NNSA Sites		
VL-NV-0030 / Soil and Water Remediation-Nevada	57,794	58,872
VL-NV-0080 / Operate Waste Disposal Facility-Nevada	14,055	4,508
Subtotal, NNSA Sites	71,849	63,380
Community, Regulatory and Program Support		
VL-NV-0100 / Nevada Community and Regulatory Support	2,556	2,620
Total, Defense Environmental Cleanup	74,405	66,000

Site Overview

In August of 2010, the National Nuclear Security Administration announced the Nevada Test Site was renamed the Nevada National Security Site to reflect the diversity of nuclear, energy and security activities conducted at the site. The Nevada National Security 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 National Security 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 National Security 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 National Security Site after July 1962 were underground.

Site Description

- Located 65 miles northwest of Las Vegas, Nevada and occupies approximately 1,360 square miles.
- 4,500 square miles of federally owned and Department of Defense-controlled land

  includes Tonopah Test Range, which is used for military training.
- 75 percent of its perimeter surrounded by Federal installations with strictly controlled access.
- 25 percent adjacent to public lands that are open to public entry.

Site Cleanup Strategy/Scope of Cleanup

- Consists of two primary activities: environmental restoration and waste management.
- Environmental restoration project scope is to assess and perform appropriate corrective actions at approximately 900 former underground test locations, approximately 100 surface or near-surface soil contamination locations and more than 1,000 other industrial-type sites.
- Contamination at these Nevada National Security 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.

- Environmental restoration project scope addresses surface and shallow subsurface radiological soil contamination on the Nevada National Security Site and Nevada Test and Training Range.
- Waste Management 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.

Site Completion (End State)

- The lifecycle planning is estimated in the range of 2027 to 2038 for the cleanup end date.

Regulatory Framework

Nevada Site Office work at Nevada National Security Site and Nevada Test and Training Range follows all applicable federal level regulations:

- The Resource Conservation and Recovery Act.
- Clean Air Act, Clean Water Act, and Atomic Energy Act.
- DOE Orders, and applicable Nevada specific laws, codes and acts.
- The Federal Facility Agreement and Consent Order (1996, as amended March 2010) for environmental restoration activities.
- The Federal Facility Compliance Act under the waste management project.

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 National Security 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

- Numerous DOE sites are dependent on Nevada National Security Site for disposal of low-level waste and mixed low-level waste.
- The Nevada National Security Site is dependent on Waste Isolation Pilot Plant for disposition of transuranic waste.
- 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.
- The 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.
- The 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

EM scope at the Nevada Site Office, Nevada National Security Site and Training Range operates under two primary contractors.

- The Management and Operating Contractor is contracted to perform environmental restoration field remediation activities and the waste management scope.
- The Environmental Characterization and Remediation Services Contractor is contracted to perform site investigation and characterization activities.

Cleanup Benefits

The near- and long-term benefits from the 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 DOE missions. Disposing of radioactive waste from storage locations and across the DOE complex in engineered disposal facilities at the Nevada National Security Site will substantially reduce health and environmental risks at other DOE sites.

Detailed Justification

(dollars in thousands)

	FY 2010 Current Appropriation	FY 2012 Request
VL-NV-0100 / Nevada Community and Regulatory Support	**2,556**	**2,620**

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

This PBS provides support for Agreements in Principle with two 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 2010, the following activities were completed:

- Provided 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.

In FY 2012, 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.

Key Accomplishments (FY 2010)/Planned Milestones (FY 2012)

- Provide Regulator and Stakeholder Funding (FY 2010/September 2012)

VL-NV-0030 / Soil and Water Remediation-Nevada	**57,794**	**58,872**

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

The overall objective of this PBS is to provide for appropriate risk-based remediation of contaminated support facilities, soils, and groundwater on the Nevada National Security Site, formerly the Nevada Test Site, and the U.S. Air Force's Nevada Test and Training Range. Surface and subsurface contamination of industrial and soil contaminated sites is the result of historic atmospheric and underground nuclear tests. The cleanup is complex due to the number of sites, nature/extent of

(dollars in thousands)

FY 2010 Current Appropriation	FY 2012 Request

contamination, and site size/location. The surface contamination includes over 1,000 industrial-type sites and approximately 100 soil contamination sites on the Nevada National Security Site and Nevada Test and Training Range. The subsurface contamination includes approximately 900 groundwater contamination sites on the Nevada National Security 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 2010, the following activities were completed:

- Continued progress toward closure of approximately 900 subsurface contaminated groundwater sites on the Nevada National Security Site; completed design of the Frenchman Flat monitoring network. Drill two data acquisition wells in Pahute Mesa; completed three Pahute Mesa Phase II well development, testing, and sampling operations; continued Yucca Flat Phase I contaminant boundary groundwater modeling activities; continued Rainier Mesa Phase I source term, flow model, and transport model activities.
- Continued decontamination and decommissioning activities at the Test Cell C Facility.
- Completed Phase I Contaminant Boundary Flow Model reviews and Phase I Transport model Analysis and Evaluation for Yucca Flat groundwater Corrective Action Unit.
- Completed characterization and determination of corrective actions for closure of two soil contamination sites on the Nevada National Security Site.

In FY 2012, the following activities are planned:

- Continue progress toward closure of approximately 900 subsurface contaminated groundwater sites.
- Complete the Yucca Flat Phase I contaminant boundary transport model and Phase II corrective action investigation plan addendum.
- Drill/install two wells in Frenchman Flat and Pahute Mesa.
- Complete three Pahute Mesa Phase II well development, testing, and sampling operations.
- Continue Rainier Mesa Phase I contaminant boundary transport model activities.
- Complete planning activities to implement corrective actions at six soil contamination sites.

(dollars in thousands)

FY 2010 Current Appropriation	FY 2012 Request

- Complete characterization and determination of corrective actions for 41 soil contamination sites.
- Complete initial investigation activities for 37 soil contamination sites.

Key Accomplishments (FY 2010)/Planned Milestones (FY 2012)

- Complete assessment and closure activities for industrial-type sites on the NTS and TTR (FY 2010)
- Continue underground test area analysis, evaluation, and monitoring network activities on the NTS (FY 2010)
- Complete Assessment and Closure Activities for Contaminated Waste Sites on the NTS and TTR (September 2012)
- Continue Underground Test Area Analysis, Evaluation, and Monitoring Network Activities on the NTS (September 2012)

VL-NV-0080 / Operate Waste Disposal Facility-Nevada	**14,055**	**4,508**

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

This PBS 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 for this PBS 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 National Security Site, formerly 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. The State provided regulatory approval for a new mixed low-level waste disposal cell was operational in FY 2011. The total Nevada Test Site low-level waste, mixed low-level waste, and classified matter waste life-cycle volume from complex-wide generators is projected to be over 1.3 million cubic meters.

In FY 2010, the following activities were completed:

- Continued 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.
- Continued audits and waste certification reviews in support of generator programs to ensure compliance with the Nevada Test Site Waste Acceptance Criteria.

(dollars in thousands)

FY 2010 Current Appropriation	FY 2012 Request

- Supported the EM complex by disposing an estimated 63,390 cubic meters of low-level waste including classified waste and mixed low-level waste at the Nevada Test Site from off-site generators.

- Completed new Resource Conservation and Recovery Act mixed low-level waste disposal cell.

In FY 2012, the following activities are planned:

- 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.

- Continue audits and waste certification reviews in support of generator programs to ensure compliance with the Nevada Test Site Waste Acceptance.

- Continue operations of Resource Conservation and Recovery Act mixed low-level waste disposal cell.

Key Accomplishments (FY 2010)/Planned Milestones (FY 2012)

- Dispose LLW in support of the DOE Complex; conduct audits; maintain technical/safety documentation (FY 2010)

- Dispose Low-Level Waste and Mixed Low-Level Waste (FY 2010)

- Dispose LLW in Support of DOE Complex; Conduct Audits; Maintain Technical/Safety Documentation (September 2012)

Total, Nevada	**74,405**	**66,000**

Explanation of Funding Changes

	FY 2012 vs. FY 2010 Current Approp. ($000)
Defense Environmental Cleanup	
Community, Regulatory and Program Support	
Nevada	
VL-NV-0100 / Nevada Community and Regulatory Support	
▪ No significant change.	64
NNSA Sites	
VL-NV-0030 / Soil and Water Remediation-Nevada	
▪ Increase reflects support for initial investigation activities and closure of soil contamination sites at the Nevada National Security Site.	1,078
VL-NV-0080 / Operate Waste Disposal Facility-Nevada	
▪ Decrease reflects completion of new Resource Conservation and Recovery Act mixed low-level waste disposal cell in FY 2010.	-9,547
Total, Nevada	**-8,405**

West Valley Demonstration Project

Funding Schedule by Activity

	($ in thousands)	
	FY 2010 Current Appropriation	FY 2012 Request
Non-Defense Environmental Cleanup		
West Valley Demonstration Project		
OH-WV-0013 / Solid Waste Stabilization and Disposition-West Valley	18,271	7,910
OH-WV-0040 / Nuclear Facility D&D-West Valley	39,803	50,490
Subtotal, West Valley Demonstration Project	58,074	58,400

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.

Site Description

- Located approximately 40 miles south of Buffalo, New York, the West Valley Demonstration Project occupies the site of the only commercial nuclear fuel reprocessing facility to have operated in the United States. During commercial operations of the site in the late 1960's and early 1970's, approximately 640 metric tons of spent nuclear fuel was reprocessed. Reprocessing operations were halted between 1972 and 1976 to support facility modifications, but operations never resumed.
- With the enactment of the West Valley Demonstration Project Act in 1980, DOE became responsible for certain facilities at the site. At that time, approximately 600,000 gallons of liquid high-level waste were stored in two single shelled, carbon steel underground tanks. Since then, DOE

has performed waste disposition, decontamination, deactivation, and disposition of facilities, and infrastructure/landlord activities. To date, the Department has completed liquid high- level waste solidification efforts by solidifying over 600,000 gallons of high-level waste into 275 canisters and shipped over 1,000,000 cubic feet of low-level waste.

- 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 elements associated with decommissioning of the West Valley Demonstration Project were considered during development of the Decommissioning and/or Long Term Management Environmental Impact Statement. A Record of Decision was issued in April 2010 outlining DOE's plan for completing its remaining responsibilities. To that end, DOE will continue to focus on low-level and transuranic waste disposition, decontamination and removal of the Main Plant Process Building, and removal of non-essential facilities. In addition, DOE has installed a permeable treatment wall to mitigate the spread of a ground water plume, and is installing a tank and vault drying system to safely manage the High-Level Waste tanks until their final closure pathway is determined. DOE will relocate the 275 high-level waste canisters that are currently stored in the Main Plant Process Building (the original reprocessing facility) to a new on-site storage facility. After the high-level waste canisters are moved, the Main Plant Process Building will be decontaminated and demolished consistent with the Environmental Impact Statement Record of Decision.

Site Completion (End State)

The West Valley Demonstration Project End State is defined as:

- Disposition and shipment of all low-level waste and transuranic waste generated by DOE as a result of the high-level waste solidification project;

- Deactivation, decontamination, demolition, and removal of all DOE-managed facilities, including the former spent nuclear fuel reprocessing facility (Main Plant Process Building; the Remote-Handled Waste Facility; and the Vitrification Facility);

- Storage of the high-level waste canisters until off-site removal can be negotiated;

- Maintenance of the permeable treatment wall to mitigate the North Plateau Strontium-90 Plume.

The Final Environmental Impact Statement for Decommissioning, and/or Long Term Stewardship of the West Valley Demonstration Project and Western New York Nuclear Service Center Record of Decision, issued in April 2010, established long-term activities required to achieve final site end state. The Record of Decision selected Phased Decommissioning for the West Valley Demonstration Project which will occur in two phases. Phase 1 would include:

- Construction of High-Level Waste Canister Load-out Facility and a Dry Storage Facility;
- Relocation high-level waste canisters from the Main Plant Process Building to the Dry Storage Facility;
- Final decommissioning of the Main Plant Process Building and the Vitrification Facility, and underlying source area of the North Plateau Groundwater Plume;
- Removal of lagoons 1-5, Neutralization Pit and Interceptors;
- Removal and disposal of any ancillary facility, including foundations and contaminated soil;
- Removal of the Remote-Handled Waste Facility;
- Waste Tank Farm, Nuclear Regulatory Commission licensed disposal area and non-source area of the North Plateau Groundwater Plume to be monitored and maintained in a safe condition.

The Phase 2 decision (to be made within 10 years of the Record of Decision by 2020) will address the future decommissioning of the Waste Tank Farm, and any future obligations DOE has for the Nuclear Regulatory Commission-Licensed Disposal Area. Upon completion of the Phase 2 actions, and the shipment of the high-level waste canisters to a federal repository, DOE will demolish and remove the Dry Storage Facility and support facilities, and transition the portion of the site that DOE controls 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 the Nuclear Regulatory Commission review and consultation during the course of the Project Nuclear Regulatory

Commission completed the review and issued a Technical Evaluation Report supporting the Decommissioning Plan in February 2010.

- 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 issued April 2010. The Record of Decision was "Phased Decision-making" in which the decommissioning will be completed in two phases. Phase 1 activities are expected to take eight to ten years to complete. In addition, during Phase 1, for additional site characterization and scientific studies will be conducted to facilitate consensus decision making for the remaining facilities or areas.

- A Phase 2 decision will be made within ten years after the initial DOE Record of Decision and New York State Energy Research and Development Authority Findings Statement. These decisions would address final closure of the high-level waste tanks, Nuclear Regulatory Commission Licensed Disposal Area, and State Licensed Disposal Area.

Critical Site Uncertainties and Assumptions

The following assumptions support the planning basis for achieving Site 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 Waste Management Record of Decision, as necessary, will allow for off-site disposition of other Project waste (e.g., transuranic waste).

- A Record of Decision for the Greater Than Class C low-level waste disposal Environmental Impact Statement will be issued in 2012, and the non-defense transuranic waste that has been processed, packaged and is currently in storage at West Valley Demonstration Project will meet the disposal site's waste acceptance criteria.

- Waste determinations for waste incidental to reprocessing will permit specific low-level waste streams from decontamination activities to be disposed at federal or commercial disposal facilities.

It is important to note that the largest uncertainties for defining remaining project scope have been reduced or eliminated with the April 2010 issuance of the Final Environmental Impact Statement for Decommissioning and/or Long-Term Stewardship at the West Valley Demonstration Project and Western New York Nuclear Service Center 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 Environmental Impact Statement and resulting Record(s) of Decision.

Contract Synopsis

Data as of December 2010

Contractor	Base Period Current Period	Total Value	Contract Description	Contract Type
West Valley Environmental Services LLC	7/2007 – 6/2011	$331M ($62.8M ARRA; $268.2M Non-ARRA)	Reach interim end state for cleanup of West Valley Demonstration Project	Cost Plus Award Fee

Procurement is ongoing to acquire follow-on contract.

Cleanup Benefits

DOE issued a Record of Decision for the Final Environmental Impact Statement for Decommissioning and/or Long-Term Stewardship at the West Valley Demonstration Project and Western New York Nuclear Service Center in April 2010. The Decommissioning Plan accepted by the Nuclear Regulatory Commission for Phased Decommissioning of the West Valley Demonstration Project was consistent with the Record of Decision. By implementing the Record of Decision, DOE will achieve the following:

- All facilities and infrastructure no longer needed to support safe site operations will be decontaminated and demolished.
- All facilities for which DOE is responsible for decommissioning under the West Valley Demonstration Project Act will be decommissioned with the exception of the Waste Tank Farm and the Dry Storage Facility.
- Any remaining facilities (Dry Storage Facility and the Waste Tank Farm) will require minimum future operation and maintenance costs.
- All low-level waste and other waste with a pathway for disposal will be disposed off site.

All work can be accomplished within current regulatory authorities.

Detailed Justification

(dollars in thousands)

	FY 2010 Current Appropriation	FY 2012 Request
OH-WV-0013 / Solid Waste Stabilization and Disposition-West Valley	**18,271**	**7,910**

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 the waste management activities required to disposition the low-level and transuranic waste produced as a result of high level waste solidification activities. When this project is completed, all West Valley Demonstration Project-generated, low-level waste and transuranic wastes will have been shipped off-site for disposal, reducing worker and environmental risk at the site. In order to prepare for waste disposition efforts associated with transuranic and other high activity waste, a Remote-Handled Waste Facility has been constructed, which provides the capability to safely characterize, size reduce, package and prepare high activity and transuranic waste for off-site shipment and disposal.

In FY 2010, the following activities were completed:

- Processed and disposed of legacy mixed low-level waste to be in compliance with the Site Treatment Plan.
- Continued processing of legacy low-level waste.
- Disposed of legacy/remediation waste.

In FY 2012, the following activities are planned:

- Continue processing, storage, and disposal of legacy and remediation low-level waste.
- Process, store, and dispose of legacy mixed low-level waste to be in compliance with the Site Treatment Plan.

Key Accomplishments (FY 2010)/Planned Milestones (FY 2012)

- Store Transuranic Waste until Disposition Decision (September 2012)

OH-WV-0040 / Nuclear Facility D&D-West Valley	**39,803**	**50,490**

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

(dollars in thousands)

FY 2010 Current Appropriation	FY 2012 Request

The decontamination and decommissioning program at the West Valley Demonstration Project encompasses the facilities, tanks and hardware used during high-level waste solidification efforts. Decontamination and decommissioning activities were subject to a Final Environmental Impact Statement which was completed in January 2010 and a Record of Decision was issued in April 2010. In advance of the issuance of the Final Environmental Impact Statement for Decommissioning and/or Long-Term Stewardship at the West Valley Demonstration Project and Western New York Nuclear Service Center, DOE awarded a contract to West Valley Environmental Services, LCC to continue progress toward an Interim End state. The interim end state will decontaminate the Main Plant Process Building to make it demolition-ready and remove ancillary facilities not needed for managing the high level waste. With the issuance of the Final Environmental Impact Statement for Decommissioning and/or Long-Term Stewardship at the West Valley Demonstration Project and Western New York Nuclear Service Center at the Record of Decision, the decontamination and decommissioning will be performed consistent with the Nuclear Regulatory Commission criteria and the Record of Decision to most effectively reduce worker, public, and environmental risks. In February 2010, the Nuclear Regulatory Commission issued a Technical Evaluation Report providing unconditional approval of the Decommissioning Plan for the Main Plant Process Building, the Vitrification Facility, and the Water Treatment Lagoons (Waste Management Areas 1 and 2). 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 2010, the following activities were completed:

- Maintained services for the site.
- Continued decontamination of the Main Plant Processing Building.

In FY 2012, the following activities are planned:

- Maintain services for the site.
- Begin demolition of the Main Plant Processing Building.
- Begin the design of the High Level Waste Canister Storage Facility.

Key Accomplishments (FY 2010)/Planned Milestones (FY 2012)

- Complete dismantlement/removal of 10 facilities and structures (December 2011)

Total, West Valley Demonstration Project	**58,074**	**58,400**

Explanation of Funding Changes

	FY 2012 vs. FY 2010 Current Approp. ($000)
Non-Defense Environmental Cleanup	
West Valley Demonstration Project	
OH-WV-0013 / Solid Waste Stabilization and Disposition-West Valley	
▪ Decrease in funding reflects an increased focus on nuclear facility D&D at West Valley. Specifically, the reduction in FY 2012 reflects reduced waste processing and shipping to support critical path activities.	-10,361
OH-WV-0040 / Nuclear Facility D&D-West Valley	
▪ The increase reflects an increased focus on nuclear facility D&D at West Valley. Specifically, the increase in FY 2012 supports the start of design work for the High-Level Waste Canister Storage Facility and initiation of Main Plant Demolition.	10,687
Total, West Valley Demonstration Project	**326**

Brookhaven National Laboratory

Funding Schedule by Activity

	($ in thousands)	
	FY 2010 Current Appropriation	FY 2012 Request
Non-Defense Environmental Cleanup		
Small Sites		
Brookhaven National Laboratory		
BRNL-0030 / Soil and Water Remediation-Brookhaven National Laboratory	7,090	8,185
BRNL-0040 / Nuclear Facility D&D-Brookhaven Graphite Research Reactor	4,305	0
BRNL-0041 / Nuclear Facility D&D-High Flux Beam Reactor	3,455	0
BRNL-0100 / Brookhaven Community and Regulatory Support	150	0
Subtotal, Brookhaven National Laboratory	15,000	8,185

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 is underway.

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 2011. 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.
- 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 (FY 2013).
- Activities will continue while the Brookhaven Graphite Research Reactor and High Flux Beam Reactor decontamination and decommissioning is completed in 2018.

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. Active remediation to meet Comprehensive Environmental Response, Compensation, and Liability Act milestones within the Interagency Agreement were completed in 2005.

Critical Site Uncertainties and Assumptions

There are no Critical Site Uncertainties and Assumptions.

Interdependencies

Waste transportation and disposal constitute the most significant inter-site dependencies. Radioactive waste from decontamination and decommissioning will be disposed of at the Nevada National Security 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 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 that the remaining radiological inventory will be addressed some 40 to 64 years in the future when the reactor is removed.

Detailed Justification

(dollars in thousands)

	FY 2010 Current Appropriation	FY 2012 Request
BRNL-0030 / Soil and Water Remediation-Brookhaven National Laboratory	**7,090**	**8,185**

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 2010, the following activities were completed:

- Operated and maintained groundwater treatment plants located on and off site.
- Monitored existing on site landfills.
- Accumulated data from hundreds of monitoring wells (on and off site), and provided results on all activities to the regulatory and public community.

(dollars in thousands)

FY 2010 Current Appropriation	FY 2012 Request

In FY 2012, the following activity is planned:

- Legacy work scope to be completed by the end of FY 2011. EM will support surveillance and maintenance activities for the Soil and Water Remediation Project during FY 2012 and in FY 2013 will initiate the transfer to the Office of Science.

Key Accomplishments (FY 2010)/Planned Milestones (FY 2012)

- FY10 Long-term soil and groundwater operations and environmental stewardship completion. (FY 2010)
- Complete all contractor project closeout and transition activities and achieve site completion. (September 2012)

BRNL-0040 / Nuclear Facility D&D-Brookhaven Graphite Research Reactor **4,305** **0**

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

This PBS scope includes characterization, stabilization, and decontamination and decommissioning of 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 bioshield as well as installation of an engineered cap.

In FY 2010, the following activities were completed:

(dollars in thousands)

FY 2010 Current Appropriation	FY 2012 Request

- Completed phase 1 facility preparation for pile removal.
- Initiated and completed transportation and disposal of graphite waste.
- Initiated planning for bioshield removal.
- ARRA accomplishments include successful completion of phase 2 facility preparation.

In FY 2012, the following activity is planned:

- Legacy work scope to be completed by the end of FY 2011. EM will support surveillance and maintenance activities for the Brookhaven Graphite Research Reactor during FY 2012 and in FY 2013 will initiate the transfer to the Office of Science.

BRNL-0041 / Nuclear Facility D&D-High Flux Beam Reactor	**3,455**	**0**

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 2010, the following activities were completed:

- Completed phase 1 facility preparation for pile removal.
- Initiated and completed transportation and disposal of graphite waste.
- Initiated planning for Bioshield removal.
- ARRA accomplishments include successful completion of phase 2 facility preparation.

In FY 2012, the following activity is planned:

(dollars in thousands)

	FY 2010 Current Appropriation	FY 2012 Request

- Legacy work scope to be completed by the end of FY 2011. EM will support surveillance and maintenance activities for the High Flux Beam Reactor during FY 2012 and in FY 2013 will initiate the transfer to the Office of Science.

BRNL-0100 / Brookhaven Community and Regulatory Support	**150**	**0**

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 2010, the following activities were completed:

- Reviewed and approved regulatory documents.

In FY 2012, the following activity is planned:

- Legacy work scope to be completed by the end of FY 2011. EM will support surveillance and maintenance activities for the High Flux Beam Reactor, the Brookhaven Graphite Research Reactor, and the Soil and Water Remediation Project during FY 2012 and in FY 2013 will initiate the transfer to the Office of Science.

Key Accomplishments (FY 2010)/Planned Milestones (FY 2012)

- The New York State Department of Environmental Conservation will continue Brookhaven oversight. (FY 2010)

Total, Brookhaven National Laboratory	**15,000**	**8,185**

Explanation of Funding Changes

	FY 2012 vs. FY 2010 Current Approp. ($000)
Non-Defense Environmental Cleanup	
Small Sites	
Brookhaven National Laboratory	
BRNL-0030 / Soil and Water Remediation-Brookhaven National Laboratory	
▪ Not a significant change.	1,095
BRNL-0040 / Nuclear Facility D&D-Brookhaven Graphite Research Reactor	
▪ Decrease reflects transition to long-term surveillance and monitoring.	-4,305
BRNL-0041 / Nuclear Facility D&D-High Flux Beam Reactor	
▪ Decrease reflects completion of scope such as tasks associated with Building 750 Stabilization and Transition, Regulatory Oversite and Underground Utilities Removal, completion of the A/B waste line removal, completion of Stabilization for future long term storage and the fan house building 704 demolition and disposal due to American Recovery and Reinvestment Act funding, and 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."	-3,455
BRNL-0100 / Brookhaven Community and Regulatory Support	
▪ Not a significant change.	-150
Total, Brookhaven National Laboratory	**-6,815**

Energy Technology Engineering Center

Funding Schedule by Activity

	($ in thousands) FY 2010 Current Appropriation	FY 2012 Request
Non-Defense Environmental Cleanup		
Small Sites		
Energy Technology Engineering Center		
CBC-ETEC-0040 / Nuclear Facility D&D-Energy Technology Engineering Center	10,500	10,679

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 and liquid metal research (non-defense) at the Santa Susana Field Laboratory (2,850 acres), is a collection of facilities within Area IV. The Energy Technology Engineering Center is surplus to DOE's current mission. Current use of the site involves characterization and site investigation to support clean-up and closure. As a result of past operations, radioactive and chemical contamination exists in several structures (including the Radioactive Materials Handling Facility) and soil and groundwater.

Site Description

- Operated by EM solely to complete site cleanup and closure
- Current use of the site involves characterization and site investigation to support clean-up and closure. 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

There are 18 numbered structures consisting of two radiological facilities, two sodium facilities, and fourteen non-hazardous facilities remaining at the Energy Technology Engineering Center. The former radiological facilities 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). The two sodium facilities are the: Sodium Pump Test Facility and the Hazardous Waste Management Facility (Resource Conservation and Recovery Act Closure Plan pending).

- In addition, there is an ongoing chemical and radiological contamination investigation for soil and groundwater.

Three small groundwater plumes are contaminated primarily with low levels of trichloroethylene and are included in the site wide Resource Conservation and Recovery Act Corrective Action Program. There is also a small tritium plume. The Corrective Action program for DOE activities is a small part of the activity for the entire Santa Susana Field Laboratory.

Site Completion (End State)

Due to an existing Order on Consent and a 2007 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:

- Completion of the Recovery Act funded radiological characterization study by the U.S. Environmental Protection Agency.
- Completion of a chemical background study by the State of California and a radiological background study by the U.S. Environmental Protection Agency.
- Preparation of the Environmental Impact Statement and Record of Decision.
- Decontamination and demolition of the remaining structures.
- Completion of the contaminated Soil and Groundwater Investigation and Cleanup in accordance with the 2010 Order on Consent.
- 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 recently completed negotiation of a Comprehensive Environmental Response, Compensation, and Liability Act based Order on Consent with the California Department of Toxic Substance Control in December 2010 for all remaining soil characterization and building demolition at Energy Technology Engineering Center.

Critical Site Uncertainties and Assumptions

In 2007, DOE was ordered to prepare an Environmental Impact Statement and issue a Record of Decision regarding cleanup at the Energy Technology Engineering Center. The 2010 Order on Consent requires the parties (DOE, State, and Plaintiffs in the Environmental Impact Statement case) to seek relief from the court for preparation of the Environmental Impact Statement in lieu of implementation of cleanup under the mutually agreed 2010 Order on Consent. Further, risks to EM completion at the 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 cleanup.

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 was funded by the 2009 American Recovery and Reinvestment Act appropriation.

Contract Synopsis

Data as of December 2010

Contractor	Base Period Current Period	Total Value	Contract Description	Contract Type
Energy Technology Environmental Center The Boeing Company	12/1988 - 9/2011	$177.35M ($13.375M ARRA; $163.97M Non-ARRA)	Energy Technology Environmental Center Site contractor	Cost plus Award Fee / Cost plus Fixed Fee

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

- Activities 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.

Detailed Justification

(dollars in thousands)

	FY 2010 Current Appropriation	FY 2012 Request
CBC-ETEC-0040 / Nuclear Facility D&D-Energy Technology Engineering Center	**10,500**	**10,679**

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

(dollars in thousands)

FY 2010 Current Appropriation	FY 2012 Request

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 2010, the following activities were completed:

- Performed ongoing program support and landlord services.
- Continued Resource Conservation and Recovery Act facility investigation program for soils and groundwater including sampling, analysis, and report preparations.
- Continued preparation of required supporting information for completion of a court ordered Environmental Impact Statement.
- A portion of the scope of work typically covered in this Program Baseline Summary is being executed with American Recovery and Reinvestment Act funding.

In FY 2012, the following activities are planned:

- Perform ongoing program support and landlord services.
- Continue Resource Conservation and Recovery Act facility investigation program for groundwater including sampling, analysis, and report preparations.
- Continue Comprehensive Environmental Response, Compensation, and Liability Act investigation program for soils including sampling, analysis, and report preparations.
- Continue preparation of required supporting information for completion of a court ordered Environmental Impact Statement.

Key Accomplishments (FY 2010)/Planned Milestones (FY 2012)

- Complete co-located sampling w/EPA (December 2011)

(dollars in thousands)

	FY 2010 Current Appropriation	FY 2012 Request
Total, Energy Technology Engineering Center	**10,500**	**10,679**

Explanation of Funding Changes

	FY 2012 vs. FY 2010 Current Approp. ($000)
Non-Defense Environmental Cleanup	
Small Sites	
Energy Technology Engineering Center	
CBC-ETEC-0040 / Nuclear Facility D&D-Energy Technology Engineering Center	
▪ Not a significant change.	179
Total, Energy Technology Engineering Center	**179**

Moab

Funding Schedule by Activity

	($ in thousands)	
	FY 2010 Current Appropriation	FY 2012 Request
Non-Defense Environmental Cleanup		
Small Sites		
Moab		
CBC-MOAB-0031 / Soil and Water Remediation-Moab	39,000	31,000

Site Overview

The scope of the Moab Uranium Mill Tailings Remedial Action Project is to excavate approximately 16 million tons of uranium mill tailings and other contaminated material from the former Atlas mill-site near Moab, Utah; transport them 30 miles north primarily via rail to a disposal cell constructed near Crescent Junction, Utah; remediate vicinity properties in the city of Moab; and implement active ground water remediation at the Moab site. DOE became responsible for this mission upon enactment of the Floyd D. Spence National Defense Authorization Act of FY 2001.

Site Description

- Approximately 3 miles northwest of the city of Moab, Utah, on the west bank of the Colorado River.
- About 435 acres, 130 acres of which is covered by a 16 million ton uranium mill tailings pile.

Site Cleanup Strategy/Scope of Cleanup

- DOE's Record of Decision (issued on September 14, 2005) announced 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 groundwater.
- The remainder of the mill-site will be verified to meet radiological standards for recreational land use.
- Demobilization from the site will complete the on-site activities, except in the case of active ground water remediation.
- DOE will assess vicinity properties in Moab for the presence of residual radioactive materials and clean up those that exceed U.S. Environmental Protection Agency standards.

Site Completion (End State)

- The end state 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 be transferred to the Office of Legacy Management for monitoring and required stewardship.
- American Recovery and Reinvestment Act funding 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.

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 U.S. Nuclear Regulatory Commission must concur with the remediation plan and license the final disposal site.

Critical Site Uncertainties and Assumptions

- 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.

Contract Synopsis

Data as of December 2010

Contractor	Base Period Current Period	Total Value	Contract Description	Contract Type
Moab S&K Aerospace Inc	Base Period 6/20/2007-6/19/2008 Four 1-Yr Options: 6/20/2008 - 6/19/2012	$28.9M ($3.3M ARRA; $25.6M Base)	Moab Technical Assistance Contract	Cost plus Award Fee
Moab Energy Solutions Federal Services, Inc	6/2007 - 12/31/2011	$225M ($104.1M ARRA; $120.8M Base)	Moab Remedial Action Contractor	Cost plus Award Fee

- A remedial action contract and a new technical assistance contract were awarded on June 20, 2007

Cleanup Benefits

Continued maintenance and surveillance of the ground water and mill tailings pile area will ensure no further contamination of surrounding areas. Removal of the approximately 16 million tons of uranium tailings away from the Colorado River will reduce potential risks to human health and the environment.

Direct maintenance and repair at Moab is estimated to be $191,394.

Detailed Justification

	(dollars in thousands)	
	FY 2010 Current Appropriation	FY 2012 Request
CBC-MOAB-0031 / Soil and Water Remediation-Moab	**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 2010, the following activities were completed:

- Moab and Crescent Junction sites operation and maintenance.
- Continued monitoring and analysis of contaminated groundwater.
- Continued tailings excavation and transport from millsite to the disposal cell (973,400 tons).
- Continued placing tailings into the disposal cell and constructing the cell cover.
- Continued operations and maintenance of the materials handling system and infrastructure to load tailings onto the rail cars for transport.
- Continued remediating vicinity properties in the community surrounding the tailings pile.
- A portion of the scope of work typically covered in this Program Baseline Summary is being executed with American Recovery and Reinvestment Act funding.

In FY 2012, the following activities are planned:

- Moab and Crescent Junction sites operation and maintenance.

(dollars in thousands)

FY 2010 Current Appropriation	FY 2012 Request

- Continue operating interim remedial action for contaminated groundwater.
- Continue tailings excavation and transport from millsite to the disposal cell (2,768,082 tons).
- Continue remediating vicinity properties in the community surrounding the tailings pile.
- Demobilization of current Remedial Action Contractor and mobilization of follow-on Remedial Action Contractor.

Key Accomplishments (FY 2010)/Planned Milestones (FY 2012)

- Recover 30 million gallons of contaminated ground water (FY 2010)
- Complete Transport of 750,000 tons of tailings from Moab to the CJ disposal cell (FY 2010)
- Transport and dispose of 2.25M tons of tailings from Moab to the C1 disposal cell (August 2012)

Total, Moab	**39,000**	**31,000**

Explanation of Funding Changes

	FY 2012 vs. FY 2010 Current Approp. ($000)
Non-Defense Environmental Cleanup	
Small Sites	
Moab	
CBC-MOAB-0031 / Soil and Water Remediation-Moab	
▪ The FY 2012 funding level supports the planned scope in FY 2012. The funding in FY 2010 reflects additional appropriated funds that were used to transport a greater volume of tailings than was planned for FY 2010.	-8,000
Total, Moab	**-8,000**

SLAC National Accelerator Laboratory

Funding Schedule by Activity

	($ in thousands) FY 2010 Current Appropriation	FY 2012 Request
Non-Defense Environmental Cleanup		
Small Sites		
SLAC National Accelerator Laboratory		
CBC-SLAC-0030 / Soil and Water Remediation-Stanford Linear Accelerator Center	7,100	2,435

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 and revised October 2009 Order No. R2-2009-0072 and accompanying order on schedule of deliverables (R2-2009-0073). The Order requires installation of long-term groundwater remedies and excavation and disposal of contaminated soils. Legacy work scope to be completed by the end of FY 2011 and a transfer to the Office of Science will be initiated in the FY 2013 budget. Until that time, EM will support surveillance and maintenance activities during FY 2012.

Site Description

- 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).
- Located on land owned by Stanford University and leased to DOE.
- 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 lease was renewed in 2010 for an additional 30 years.

The SLAC National Accelerator Laboratory research program centers on experimental and theoretical research in elementary particle, hard x-ray and coherent light 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

Legacy work scope to be completed by the end of FY 2011 and a transfer to the Office of Science will be initiated in the FY 2013 budget. Until that time, EM will support surveillance and maintenance

activities during FY 2012. EM completion is expected to achieve protection of groundwater and to achieve residential land use standards for accessible areas.

EM and the Office of Science 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. In the 2006 Alternatives Analysis, 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 would accept responsibility for those areas as deferred actions. EM's strategy has been to perform the removal actions in parallel with preparing Remedial Investigation Reports and associated Risk Assessments.

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 and will demonstrate the following:

- Contaminated sites evaluated and characterized;
- Contaminated soils excavated and removed from site;
- Comprehensive Environmental Response, Compensation, and Liability Act public reviews and deliverables 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 Groundwater Operable Units and a Remedial Investigation and Risk Assessment for the West SLAC and Research Yard Operable Units;
- Compliance with enforceable regulatory milestones achieved;
- Regulatory site closure obtained
  - Office of Science accepted responsibility for all sites that were inaccessible due to research operations and all contamination after EM completes existing scope; and
  - Office of Science agreed to assume responsibility for completing the Comprehensive Environmental Response, Compensation, and Liability Act process for the remainder of the West SLAC Research Yard and the Tritium Operable Units.

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 requires 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 Order No. R2-2005-0022 was unilaterally revised in October 2009, Order No. R2-2009-0072-/0073, to correct deadlines for the deliverables. With that revision, the Board also expanded the definition and scope of the West SLAC Operable Unit to potentially include work beyond the current EM project scope and encompass inaccessible areas. EM and the Office of Science subsequently agreed to revise their respective responsibilities with EM's West SLAC Board Order deliverables ending with the completion of the Remedial Investigation Report and Risk Assessment.

Critical Site Uncertainties and Assumptions

The expanded scope of the Order No. R2-2009-0072/0073 changed 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). The EM project charter for the 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 the new Board Order requirements, the West SLAC EM Remedial Investigation report scope and associated subsequent Board Order documentation is defined by areal boundaries rather than specific release sites. New scope includes 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 documents (e.g., decision documents, risk management plans) will likely require investigation and possibly remedial action in currently inaccessible areas due to ongoing Laboratory operations. In consideration of this, DOE EM and the Office of Science revised the agreed allocation of responsibilities such that EM's work in West SLAC extends only to completion of the Remedial Investigation report and Risk Assessment. DOE and Stanford University provided the Regulator with a new schedule for completing any additional work resulting from this broader definition in April 2010.

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.

Contract Synopsis

Data as of December 2010

Contractor	Base Period Current Period	Total Value	Contract Description	Contract Type
C/P/E Environmental Services, LLC	9/2007 – 9/2011	$26M ($13.8M ARRA; $12.2M Non-ARRA)	Environmental Remediation	Cost plus Award Fee
SLAC Management & Operations – Stanford University	9/2007 – 9/2012	$10.1M (Subset Science Contract)	Environmental Restoration Program	Cost plus Award Fee

- The Environmental Restoration Indefinite Delivery/Indefinite Quantity contractor was hired at the end of FY 2007 to perform most of the Environmental Cleanup activities. This is a cost-plus-award-fee contract.

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.

Detailed Justification

	(dollars in thousands)	
	FY 2010 Current Appropriation	FY 2012 Request
CBC-SLAC-0030 / Soil and Water Remediation-Stanford Linear Accelerator Center	**7,100**	**2,435**

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 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 2010, the following activities were completed:

- Completed the Groundwater Feasibility Study and Remedial Action Plan.
- Completed installation of groundwater wells and treatment system.
- Completed removal actions at six soil sites.
- A portion of the scope of work originally covered in this program baseline summary is being executed with American Recovery and Reinvestment Act funding.

In FY 2012, the following activity is planned:

- Legacy work scope to be completed by the end of FY 2011 and a transfer to the Office of Science

(dollars in thousands)

	FY 2010 Current Appropriation	FY 2012 Request
will be initiated in the FY 2013 budget. Until that time, EM will support surveillance and maintenance activities during FY 2012.		
Total, SLAC National Accelerator Laboratory	**7,100**	**2,435**

Explanation of Funding Changes

	FY 2012 vs. FY 2010 Current Approp. ($000)
Non-Defense Environmental Cleanup	
Small Sites	
SLAC National Accelerator Laboratory	
CBC-SLAC-0030 / Soil and Water Remediation-Stanford Linear Accelerator Center	
▪ Decrease reflects completion of legacy scope by the end of FY 2011. EM will support surveillance and maintenance activities during FY 2012 and in FY 2013 will initiate the transfer to the Office of Science.	-4,665
Total, SLAC National Accelerator Laboratory	**-4,665**

All Other Sites

Funding Schedule by Activity

	($ in thousands)	
	FY 2010 Current Appropriation	FY 2012 Request
Defense Environmental Cleanup		
Closure Sites		
Closure Sites Administration		
CBC-0100-FN / CBC Post Closure Administration - Fernald	1,850	0
CBC-0100-RF / CBC Post Closure Administration - Rocky Flats	6,375	5,375
Subtotal, Closure Sites Administration	8,225	5,375
Miamisburg		
OH-MB-0030 / Soil and Water Remediation-Miamisburg	10,154	0
OH-MB-0100 / Miamisburg Post-Closure Administration	23,089	0
Subtotal, Miamisburg	33,243	0
Total, Closure Sites	41,468	5,375
NNSA Sites		
Sandia National Laboratories		
VL-SN-0030 / Soil and Water Remediation-Sandia	2,864	0
SPRU		
VL-SPRU-0040 / Nuclear Facility D&D-Separations Process Research Unit	15,000	1,500
Total, NNSA Sites	17,864	1,500
Total, Defense Environmental Cleanup	59,332	6,875
Non-Defense Environmental Cleanup		
Small Sites		
Argonne National Laboratory		
CH-ANLE-0040 / Nuclear Facility D&D-Argonne National Laboratory-East	10,000	0
California Site Support		
CBC-CA-0100-N / Oakland Community and Regulatory Support (Non-Defense)	262	0
Completed Sites/Program Support		
CBC-ND-0100 / CBC - Non-Defense Post Closure Administration and Program Support	620	0
Inhalation Toxicology Laboratory		
VL-ITL-0030 / Soil and Water Remediation-Inhalation Toxicology Laboratory	580	0
Total, Small Sites	11,462	0
Total, Other Sites	70,794	6,875

The Environmental Management program scope includes closure and post-closure administrative activities at a number of geographic sites across the nation. Some of the sites described in this section of the budget may have continuing EM mission requirements; however no funding requirements in FY 2012. Some sites are in the final stages of cleanup and closure or have actually transitioned to the post-closure phase. All sites included this section require continuing administrative support until all EM post-closure administrative activities are completed and the site can be fully transitioned to other Department of Energy programs (i.e., Office of Science, Legacy Management, etc.).

The sites currently included in this section of the budget are: Argonne National Laboratory, the Consolidated Business Center, Mound, Sandia National Laboratories-New Mexico, and Separations Process Research Unit. Below is an overview of the geographic sites that are included in this section.

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.

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 occurred in FY 2010.

Consolidated Business Center

Site Overview

The Consolidated Business Center is located in Cincinnati, Ohio and serves as a central clearinghouse for a wide range of activities supporting DOE's national environmental cleanup mission from financial management and contracting to human resources and information resource management. The Consolidated Business Center also assumed responsibility for administrative closure and post-closure activities at EM defense and non-defense sites, which includes contract closeout, litigation and litigation support. The Consolidated Business Center is currently providing post-closure administrative and litigation support for Mound, and Rocky Flats sites and non-defense post-closure litigation support for SLAC National Accelerator Laboratory.

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 was completed in FY 2010 and total operational management of the long-term stewardship mission at Miamisburg Closure Project was transferred to DOE's Office of Legacy Management in FY 2011.

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.

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 was an inactive pilot plant used to research and develop chemical processes to separate plutonium from radioactive material. The Separations Process Research Unit operated from 1950 to 1953. The Separations Process Research Unit operations contaminated nuclear facilities and 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, was also contaminated with radioactivity. The scope of the Separations Process Research Unit project was to decontaminate and remove the nuclear facilities, remediate the land areas, and ship the resulting waste to the appropriate off-site disposal facilities.

Detailed Justification

(dollars in thousands)

	FY 2010 Current Appropriation	FY 2012 Request
CH-ANLE-0040 / Nuclear Facility D&D-Argonne National Laboratory-East	**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. All EM legacy surplus contaminated facilities were decontaminated and demolished to reduce risk and support the overall Argonne National Laboratory mission of continuing science research and development work.

In FY 2010, the following activity was completed:

- The FY 2010 Energy and Water Development Appropriation included transfer authority permitting the National Nuclear Security Administration to transfer $10 million to EM for waste cleanup activities that are in addition to the legacy scope of work completed by EM at Argonne National Laboratory.

In FY 2012, the following activities are planned:

- Continue cleanup of chemical, hazardous and low-level radioactive waste using carryover from the National Nuclear Security Administration in order to prepare these buildings for future transfer to EM. This work is scheduled to be completed in FY 2012.

Key Accomplishments (FY 2010)/Planned Milestones (FY 2012)

- Bldg 301 CD-4 (FY 2010)

CBC-CA-0100-N / Oakland Community and Regulatory Support (Non-Defense)	**262**	**0**

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

This project provided funding for grants to the 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.

(dollars in thousands)

	FY 2010 Current Appropriation	FY 2012 Request

In FY 2010, the following activities were completed:

- Completed oversight of Stanford Linear Accelerator Center and Energy Technology Engineering Center by the Water Control Board.

In FY 2012, the following activities are planned:

- No activities planned.

CBC-0100-FN / CBC Post Closure Administration - Fernald	**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 2010, the following activities were completed:

- Funded the end of the Fernald Project's legal requirements, court orders and settlements.

In FY 2012, the following activities are planned:

- No activities planned.

Key Accomplishments (FY 2010)/Planned Milestones (FY 2012)

- Complete ROD for final disposition of waste currently held at WCS facility in Texas (FY 2010)

CBC-0100-RF / CBC Post Closure Administration - Rocky Flats	**6,375**	**5,375**

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.

(dollars in thousands)

	FY 2010 Current Appropriation	FY 2012 Request

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.

In FY 2010, the following activities were completed:

- Funded the ongoing Rocky Flats Closure Project's legal requirements and records management.

In FY 2012, the following activities are planned:

- Fund the ongoing Rocky Flats Closure Project's legal requirements and court orders for the Cook and Stone cases.

CBC-ND-0100 / CBC - Non-Defense Post Closure Administration and Program Support	**620**	**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 2010, the following activities were completed:

- Completed contract closeout, litigation support, Freedom of Information/Privacy Act compliance, and contractor workman's compensation claims for Non-Defense contracts in closeout (Laboratory for Energy-Related Health Research, General Atomics, Title II Uranium Mill Tailing Remediation Act site, Inhalation Toxicology Laboratory, etc.

In FY 2012, the following activities are planned:

- No activities planned.

VL-ITL-0030 / Soil and Water Remediation-Inhalation Toxicology Laboratory	**580**	**0**

(dollars in thousands)

	FY 2010 Current Appropriation	FY 2012 Request

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

The Inhalation Toxicology Laboratory was a Department of Energy research facility whose mission was to develop experimental data contributing to improved understanding of potential biological consequences of inhaling radioactive materials associated with nuclear weapons research and development. The last remaining substantial nuclear material removal project addressed laboratory samples of Americium-241 used to conduct certain experiments at the Inhalation Toxicology Laboratory.

In FY 2010, the following activities were completed:

- Completed workscope on the final lead box containing Americium at the Inhalation Toxicology Laboratory and shipped to Los Alamos.

In FY 2012, the following activities are planned:

- No activities planned.

OH-MB-0030 / Soil and Water Remediation-Miamisburg	**10,154**	**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 assumed full operational responsibility for the site in FY 2011.

In FY 2010, the following activities were completed:

- Completed Operable Unit 1 groundwater monitoring and remediation.

In FY 2012, the following activities are planned:

- No planned activities.

OH-MB-0100 / Miamisburg Post-Closure	**23,089**	**0**

(dollars in thousands)

	FY 2010 Current Appropriation	FY 2012 Request

Administration

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. The Office of Legacy Management assumed full operational responsibility for the site in FY 2011.

In FY 2010, the following activities were completed:

- Funded the Miamisburg Mound Project's legal requirements and court orders.

In FY 2012, the following activities are planned:

- No planned activities.

VL-SN-0030 / Soil and Water Remediation-Sandia	**2,864**	**0**

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

The Sandia National Laboratories Environmental Restoration project mission is to complete all necessary corrective actions at 265 release soil sites and three groundwater areas of concern. The Mixed Waste Landfill long-term monitoring and maintenance plan is currently under development.

All groundwater areas are expected to transition to long-term stewardship following completion of characterization and installation of the determined remedy.

In FY 2010, the following activities were completed:

- Finalized Closure Report for Chemical Waste Landfill RCRA Remediation to New Mexico Environment Department.
- Submitted Mixed Waste Landfill Corrective Measures Implementation Report for the Mixed Waste Landfill to New Mexico Environment Department.
- Completed installation of monitoring wells and sampling of ten borings at the Burn Site groundwater area.

(dollars in thousands)

FY 2010 Current Appropriation	FY 2012 Request

In FY 2012, the following activities are planned:

- No activities planned.

Key Accomplishments (FY 2010)/Planned Milestones (FY 2012)

- Submit Corrective Measure Implementation (CMI) Report for the Mixed Waste Landfill (MWL) to NMED. (FY 2010)
- Submit Final CMI (RCRA) Report to the New Mexico Environment Department for Chemical Waste Landfill (FY 2010)

VL-SPRU-0040 / Nuclear Facility D&D-Separations Process Research Unit **15,000** **1,500**

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 2010, the following activities were completed:

- Completed contaminated soil removal in the Lower Level Rail Bed and restored the excavated areas to the original grade using clean backfill.
- Returned the remediated land in the Lower Level Rail Bed to Naval Reactors for their continuing nation defense mission use.
- Completed tank waste sludge sampling and analysis to determine waste characteristics (e.g. waste determination).
- Designed and constructed a system to remove chemical and radioactive waste from the seven Separation Processing Research Unit tanks.
- Removed, consolidated, and solidified residual tank sludge and liquid waste.
- Completed the North Field contaminated soil cleanup (15 acres remediated).

In FY 2012, the following activities are planned:

(dollars in thousands)

	FY 2010 Current Appropriation	FY 2012 Request

- Complete demolition and closure activities for G2 and H2 facilities.
- Complete offsite shipment of all building debris and waste from the site.
- Return all lands to the Naval Reactors Program for their continued mission use.

Key Accomplishments (FY 2010)/Planned Milestones (FY 2012)

- Complete Soil Removal for Lower Level (FY 2010)
- Clean-up 4 RCRA Solid Waste Management Units in the Lower Level Rail Bed (FY 2010)
- Submit interim Corrective Action Workplan (FY 2010)
- Submit Closure Report for Lower Level (FY 2010)

Total, Other Sites	**70,794**	**6,875**

Explanation of Funding Changes

	FY 2012 vs. FY 2010 Current Approp. ($000)
Defense Environmental Cleanup	
Closure Sites	
Closure Sites Administration	
CBC-0100-FN / CBC Post Closure Administration - Fernald	
▪ Decrease reflects completion of legal requirements, court orders and post-closure administrative costs.	-1,850
CBC-0100-RF / CBC Post Closure Administration - Rocky Flats	
▪ Decrease reflects use of carryover funding to support site litigation requirements, court orders and post-closure administrative costs.	-1,000
Miamisburg	
OH-MB-0030 / Soil and Water Remediation-Miamisburg	
▪ Decrease reflects project completion and the transfer of funding and responsibility for the Miamisburg Closure Project to the Office of Legacy Management.	-10,154
OH-MB-0100 / Miamisburg Post-Closure Administration	
▪ Decrease reflects project completion and the transfer of funding and responsibility for	-23,089

	FY 2012 vs. FY 2010 Current Approp. ($000)
the Miamisburg Closure Project to the Office of Legacy Management.	
NNSA Sites	
Sandia National Laboratories	
VL-SN-0030 / Soil and Water Remediation-Sandia	
▪ Decrease reflect completion of characterization on four new Mixed Waste Landfill Groundwater wells and final closure report for Chemical Waste Landfill RCRA Remediation to New Mexico Environment Department. Remaining carryover will be used to complete some required regulatory activities.	-2,864
SPRU	
VL-SPRU-0040 / Nuclear Facility D&D-Separations Process Research Unit	
▪ Decrease reflects the completion of contaminated soil removal, completion of North Field activities and transfer to Naval Reactors, and removal of tanks and tank waste from building H2 vaults. Due to several contamination incidents in early FY 2011, demolition and closure of the G2 and H2 buildings will be deferred to FY 2012.	-13,500
Non-Defense Environmental Cleanup	
Small Sites	
Argonne National Laboratory	
CH-ANLE-0040 / Nuclear Facility D&D-Argonne National Laboratory-East	
▪ The FY 2010 Energy and Water Development Appropriation included transfer authority permitting the National Nuclear Security Administration to transfer $10 million to EM for waste cleanup activities that are in addition to the legacy scope of work completed by EM at Argonne National Laboratory.	-10,000
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	
▪ Decrease reflects project completion and contract closeout.	-620
Inhalation Toxicology Laboratory	
VL-ITL-0030 / Soil and Water Remediation-Inhalation Toxicology Laboratory	
▪ Decrease reflects completion of workscope on the final lead box containing Americium at the Inhalation Toxicology Laboratory and shipment to Los Alamos.	-580
Total, Other Sites	**-63,919**

Headquarters Operations

Funding Schedule by Activity

	(dollars in thousands)	
	FY 2010 Current Appropriation	FY 2012 Request
Defense Environmental Cleanup		
Program Support		
Headquarters		
HQ-MS-0100 / Policy, Management, and Technical Support	34,000	0
Community, Regulatory and Program Support		
Headquarters		
HQ-MS-0100 / Policy, Management, and Technical Support	0	20,143
Congressionally Directed Projects		
Headquarters		
HQ-CDP-0100 / Congressionally Directed Projects	4,000	0
Total, Defense Environmental Cleanup	38,000	20,143

In FY 2012, EM will be consolidating EM Headquarters policy and oversight activities, community and regulatory support and contract/post closure activities across the EM complex into a single control point. The consolidation of these activities into a single control point will allow for greater transparency and accountability of overhead activities but will also provide flexibility during the year of execution. While these activities are being consolidated into a single control point, the individual activities will continue to be displayed within the site chapters of the EM budget.

The funding table below provides a comparable display of the impacted activities and a comparable display will be continued throughout this budget chapter to aid in budget review.

Funding Schedule by Activity

	(dollars in thousands)	
	FY 2010 Current Appropriation	FY 2012 Request
Defense Environmental Cleanup		
Community, Regulatory and Program Support		
HQ-MS-0100 / Policy, Management, and Technical Support	34,000	20,143
Congressionally Directed Projects		
HQ-CDP-0100 / Congressionally Directed Projects	4,000	0
Total, Defense Environmental Cleanup	38,000	20,143

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 be reduced. 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 $70,000,000. 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 eligible outstanding claims owed to eleven licensees in FY 2012. 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.

DOE began preparation of an Environmental Impact Statement in May 2009 to identify a long-term elemental mercury management and storage facility. The Draft Environmental Impact Statement was issued in January 2010 and the Final Environmental Impact Statement is anticipated to be issued in the first quarter of fiscal year 2011. The total cost of the two documents is estimated at $5.4M.

Detailed Justification

(dollars in thousands)

	FY 2010 Current Appropriation	FY 2012 Request
HQ-MS-0100 / Policy, Management, and Technical Support	**34,000**	**20,143**

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 2010, the following accomplishments were completed:

- Continued 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.

- Provided expertise in the areas of safety, health and security, emergency management, package certification, quality assurance, nuclear criticality safety, and risk management.

- Instilled safety awareness by utilizing the National Safety Council to conduct surveys which will indicate whether and how EM's commitment to safety is working.

- Issued the Environmental Impact Statement for Disposal of Greater-Than-Class C Radioactive Waste, the Record of Decision, and the required Report to Congress on Greater-Than-Class C Disposal Alternatives per the Energy Policy Act of 2005.

- Supported various Secretarial and Departmental initiatives, including the Defense Contracts Audit

(dollars in thousands)

FY 2010 Current Appropriation	FY 2012 Request

Agency audits, Government Industry Data Exchange Program and Consolidated Accounting Investment System.

- Provided 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.

- Administered the EM and DOE-wide transportation and packaging responsibilities and the Transportation Emergency Preparedness Program.

- Provided rapid response from technical experts or "External/Internal" review teams to address emerging, imminent technical issues impeding site cleanup and closure.

- Provided technical solution projects designed to reduce near-term technical risks and technical assistance to include site troubleshooting, consulting, scientific or technical problem solving.

- Prepared Mercury Export Ban Environmental Impact Statement.

In FY 2012, 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.

- 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.

	(dollars in thousands)	
	FY 2010 Current Appropriation	FY 2012 Request

- 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.
- Develop the fee amounts for long-term elemental mercury management and storage and continue planning construction activities for the facility.

HQ-CDP-0100 / Congressionally Directed Projects	**4,000**	**0**

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

The Energy and Water Development and Related Agencies Appropriations Act, 2010 included one congressionally directed project within the Office of Environmental Management.

▪ Characteristics and Clean-up of U.S. Nuclear Legacy (MS)	4,000	0
Total, Headquarters Operations	**38,000**	**20,143**

Title X of the Energy Policy Act of 1992: Uranium/Thorium Reimbursement Program Status of Payments through Fiscal Year 2010 and Estimated Maximum Program Liability ($ Thousands)

Licensees	Total Payments FY 1994-FY 2010	Approved but Unpaid Claim Balances After FY 2010 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……	1,273	0	755
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…….	8,560	0	9,882
Homestake Mining Company……	49,295	0	86,070
Pathfinder Mines Corporation……...	10,722	0	327
Petrotomics Company[a]……	2,850	0	0
Rio Algom Mining LLC[b] ……...	38,943	0	8,615
Tennessee Valley Authority……..	15,410	9,720	9,720
Umetco Minerals Corporation-CO……	54,064	20,049	34,420
Umetco Minerals Corporation-WY……...	19,943	4,043	6,683
Western Nuclear, Incorporated……	31,670	0	1,831
Subtotal, Uranium……..	278,539	34,235	161,643

[a] Reimbursements have been completed to the Atlantic Richfield Company, the licensees of the Moab site and the Petromics Company.
[b] Formerly Quivira Mining Company.

Licensees	Total Payments FY 1994-FY 2010	Approved but Unpaid Claim Balances After FY 2010 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
Thorium			
Tronox LLC[c]..…….	340,481	0	53,562
Subtotal, Thorium……...	340,481	0	53,562
Total, Uranium and Thorium…….	619,020	34,235	215,205

[c] Formerly Kerr-McGee Chemical Corp.

Explanation of Funding Changes

	FY 2012 vs. FY 2010 Current Approp. ($000)
Defense Environmental Cleanup	
Community, Regulatory and Program Support	
Headquarters	
HQ-MS-0100 / Policy, Management, and Technical Support	
▪ Decrease reflects a reduction in requirements for various environmental impact statement activities and secretarial initiatives.	-13,857
Congressionally Directed Projects	
HQ-CDP-0100 / Congressionally Directed Projects	
▪ No funding requested.	-4,000
Total, Headquarters Operations	**-17,857**

Program Direction

Funding Profile by Category

	($ in thousands)	
	FY 2010 Current Appropriation	FY 2012 Request
Carlsbad		
Salaries and Benefits	7,550	8,249
Travel	558	352
Other Related Expenses	998	963
Total, Carlsbad	9,106	9,564
Full Time Equivalents	54	56
Idaho		
Salaries and Benefits	9,888	9,952
Travel	329	221
Support Services	349	188
Other Related Expenses	833	850
Total, Idaho	11,399	11,211
Full Time Equivalents	71	67
Oak Ridge		
Salaries and Benefits	11,266	11,747
Travel	180	161
Support Services	3,342	1,252
Other Related Expenses	4,385	3,000
Total, Oak Ridge	19,173	16,160
Full Time Equivalents	82	80
Portsmouth/Paducah Project Office		
Salaries and Benefits	7,406	8,668
Travel	388	265
Support Services	1,418	962
Other Related Expenses	1,058	1,130
Total, Portsmouth/Paducah Project Office	10,270	11,025
Full Time Equivalents	49	54
Richland		
Salaries and Benefits	37,768	41,751
Travel	600	417
Support Services	1,125	813
Other Related Expenses	8,612	8,000
Total, Richland	48,105	50,981
Full Time Equivalents	252	261

	($ in thousands)	
	FY 2010 Current Appropriation	FY 2012 Request
River Protection		
Salaries and Benefits	20,487	20,609
Travel	698	487
Support Services	2,836	1,302
Other Related Expenses	4,670	4,000
Total, River Protection	28,691	26,398
Full Time Equivalents	162	153
Savannah River		
Salaries and Benefits	45,308	45,831
Travel	792	512
Support Services	2,527	1,434
Other Related Expenses	5,269	4,150
Total, Savannah River	53,896	51,927
Full Time Equivalents	345	328
Small Sites		
Salaries and Benefits	5,277	6,579
Travel	345	250
Support Services	2,050	1,261
Other Related Expenses	1,007	1,000
Total, Small Sites	8,679	9,090
Full Time Equivalents	32	38
Nevada		
Salaries and Benefits	3,127	3,280
Travel	100	58
Support Services	548	396
Other Related Expenses	74	87
Total, Nevada	3,849	3,821
Full Time Equivalents	23	23
NNSA Sites		
Salaries and Benefits	3,883	3,908
Travel	223	127
Support Services	2,635	1,906
Other Related Expenses	320	256
Total, NNSA Sites	7,061	6,197
Full Time Equivalents	25	24
EM Career Development Corp		
Salaries and Benefits	3,200	0
Travel	797	0
Other Related Expenses	418	0
Total, EM Career Development Corp	4,415	0
Full Time Equivalents	35	0

	($ in thousands)	
	FY 2010 Current Appropriation	FY 2012 Request
Field		
Salaries and Benefits	155,160	160,574
Travel	5,010	2,850
Support Services	16,830	9,514
Other Related Expenses	27,644	23,436
Total, Field	204,644	196,374
Full Time Equivalents	1,130	1,084
Headquarters Operations		
Salaries and Benefits	53,599	56,160
Travel	2,718	2,284
Support Services	36,103	20,836
Other Related Expenses	13,072	14,283
Total, Headquarters Operations	105,492	93,563
Full Time Equivalents	330	325
Consolidated Business Center		
Salaries and Benefits	25,578	23,260
Travel	624	1,027
Support Services	3,449	2,404
Other Related Expenses	5,213	5,000
Total, Consolidated Business Center	34,864	31,691
Full Time Equivalents	189	173
Environmental Management		
Salaries and Benefits	234,337	239,994
Travel	8,352	6,161
Support Services	56,382	32,754
Other Related Expenses	45,929	42,719
Total, Environmental Management	345,000	321,628
Full Time Equivalents	1,649	1,582

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 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

Effective March 1, 2011, Executive Order 13562 (Recruiting and Hiring Students and Recent Graduates) supersedes and revokes Executive Order 13162 (Federal Career Intern Program). Any individuals serving in appointments under Executive Order 13162 on March 1, 2011, shall be converted to the competitive service, effective on that date, with no loss of pay or benefits. As of that date, EM Professional Development Corps (previously EM Career Intern Program) full time equivalents will be converted to career-conditional or career status and assigned as permanent Federal employees to their sites of record, the Consolidated Business Center or Headquarters. These adjustments have been reflected in the detailed justification for FY 2012.

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 mission needs and began an aggressive campaign to improve recruitment strategies and address the Academy recommendation. As a result, EM has successfully recruited and retained more than 200 people since the release of the Academy report and intends to maintain the staffing at the current levels into the future.

While EM has been successful with hiring efforts since the Academy's recommendation, EM leadership recognizes that a skills mix challenge still exists. Consequently, a Voluntary Separations Incentive Program and Voluntary Early Retirement Authority were approved and offered to employees through January 3, 2011, under which 44 employees voluntarily separated from service.

Under strict hiring controls that require the approval of the Principal Deputy Assistant Secretary and the Chief Business Officer, EM field and HQ managers are afforded the opportunity to request new hires to fill their skill gaps.

Detailed Justification

(dollars in thousands)

	FY 2010 Current Appropriation	FY 2012 Request
Salaries and Benefits	**234,337**	**239,994**

Provides funding for 1,582 full-time equivalent employees in FY 2012 with the responsibility for the overall direction and administrative support of the EM program, including Headquarters (325 employees based in Germantown, Maryland and Washington, DC), field personnel (1,084 employees at

(dollars in thousands)

	FY 2010 Current Appropriation	FY 2012 Request

Operations/Field/Sites Offices located throughout the United States) and the EM Consolidated Business Center (173 employees in Cincinnati, Ohio). 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	**8,352**	**6,161**

The FY 2012 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. Travel expenses for the certifications associated with Federal Project Directors and Procurement Specialists are also included.

Support Services	**56,382**	**32,754**

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 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 and 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	**45,929**	**42,719**

Provides for the physical and administrative support of the Federal workforce at both Headquarters and

(dollars in thousands)

	FY 2010 Current Appropriation	FY 2012 Request

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.

Other Related Expenses provides EM's contribution to the Department's Working Capital Fund (WCF) for common administrative services at HQ, such as rent and building operations, telecommunications, network connectivity, supplies/equipment, printing/graphics, copying, mail, contract closeout, purchase card surveillance and salary and benefit expenses for federal employees who administer the WCF business lines per the Department's new policy being implemented in FY 2012. In addition, WCF services assessed to and used by HQ Office of Scientific and Technical Information and the Field include online training, the Corporate Human Resource Information System, payroll processing and the Project Management Career Development Program.

Total, Program Direction	**345,000**	**321,628**

Explanation of Funding Changes

	FY 2012 vs. FY 2010 ($000)
Salaries and Benefits	
▪ Increase reflects 2.8 percent escalation for benefits and personnel-related costs for 1,582 full-time equivalent employees.	5,657
Travel	
▪ Reduction reflects requirements for essential, mission-related travel and administrative initiatives to increase reliance on corporate telecommunications services and information technologies to reduce travel cost.	-2,191
Support Services	
▪ Decrease reflects an expanded reliance on Federal staff to execute professional project and program management activities that were previously performed by	-23,628

	FY 2012 vs. FY 2010 ($000)
contractors. Federal employees will also expand duties associated with the review and oversight of contractor employees and their associated work products in order to realize additional savings.	
Other Related Expenses	
▪ Decrease reflects savings in other services not essential to building and physical plant maintenance, that is, rent, utilities and essential infrastructure upkeep. Other services include supplies, non-essential materials, printing and reproduction services, telecommunications services upgrades, computer purchases, building renovation, office expansion, and training.	-3,210
▪ This net reduction includes an increase to offset EM's share of additional WCF to cover upgrades to the Department's funds distribution system and to pay for salary and benefits related to employees who administer the Department's WCF.	
Total Funding Change, Program Direction	**-23,372**

Support Services by Category

	(dollars in thousands) FY 2010 Current Approp	FY 2012 Request
Technical Support Services		
Feasibility of Design Considerations	5,507	3,873
Development of Specifications	0	0
System Definition	121	85
System Review and Realiability Analyses	0	0
Trade-Off Analyses	0	0
Economic and Environmental Analysis	8,263	5,811
Test and Evaluation Studies	110	78
Surveys or Reviews of Technical Operations	22,613	9,006
Total, Technical Support Services	36,614	18,853
Management Support Services		
Analyses of Workload and Work Flow	0	0
Directives Management Studies	2,799	1,968
Automatic Data Processing	2,665	1,874
Manpower Systems Analyses	0	0
Preparation of Program Plans	0	0
Training and Education	287	201
Analysis of DOE Management Processes	1,036	728
Reports and Analyses Management and General Administrative Support	12,981	9,130
Total, Management Support Services	19,768	13,901
Total, Support Services	56,382	32,754

Other Related Expenses by Category

	(dollars in thousands)	
	FY 2010 Current Approp	FY 2012 Request
Other Related Expenses		
Rent to GSA	8,460	9,029
Rent to Others	1,200	1,268
Communication, Utilities, Misc.	7,704	8,837
Printing and Reproduction	70	69
Other Services	8,326	6,919
Training	205	203
Purchases from Gov. Accounts	177	175
Operation and Maintenance of Equipment	1,765	1,943
Supplies and Materials	187	184
Equipment	2,871	3,035
Working Capital Fund	14,964	11,057
Total, Other Related Expenses	45,929	42,719

Safeguards and Security

Funding Schedule by Activity

	($ in thousands)	
	FY 2010 Current Appropriation	FY 2012 Request
Defense Environmental Cleanup		
Safeguards and Security		
CB-0020 / Safeguards and Security	4,644	4,845
OH-WV-0020 / Safeguards and Security-West Valley	1,859	1,600
OR-0020 / Safeguards and Security	32,400	17,300
PA-0020 / Safeguards and Security	8,190	9,435
PO-0020 / Safeguards and Security	17,509	16,412
RL-0020 / Safeguards and Security	82,771	69,234
SR-0020 / Safeguards and Security	132,064	130,000
Subtotal, Safeguards and Security	279,437	248,826

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 more than 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[1], 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. These programs are instrumental in supporting EM's cleanup of former nuclear weapons complex facilities ensuring classified, sensitive,

[1] The tritium facilities are under the purview of the National Nuclear Security Administration.

and other matter and information critical to national security interests are protected.

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. In addition to these significant consolidations, EM safeguards and security costs continue to be assessed to identify additional efficiencies in implementing the Department's Graded Security Protection policy which replaced the Design Basis Threat in 2008.

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. EM's footprint reduction, principally through the consolidation of special nuclear materials, has allowed EM to reduce its protective force manpower requirements.

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.

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 the 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 by each EM site.

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. In coordination with the Department's security reform initiative, EM is increasing its role in the areas of risk-management and program oversight.

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 2010 Current Appropriation	FY 2012 Request
CB-0020 / Safeguards and Security	**4,644**	**4,845**

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 2010, the following activity was completed:

(dollars in thousands)

FY 2010 Current Appropriation	FY 2012 Request

- Provided adequate security coverage at the Waste Isolation Pilot Plant.

In FY 2012, the following activity is planned:

- Maintain adequate security coverage at the Waste Isolation Pilot Plant.

Key Accomplishments (FY 2010)/Planned Milestones (FY 2012)
▪ Maintain Security Posture (FY 2012)

OH-WV-0020 / Safeguards and Security-West Valley 1,859 1,600

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 2010, the following activities were completed:

- Provided physical and cyber security by an on-site guard force to ensure all DOE information resources are identified and protected at all times.

- Continued program management to oversee the security program including training and qualifications for the West Valley Demonstration Project.

In FY 2012, 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.

Key Accomplishments (FY 2010)/Planned Milestones (FY 2012)
▪ Continue to support Project activities by providing physical security and protection, cyber security, visitor control, personnel security, and program

(dollars in thousands)

	FY 2010 Current Appropriation	FY 2012 Request

management. (FY 2010)

OR-0020 / Safeguards and Security **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 2010, the following activities were completed:

- Maintained 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.

In FY 2012, the following activity is 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.

Key Accomplishments (FY 2010)/Planned Milestones (FY 2012)

- Implement Safeguards and Security Program to protect against loss or theft of classified matter or SNM (FY 2010)

- Required S&S to protect against loss or theft of classified matter or Special Nuclear Material (September 2012)

PA-0020 / Safeguards and Security **8,190** **9,435**

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,

(dollars in thousands)

FY 2010 Current Appropriation	FY 2012 Request

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 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 2010, the following activity was completed:

- Provided security services for personnel, equipment, information, matter, and special nuclear materials relating to DOE missions, to include decommissioning, decontamination, and demolition activities.

In FY 2012, the following activity is planned:

- Provide security services for personnel, equipment, information, matter, and special nuclear materials relating to DOE missions, to include decommissioning, decontamination, and demolition activities.

Key Accomplishments (FY 2010)/Planned Milestones (FY 2012)

- Ensure no unauthorized person(s) gain site access & that all sensitive material is safeguarded. (FY 2010)
- Ensure that no unauthorized person or persons will gain access to the site and that all sensitive material is safeguarded. (September 2012)

PO-0020 / Safeguards and Security	**17,509**	**16,412**

This PBS provides an integrated Safeguards and Security Program at the Portsmouth site for DOE and its contractor at the Portsmouth Gaseous Diffusion Plant 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

(dollars in thousands)

FY 2010 Current Appropriation	FY 2012 Request

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 2010, the following activities were completed:

- Maintained the appropriate level of safeguards and security using a graded approach for the non-leased portions of the Portsmouth Gaseous Diffusion Plant.
- Provided Protective Forces, Nuclear Material Control and Accountability and communications security services.

In FY 2012, the following activities are planned:

- Continue compliance with Homeland Security Presidential Directive 12 requirements.
- Maintain the appropriate level of safeguards and security using a graded approach for the non-leased portions of the Portsmouth Gaseous Diffusion Plant.
- Provide Physical Protection, Protective Forces, Physical Security Systems, Information Security, Operations Security, Personnel Security, Material Control and Accountability Program Management, and Cyber Security.

Key Accomplishments (FY 2010)/Planned Milestones (FY 2012)

- Maintain appropriate levels of safeguards and security. (FY 2010/September 2012)

RL-0020 / Safeguards and Security	**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

(dollars in thousands)

FY 2010 Current Appropriation	FY 2012 Request

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 2010, the following activities were completed:

- Maintained 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.
- Maintained Material Control and Accountability, Information Security, Personnel Security, and Protective Force at all Hanford operations.
- Maintained information security, to include cyber security, programs for the protection of classified matter.
- Category I special nuclear material de-inventoried from the Plutonium Finishing Plant and consolidated at the new protected area within the 200-East Area.

In FY 2012, 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.

Key Accomplishments (FY 2010)/Planned Milestones (FY 2012)

- De-activate the Plutonium Finishing Plant's protected area (FY 2010)

(dollars in thousands)

	FY 2010 Current Appropriation	FY 2012 Request
▪ Maintain appropriate Hanford site access controls, emergency response, and physical security (FY 2010/September 2012)		
SR-0020 / Safeguards and Security	**132,064**	**130,000**

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.

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 2010, the following activities were completed:

- Operated and maintained the materials control and accountability program for special nuclear material.
- Maintained appropriate uniformed protective force personnel to assure the security of special nuclear materials, facilities, and other site assets.
- Operated and maintained physical security protection systems.
- Ensured protection of classified and unclassified computer security.
- Executed information and operational security measures, cyber security, personnel security and program management for the Savannah River Operations Office.

In FY 2012, 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.

(dollars in thousands)

FY 2010 Current Appropriation	FY 2012 Request

- 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.
- Continue support for H-Area/Tritium Argus projects.
- Continue activities for planned transfer of the remaining consolidated EM material access area to National Nuclear Security Administration control.

Key Accomplishments (FY 2010)/Planned Milestones (FY 2012)

- Access Control within the Site Perimeter (FY 2010)
- Material Control and Accountability for Nuclear Materials (FY 2010/September 2012)
- No theft of nuclear material (FY 2010/September 2012)
- Access Control with the Site Perimeter (September 2012)

Total, Safeguards and Security	**279,437**	**248,826**

Funding Schedule by Site and Activity

	($ in thousands) FY 2010 Current Appropriation	FY 2012 Request
Carlsbad		
Protective Forces	4,214	4,394
Information Security	191	200
Program Management	183	192
Subtotal, Carlsbad	4,588	4,786
Cyber Security	56	59
Total, Carlsbad	4,644	4,845
Oak Ridge		
Protective Forces	23,492	10,120
Physical Security Systems	1,974	1,650

	($ in thousands)	
	FY 2010 Current Appropriation	FY 2012 Request
Information Security	1,021	2,480
Personnel Security	73	0
Security Investigations	1,643	520
Material Control and Accountability	1,943	1,305
Program Management	885	1,225
Subtotal, Oak Ridge	31,031	17,300
Cyber Security	1,369	0
Total, Oak Ridge	32,400	17,300
Paducah		
Protective Forces	4,791	5,520
Physical Security Systems	781	900
Information Security	1,174	1,352
Security Investigations	246	283
Material Control and Accountability	618	712
Program Management	580	668
Total, Paducah	8,190	9,435
Portsmouth		
Protective Forces	8,199	7,139
Physical Security Systems	843	840
Information Security	1,761	1,753
Security Investigations	431	429
Material Control and Accountability	450	449
Program Management	4,925	4,792
Subtotal, Portsmouth	16,609	15,402
Cyber Security	900	1,010
Total, Portsmouth	17,509	16,412
Richland		
Protective Forces	43,111	43,229
Physical Security Systems	15,250	6,908
Information Security	986	1,242
Personnel Security	2,697	2,872
Security Investigations	170	187
Material Control and Accountability	1,965	2,106
Program Management	16,582	10,537
Subtotal, Richland	80,761	67,081
Cyber Security	2,010	2,153
Total, Richland	82,771	69,234
Savannah River		
Protective Forces	93,761	92,604
Physical Security Systems	15,534	11,834
Information Security	1,373	1,694
Personnel Security	6,165	6,727
Security Investigations	460	710
Material Control and Accountability	2,197	2,403
Program Management	10,151	9,976
Transportation	564	473
Subtotal, Savannah River	130,205	126,421
Cyber Security	1,859	3,579

	($ in thousands)	
	FY 2010 Current Appropriation	FY 2012 Request
Total, Savannah River	132,064	130,000
West Valley Demonstration Project		
Protective Forces	1,049	1,137
Program Management	359	389
Subtotal, West Valley Demonstration Project	1,408	1,526
Cyber Security	451	74
Total, West Valley Demonstration Project	1,859	1,600
Total, Safeguards and Security	279,437	248,826

Funding Schedule by Activity

	($ in thousands)	
	FY 2010 Current Appropriation	FY 2012 Request
Protective Forces	178,617	164,143
Physical Security Systems	34,382	22,132
Information Security	6,506	8,721
Personnel Security	8,935	9,599
Security Investigations	2,950	2,129
Material Control and Accountability	7,173	6,975
Program Management	33,665	27,779
Transportation	564	473
Subtotal, Safeguards and Security	272,792	241,951
Cyber Security	6,645	6,875
Safeguards and Security	279,437	248,826

Explanation of Funding Changes

	FY 2012 vs. FY 2010 Current Approp. ($000)
Defense Environmental Cleanup	
Safeguards and Security	
CB-0020 / Safeguards and Security	
▪ Not a significant change.	201
OH-WV-0020 / Safeguards and Security-West Valley	
▪ Not a significant change.	-259

	FY 2012 vs. FY 2010 Current Approp. ($000)
OR-0020 / Safeguards and Security	
▪ The decrease reflects reduced requirements at the East Tennessee Technology Park and at the TRU Waste Facility.	-15,100
PA-0020 / Safeguards and Security	
▪ Not a significant change.	1,245
PO-0020 / Safeguards and Security	
▪ Not a significant change.	-1,097
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
SR-0020 / Safeguards and Security	
▪ Decrease is attributed to the use of prior year carryover funding to offset FY 2012 Safeguards and Security requirements at the Savannah River Site.	-2,064
Total, Safeguards and Security	**-30,611**

Capital Operating Expenses

	FY 2010	FY 2012
General Plant Projects	15,250	6,908

Technology Development and Deployment

Funding Schedule by Activity

	($ in thousands)	
	FY 2010 Current Appropriation	FY 2012 Request
Technology Development and Deployment		
Research and Development to Reduce Technical Risk	19,440	28,586
Small Business Innovative Research Program	0	3,734
Total, Technology Development and Deployment	19,440[1]	32,320[2]

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, Nuclear Materials Disposition, and Deactivation and Decommissioning of contaminated excess facilities including nuclear reactors and chemical separation plants. This narrative only encompasses a portion of the overall research and deployment program.

In FY 2012, related research and development work (specifically in the areas of Tank Waste, Nuclear Materials Disposition, and Deactivation and Decommissioning) can be found in the budgets of the Office of River Protection, Richland, Savannah River, Idaho, and Oak Ridge. Specific accomplishments for the proposed tasks are included in the site information. The comprehensive research investment for EM is contained in these budgets.

The proposed comprehensive 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.

[1] FY 2010, $560,000 ($500,000 for Small Business Innovation Research and $60,000 for Small Business Technical Transfer Programs) transferred to the Office of Science for award and administration of grants to small businesses.
[2] Includes Small Business Innovative Research requirement associated with research and development activities at various sites across the EM complex.

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 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.

Detailed Justification

	(dollars in thousands)	
	FY 2010 Current Appropriation	FY 2012 Request
Research and Development to Reduce Technical Risk	**19,440**	**28,586**

The technology program focuses on providing transformational technical solutions in response to the highest priority needs of the sites for three major challenges: 1) reducing or eliminating technical uncertainties and gaps in site projects; 2) reducing project cost and schedule; and 3) improving worker and public safety.

Tank Waste

The Department has approximately 91 million gallons of liquid waste stored in underground tanks and approximately 4,000 m^3 of solid waste stored in bins derived from the liquids. Research addresses recommendations from the National Research Council of the National Academies of Sciences Final Report (March 2009) "Advice on the Department of Energy's Cleanup Technology roadmap, Gaps and Bridges"; and from the National Research Council of the National Academies, "Waste Forms Technology and Performance" (June 2010). In FY 2012, applied research and technology development activities at the Office of River Protection, Savannah River Site and Idaho will focus on developing or improving waste retrieval and closure technologies; transformational technologies that allow tank waste retrieval to the maximum extent practical followed by chemical cleaning of the waste tank prior to closure.

In FY 2010, the following accomplishments were completed:

- Developed improved understanding of grout formulations and methods for stabilizing residual tank waste.
- Completed bench-scale demonstration of fluidized bed steam reforming technology as an alternative

(dollars in thousands)

FY 2010 Current Appropriation	FY 2012 Request

supplemental treatment method for organic containing wastes.

- Developed low temperature treatment processes to immobilize volatile and semi-volatile radionuclides (e.g., cesium-137, technectium-99, and iodine-129).
- Improved glass formulation and demonstration of high aluminum containing glasses for the Defense Waste Processing Facility.
- Issued the Tank Waste Research and Development Plan.

In FY 2012, the following activities are planned:

- Support Hanford actual tank waste property characterization.
- Support actual waste testing for aluminum precipitation inhibitors to reduce caustic demand.
- Perform predictions of Hanford waste feed tank mixing during batch retrievals.
- Support testing for improved anti-foam agents.
- Down selection of next generation melter technology for engineering development.
- Support advanced glass formulation model for high iron wastes.
- Support advanced glass formulation model for high sulfur wastes.
- Support fluidized bed steam reforming waste source term model results for use in performance assessment.
- Collect data necessary to support decision to proceed with iron phosphate glass development.
- Support maturation of the Hot Isostatic Press Technology.

Soil and Groundwater

As a result of processes used for nuclear weapons production, vast areas of groundwater and soils were contaminated at DOE facilities with chemicals, metals, and radionuclides. FY 2012, activities will focus on the following complex-wide high-risk groundwater and soil remediation research and development:

1) Contaminant Behavior: Develop new approach to understanding fate and transport in the

(dollars in thousands)

FY 2010 Current Appropriation	FY 2012 Request

subsurface. This is an inter-program, cross-cutting effort to coordinate investments being made by the Office of Science (Advanced Scientific Computing Research) and Office of Nuclear Energy (Nuclear Energy Advanced Modeling and Simulation); and

2) Advanced Remediation/Treatment Technologies: Test new absorbents to stabilize mercury contamination in soils and sediments.

In FY 2010, the following accomplishments were completed:

- Improved sampling and characterization at Oak Ridge to detect contamination under slabs and other buried infrastructure using the Membrane Interface Probe.

- Developed advanced site conceptual model techniques to enhance understanding of contaminant fate and transport to determine more effective remediation systems.

- Initiated 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.

- Demonstrated enhanced attenuation technologies for metals and radionuclides stabilization and for solvent contamination at the Savannah River Site specifically silver chloride for stabilization of Iodine-129.

In FY 2012, the following activities are planned:

- Develop and test state-of-the art, science-based modeling capability for next generation of performance assessments: Advanced Simulation Capability for Environmental Management.

- Test and validate innovative subsurface characterization technologies at the EM applied field research sites. Transfer these newly proven technologies to sites across the DOE complex.

- Continue to develop and demonstrate methods for treating mercury in soil and water. Begin laboratory and intermediate-scale comparisons of these methods with respect to their effectiveness and applicability to meet new regulatory requirements.

- Perform field testing and demonstration of the most promising soil treatment methods, including foam-delivery methods for the deep vadose zone. Analyze expected benefits compared to current technologies.

- Continue to perform technical assistance to address specific needs at DOE sites.

(dollars in thousands)

FY 2010 Current Appropriation	FY 2012 Request

- Use Advanced Simulation Capability for Environmental Management 1.0 to integrate data and information from the integrated field sites to iteratively evaluate the alternative approaches for treating key contaminants.

- Test long-term monitoring system developed with regulatory input at Hanford.

Deactivation and Decommissioning

There are currently more than 3,000 excess facilities in the DOE complex awaiting deactivation and decommissioning, many of which are one-of-a-kind and/or unique to DOE with unprecedented scope and complexity. Research activities focus on development of innovative technologies and strategies to meet the deactivation and decommissioning needs of high-risk excess facilities. FY 2012 research and development will focus on:

1) Characterization, Equipment Removal and Dismantlement: Development of technologies to reduce the cost and risk of characterization and dismantlement of highly contaminated facilities.
2) In Situ Decommissioning: Development of technologies that will allow entombed structures to permanently remain in place and provide long-term monitoring to ensure environmental compliance and safety.
3) Robotics and Smart Tooling: Development of the next generation robotic systems that can perform tasks unsafe for human interface.

In FY 2010, the following accomplishments were completed:

- Developed an innovative treatment process for passivating sodium metal and sodium compounds in reactor piping and equipment.

- Developed innovative technologies to support and enable the effective implementation of In-Situ Decommissioning (entombment) of highly contaminated facilities at Savannah River and Richland including specialty grout formulations, degradation studies, and technologies and strategies for long-term performance monitoring.

- Developed a first-of-a-kind sampling/characterization platform and instrumentation to enable remote characterization of highly contaminated off-gas stacks.

- Developed adaptive technologies for equipment removal and dismantlement.

- In collaboration with, and leveraging resources of the United Kingdom Nuclear Decommissioning Authority, completed proof of concept testing and deployment of a unique remote gamma characterization tool.

(dollars in thousands)

FY 2010 Current Appropriation	FY 2012 Request

In FY 2012, the following activities are planned:

- Continue development and testing of innovative embedded sensors and long-term monitoring technologies for In-Situ Decommissioning.
- Develop and deploy transformational characterization technologies for rapid radiation detection, closed systems, and multiple contaminants of concern.
- Initiate development of remote platforms and tooling systems for hot cell cleanout and dismantlement.
- Deploy technologies for hot cell imaging and stabilization.

Nuclear Materials Disposition

EM manages more than 2,400 MTHM of used nuclear fuel stored at multiple locations. DOE will continue to safely store its inventory of nuclear materials and initiate appropriate research and development activities to establish a technical basis for potential extended storage. In FY 2012, research and development activities at the Savannah River National Laboratory, Idaho National Laboratory, and Pacific Northwest Laboratory will include: 1) Application of new technologies to assess and monitor conditions of nuclear materials (including plutonium and used fuel) and storage containment in support of life extension; and 2) Development of improved packaging techniques to reduce the number of DOE standardized canisters which in turn greatly reduces life cycle costs. The laboratories will seek to leverage and integrate available new technologies from potential partners, including other DOE programs and international collaborators.

In FY 2010, the following accomplishments were completed:

- No planned activities in FY 2010.

In FY 2012, the following activities are planned:

- Initiate evaluation, testing, and design for non-destructive examination systems to extend the life of dry storage facilities and components for used nuclear fuel.
- Demonstrate workflow and equipment that can remotely weld DOE standard canisters for used nuclear fuel storage and shipment.

(dollars in thousands)

	FY 2010 Current Appropriation	FY 2012 Request

- Initiate stress corrosion cracking and environmental degradation studies in sealed containment systems and/or aqueous systems with harsh chemistries such as plutonium (3013) containers and used fuel canisters.

Small Business Innovative Research Program	**0**	**3,734**

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 2010, $560,000 ($500,000 for Small Business Innovation Research and $60,000 for Small Business Technical Transfer Programs) was transferred to the Office of Science for award and administration of grants to small businesses. The FY 2012 amount shown is the estimated requirements for the continuation of the Small Business Innovation Research and Small Business Technical Transfer programs. The FY 2012 amount also includes the estimate associated with research and development activities at various sites across the EM complex.

Total, Technology Development and Deployment	**19,440**	**32,320**

Explanation of Funding Changes

	FY 2012 vs. FY 2010 Current Approp. ($000)
Research and Development to Reduce Technical Risk	
▪ Increase reflects additional research and development in support of soil and groundwater remediation activities and the start of research and development to support nuclear material disposition activities.	9,146
Small Business Innovative Research Program	
▪ Increase reflects the mandated assessment of 2.8 percent based on all research investments funded within the EM complex. In FY 2010 the assessment was based on Technology Development and Deployment request and was paid out of Research and Development activities.	3,734
Total, Technology Development and Deployment	**12,880**

GENERAL PROVISIONS

SEC. 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. 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. 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. 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 2012 until the enactment of the Intelligence Authorization Act for fiscal year 2012.

SEC. 305. 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 that 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.

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.

Note.—A full-year 2011 appropriation for this account was not enacted at the time the budget was prepared; therefore, this account is operating under a continuing resolution (P.L. 111–242, as amended). The amounts included for 2011 reflect the annualized level provided by the continuing resolution.