

Department of Energy FY 2016 Congressional Budget Request



Environmental Management

Department of Energy

FY 2016 Congressional

Budget Request



Environmental Management



Volume 5
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FUNDING BY APPROPRIATION

(Discretionary dollars in thousands)

	FY 2014	FY 2014	FY 2015	FY 2016	FY 2016 vs. FY 2015	
	Enacted	Current	Enacted	Request	\$	%
Department of Energy Budget by Appropriation						
Energy and Water Development, and Related Agencies						
Energy Programs						
Energy Efficiency and Renewable Energy	1,900,641	1,824,876	1,914,195	2,722,987	+808,792	+42.3%
Electricity Delivery and Energy Reliability	147,242	144,205	146,975	270,100	+123,125	+83.8%
Nuclear Energy	888,376	877,620	833,379	907,574	+74,195	+8.9%
Fossil Energy Programs						
Clean Coal Technology	0	0	-6,600	0	+6,600	+100.0%
Fossil Energy Research and Development	561,931	550,630	560,587	560,000	-587	-0.1%
Naval Petroleum and Oil Shale Reserves	19,999	22,457	19,950	17,500	-2,450	-12.3%
Elk Hills School Lands Fund	0	0	15,580	0	-15,580	-100.0%
Strategic Petroleum Reserve	189,360	189,360	200,000	257,000	+57,000	+28.5%
Northeast Home Heating Oil Reserve	8,000	8,000	1,600	7,600	+6,000	+375.0%
Total, Fossil Energy Programs	779,290	770,447	791,117	842,100	+50,983	+6.4%
Uranium Enrichment Decontamination and Decommissioning Fund	598,574	598,574	625,000	542,289	-82,711	-13.2%
Energy Information Administration	116,999	116,999	117,000	131,000	+14,000	+12.0%
Non-Defense Environmental Cleanup	231,741	231,782	246,000	220,185	-25,815	-10.5%
Science	5,066,372	5,131,038	5,067,738	5,339,794	+272,056	+5.4%
Advanced Research Projects Agency - Energy	280,000	280,000	279,982	325,000	+45,018	+16.1%
Departmental Administration	126,449	126,449	125,130	153,511	+28,381	+22.7%
Indian Energy Programs	0	0	0	20,000	+20,000	N/A
Office of the Inspector General	42,120	42,120	40,500	46,424	+5,924	+14.6%
Title 17 - Innovative Technology						
Loan Guarantee Program	20,000	7,857	17,000	0	-17,000	-100.0%
Advanced Technology Vehicles Manufacturing Loan Program	6,000	6,000	4,000	6,000	+2,000	+50.0%
Tribal Indian Energy Loan Guarantee Program	0	0	0	11,000	+11,000	N/A
Total, Energy Programs	10,203,804	10,157,967	10,208,016	11,537,964	+1,329,948	+13.0%
Atomic Energy Defense Activities						
National Nuclear Security Administration						
Weapons Activities	7,781,000	7,790,197	8,180,359	8,846,948	+666,589	+8.1%
Defense Nuclear Nonproliferation	1,954,000	1,941,983	1,615,248	1,940,302	+325,054	+20.1%
Naval Reactors	1,095,000	1,101,500	1,233,840	1,375,496	+141,656	+11.5%
Office of the Administrator	377,000	370,500	0	0	0	N/A
Federal Salaries and Expenses	0	0	369,587	402,654	+33,067	+8.9%
Total, National Nuclear Security Administration	11,207,000	11,204,180	11,399,034	12,565,400	+1,166,366	+10.2%
Environmental and Other Defense Activities						
Defense Environmental Cleanup	5,000,000	4,999,293	5,453,017	5,527,347	+74,330	+1.4%
Other Defense Activities	755,000	755,000	753,449	774,425	+20,976	+2.8%
Total, Environmental and Other Defense Activities	5,755,000	5,754,293	6,206,466	6,301,772	+95,306	+1.5%
Total, Atomic Energy Defense Activities	16,962,000	16,958,473	17,605,500	18,867,172	+1,261,672	+7.2%
Power Marketing Administrations						
Southeastern Power Administration	0	0	0	0	0	N/A
Southwestern Power Administration	11,892	11,892	11,400	11,400	0	0
Western Area Power Administration	95,930	95,930	91,740	93,372	+1,632	+1.8%
Falcon and Amistad Operating and Maintenance Fund	420	420	228	228	0	0
Colorado River Basins Power Marketing Fund	-23,000	-23,000	-23,000	-23,000	0	0
Total, Power Marketing Administrations	85,242	85,242	80,368	82,000	+1,632	+2.0%
Federal Energy Regulatory Commission	0	0	0	0	0	N/A
Subtotal, Energy and Water Development and Related Agencies	27,251,046	27,201,682	27,893,884	30,487,136	+2,593,252	+9.3%
Uranium Enrichment Decontamination and Decommissioning Fund						
Discretionary Payments	0	0	-463,000	-471,797	-8,797	-1.9%
Excess Fees and Recoveries, FERC	-26,236	-19,686	-28,485	-23,587	+4,898	+17.2%
Title XVII Loan Guarantee Program Section 1703 Negative Credit						
Subsidy Receipt	0	0	0	-68,000	-68,000	N/A
Total, Discretionary Funding by Appropriation	27,224,810	27,181,996	27,402,399	29,923,752	+2,521,353	+9.2%

**Environmental Management
Proposed Appropriations 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 [sport utility vehicle, one heavy duty truck, two ambulances,] fire apparatus pumper truck and one [ladder fire truck] armored vehicle for replacement only, [\$5,010,830,000]\$5,055,550,000, to remain available until expended: Provided, That [\$280,784,000]\$281,951,000 shall be available until September 30, [2016]2017, for program direction[: Provided further, That \$10,830,000 from unobligated balances available from prior year appropriations provided under this heading is hereby rescinded: Provided further, That no amounts may be rescinded from amounts that were designated by the Congress as an emergency requirement pursuant to a concurrent resolution on the budget or the Balanced Budget and Emergency Deficit Control Act of 1985]. (Energy and Water Development and Related Agencies Appropriations Act, 2015.)

(Legislative proposal, not subject to PAYGO)

Contingent upon the enactment of legislation reauthorizing the Uranium Enrichment Decontamination and Decommissioning Fund, \$471,797,000, which shall be transferred to "Uranium Enrichment Decontamination and Decommissioning Fund".

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 nondefense 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, [\$246,000,000]\$220,185,000, to remain available until expended[: Provided, That funding made available under this heading may be made available for 15-D-410 Fort St. Vrain Facility Improvements Project]. (Energy and Water Development and Related Agencies Appropriations Act, 2015.)

Uranium Enrichment Decontamination and Decommissioning Fund

For Department of Energy expenses necessary 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, [\$625,000,000]\$542,289,000, to be derived from the Uranium Enrichment Decontamination and Decommissioning Fund, to remain available until expended, of which [\$10,000,000] \$32,959,000 shall be available in accordance with title X, subtitle A, of the Energy Policy Act of 1992. (Energy and Water Development and Related Agencies Appropriations Act, 2015.)

Public Law Authorizations

- Public Law 95-91, "Department of Energy Organization Act (1977)"
- Public Law 102-579, "Waste Isolation Pilot Plant Land Withdrawal Act (1992)"
- H.R. 776, "Energy Policy Act of 1992"
- Public Law 103-62, "Government Performance and Results Act of 1993"
- Public Law 111-352, "GPR Modernization Act of 2010"
- Public Law 113-66, "National Defense Authorization Act for Fiscal Year 2014"

Environmental Management (\$K)

	FY 2014 Enacted	FY 2014 Current	FY 2015 Enacted	FY 2016 Request
Defense Environmental Cleanup	5,000,000	4,999,293	5,473,830	5,527,347
Non-Defense Environmental Cleanup	233,947	233,988	246,000	220,185
Uranium Enrichment Decontamination and Decommissioning Fund	598,574	598,574	625,000	542,289
Subtotal, Environmental Management	5,832,521	5,831,855	6,344,830	6,289,821
D&D Fund Offset	0	0	-463,000	-471,797
Prior Year Unobligated Rescission - Defense	0	0	-20,813	0
Use of Prior year (Non-Defense Environmental Cleanup)	-2,206	-2,206	0	0
Total, Environmental Management	5,830,315	5,829,649	5,861,017	5,818,024

Overview

The Office of Environmental Management (EM) supports the Department’s Strategic Plan to position the Department of Energy to meet the challenges of the 21st century and the nation’s Manhattan Project and Cold War legacy responsibilities. The Department will leverage past experience, applying best practices and lessons learned; identify, develop, and deploy practical technological solutions derived from scientific research; and look for innovative and sustainable practices that make cleanup more efficient.

The EM program was established in 1989 and is responsible for the cleanup of millions of gallons of liquid radioactive waste, thousands of tons of spent (used) nuclear fuel and special nuclear material, disposition of large volumes of transuranic and mixed/low-level waste, huge quantities of contaminated soil and water, and deactivation and decommissioning of thousands of excess facilities. This environmental cleanup program results from five decades of nuclear weapons development and production and Government-sponsored nuclear energy research. It involves some of the most dangerous materials known to humankind. EM has completed cleanup activities at 91 sites in 30 states and in the Commonwealth of Puerto Rico; EM is responsible for the remaining cleanup at 16 sites in 11 states.

EM continues to pursue its cleanup objectives safely within a framework of regulatory compliance commitments and best business practices. The rationale for cleanup prioritization is based on achieving the highest risk reduction benefit per radioactive content (activities focused on wastes that contain the highest concentrations of radionuclides and sites with the highest radionuclide contamination). Taking many variables into account, EM has generally prioritized its cleanup activities as follows:

- 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

- Transuranic and mixed/low-level waste disposition
- Soil and groundwater remediation
- Excess facilities deactivation and decommissioning.

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. This ensures protection for the workers, public, and the environment.

EM continued to make progress in cleaning up the complex in FY 2014. For example, in the High Level Tank Waste program area, EM has completed closure of Tanks 5 and 6 at the Savannah River Site and initiated work on Tanks 12 and 16. At Idaho, EM completed construction of the Accelerated Retrieval Project (ARP) VIII on schedule and under cost and continued the buried waste exhumation at ARP areas VII and VIII in FY 2014. This is the largest ARP constructed to date at 1.72 acres. At Oak Ridge, EM completed demolition of the North Tower of the K-25 uranium processing facility and initiated characterization at K-27 in FY 2014, and will continue activities to plan and prepare for the processing phase of the U-233 project. At Moab in FY 2014, EM continued project activities to excavate, transport, and disposed of uranium mill tailings at the Crescent Junction disposal facility. To date, 7 million tons out of 16 million total tons have been removed from Moab. Finally, key EM reforms in contract and project management are bearing fruit.

EM’s progress and planned scope in FY 2015 and FY 2016 continues to be affected by several ongoing events. First, on February 5, 2014, the Waste Isolation Pilot Plant (WIPP) suffered an underground fire in a salt hauler vehicle. Workers were evacuated and the underground portion of WIPP was shut down. On February 14, 2014, a radiation leak was detected below ground in WIPP's south mine. A chemical reaction caused a release from a waste drum and trace amounts of americium and plutonium were detected about a half-mile outside of the facility. After contamination was discovered, site access was restricted to essential personnel, and WIPP has remained closed without accepting any shipments since the radiation leak. The WIPP site cannot reopen until worker, environmental, and public safety can be assured. The Department released a plan on September 30, 2014, to reopen WIPP with safety as the top concern in the recovery process. At this point, it is premature to say when shipments can resume. WIPP will reopen only when it is safe to do so. The Department is committed to planning and implementing the required recovery actions and corrective actions to enable a resumption of operations as quickly as can safely be achieved. Also, it is too early to estimate the total cost of reopening WIPP to once again receive shipments of transuranic waste. Discussions are ongoing with all parties involved to determine requirements to support the safe reopening of the site. The FY 2016 budget request assumes WIPP will achieve interim restart by the middle of FY 2016.

Second, in 2010, DOE entered into a Consent Decree with the State of Washington in the case of *State of Washington v. United States Department of Energy*, No. 08-5085-FVS (E.D. Wash.). This Consent Decree establishes court-enforceable milestones for construction and startup activities of the Waste Treatment and Immobilization Plant (WTP) and retrieval of single-shell tank waste from C-Farm and nine additional tanks. Since multiple technical and programmatic issues with WTP and the tank farms have arisen since 2010, DOE has informed the state that there exists serious risk that DOE may be unable to meet certain of these milestones for the construction and startup of WTP. DOE has also provided the State notice that it may be unable to meet certain milestones for tank retrievals, despite DOE’s exercise of reasonable diligence. DOE negotiated with the State of Washington from March through September, 2014, but could not reach agreement. Both sides filed a proposal to amend the Consent Decree with the Court on October 3, 2014. On December 5, 2014, both sides filed response briefs with the Court. A third round of filings is due in mid-January 2015 and oral arguments are in Richland in February 2015. The state's proposal has completion dates for WTP and the ancillary facilities through 2031, expanded single shell tank retrievals, and new double shell tank retrievals. DOE’s proposal keeps the original Consent Decree scope of some single shell tank retrievals and finishing WTP, although until technical issues are resolved, DOE does not commit to any completion dates for high-level waste and pre-treatment. Differences between the state’s and DOE’s proposals will

have to be resolved before more specific costs and schedules can be finalized for WTP. The Office of River Protection and WTP remain a high priority for EM and the Department.

American Reinvestment and Recovery Act

As of September 30, 2014, EM's final expenditures totaled \$5,976,914,626 or 99.89 percent, of the \$5,983,705,893 in Recovery Act funding used to achieve footprint reduction and complete near-term cleanup activities. More than 11,000 highly skilled technical jobs were created by Recovery Act activities in various states across the EM complex.

EM has completed all fieldwork, project documentation, and financial closed out of all 134 projects originated under its ARRA program. Projects were completed at 92% success rate (completed scope within ± 10 percent of original planned cost and schedule).

Highlights and Major Changes in the FY 2016 Budget Request

The FY 2016 investment of \$5,818,024,000 in budget authority funds activities to maintain a safe and secure posture in the EM complex, while maximizing the investment in compliance activities. To that end, we will engage with our federal and state regulators regarding compliance requirements that may result in changes to the cleanup milestones in 2016. The FY 2016 budget request supports the continued construction of two unique and complex tank waste processing plants at the Savannah River Site and the Office of River Protection. EM is working closely with our contractors to identify the most economical and timely path for completion. Eventually, these two sites will treat over 80 million gallons of radioactive tank waste for ultimate disposal.

In FY 2016 much progress will be made on the treatment of high level radioactive waste in tanks across the complex. Sodium-bearing waste operations at Idaho will continue in FY 2016. This budget supports the removal of tank sludges and the cleaning and grouting activities supporting the closure of the final four high level waste tanks at the site. At the Savannah River site, the FY 2016 request supports continued production of 120-130 canisters of vitrified waste derived and processed from the high level waste tanks, and the construction of an additional on-site disposal space for saltstone. Both of these activities will contribute to high level radioactive liquid waste elimination and eventual tank closure.

Before the radioactively contaminated buildings in the Environmental Management program can be decontaminated and demolished, sufficient disposal space for debris must be made available. This budget supports the design and permitting of on-site disposal cells at Portsmouth and Paducah, enabling the work to commence on the disposition of waste from the decontamination and decommissioning of the gaseous diffusion plants at these locations.

The FY 2016 budget supports the ongoing cleanup effort at the East Tennessee Technology Park, at Oak Ridge. EM is in the process of demolishing the last remaining gaseous diffusion plant, K-27, at the site. The budget also supports investment in mercury characterization and remediation technologies and the design for an eventual Mercury Treatment Facility.

The Department is working aggressively to complete and operate the treatment facilities and infrastructure to safely immobilize and dispose of tank waste at Hanford. This budget supports continued construction of the Low-Activity Waste Facility, Balance of Facilities and Analytical Laboratory, as well as production engineering and construction on the High Level Waste Facility, while resources are dedicated to promptly resolve the outstanding technical issues of the High-Level Waste and Pretreatment Facilities.

To help address many of the technical challenges involved with high-risk activities, EM is requesting \$17,310,000 for the Technology Development and Deployment program. Of this \$17,380,000, \$2,800,000 is for Oak Ridge to improve understanding of mercury transport through the environmental media and to develop characterization, removal, and waste

treatment/disposition techniques. The remaining \$14,510,000 is for Headquarters. This program includes Site- and Headquarters-managed projects. One of several projects EM plans to undertake in FY 2016 includes testing multiple technologies to solidify/stabilize mercury in soil to minimize release across the Oak Ridge site when we begin decontamination and decommissioning of excess facilities. The Headquarters-managed projects, on the other hand, are applied research projects to be used in the development of applications of the technology in program activities across multiple sites. In FY 2016, for instance, EM will invest in a state-of-the-art modeling and analysis tool to simulate movement of subsurface contaminants in groundwater through various soil conditions. Progress in this area will allow cleanup efforts to move quickly to monitored natural attenuation, which has the potential to save billions in life-cycle costs.

The budget also includes approximately \$126,000,000 to support mission activities and cleanup technology performed or developed by the Savannah River National Laboratory to enhance cleanup progress at Savannah River and across the EM complex. For example, in FY 2016 the lab will support tank waste technology development including means to separate the high activity radionuclides in order to disposition the high level waste along with various unit operations such as filtering, grinding, and retrieval; conduct sampling and analysis of special nuclear materials; develop tank waste mixing and tank closure technologies; develop flow sheets and models to support the processing of radioactive waste; develop groundwater remediation and facility decontamination and decommissioning technology; and develop next-generation cleanup technologies.

The FY 2016 Budget funds the following specific activities:

At Idaho, the FY 2016 request will support operations of the Sodium Bearing Waste Treatment facility. This facility will treat approximately 900,000 gallons of sodium bearing waste stored in tanks that are 35 to 45 years old. The treatment of this waste will enable EM to clean out the final four tanks at the site, and complete treatment of all liquid tank waste at Idaho. The request also continues exhumations at the Subsurface Disposal Area, treatment of legacy contact-handled and remote-handled transuranic and mixed low-level waste and safe, secure management of spent (used) nuclear fuel.

Idaho's FY 2016 request will support the requirements of the Idaho Settlement Agreement. These include packaging, characterizing, and certifying remote-handled transuranic waste at the Idaho Nuclear Technology and Engineering Center and contact-handled stored legacy transuranic waste processing at the Advanced Mixed Waste Treatment Facility, as well as potentially a small volume of transuranic waste from other DOE sites that do not have characterization and treatment capabilities. Additionally, the request will support disposing of remote-handled low-level waste at the Radioactive Waste Management Complex and mixed low-level waste at appropriate off-site disposal facilities. The request will continue progress in retrieving targeted waste at the Subsurface Disposal Area under the Accelerated Retrieval Project. It will also continue activities for closure of the tank farm and management of spent nuclear fuel, including retrieval of fuel from wet storage to dry storage and planning for spent nuclear fuel disposition.

At the Office of River Protection, the FY 2016 budget request is designed to maintain safe operations for the tank farms and enable the development of infrastructure necessary for waste treatment operations, while continuing construction on the Low-Activity Waste Facility, Balance of Facilities, and Analytical Laboratory. It will also allow for continued work on technical issue resolution for the Pretreatment Facility and the High Level Waste Facility. This WTP budget is designed to move the WTP toward immobilization of low activity waste as soon as practicable while resolution of technical issues continues. The FY 2016 budget includes support for the ramp up of design activities for a Low Activity Waste Pretreatment System and support of the direct feed Low Activity Waste initiative in the tank farms.

At the Savannah River Site, the largest portion of the FY 2016 request supports the Liquid Tank Waste Management Program. The liquid waste tanks pose the highest public, worker, and environmental risk at the site; therefore, stabilization and preparation for disposal are a high priority. Scope includes the operation of the Defense Waste Processing Facility and management of the tank farms. In addition, the request supports continued construction of the Salt Waste Processing

Facility and Saltstone Disposal Unit #6, and operation of the Actinide Removal Process and Modular Caustic Side Extraction Unit. This unit will be needed until the Salt Waste Processing Facility begins operation. The request also supports the operations of the Saltstone Facility and the Effluent Treatment Facility.

The FY 2016 request supports the Savannah River Site to operate H Canyon in a safe and secure manner. The request also provides safe, secure storage for spent (used) nuclear fuel in L-Area.

In FY 2016, the budget request will support the deactivation and decommissioning project at the Portsmouth Gaseous Diffusion Plant in Piketon, Ohio, by providing the site a total of \$227,221,000. The majority of the funding request, \$131,117,000, will be used for deactivation and decommissioning of gaseous diffusion plant ancillary facilities and systems, disposal of waste, small equipment removal, utility optimizations, and hazardous material abatement. The FY 2016 request also includes \$34,300,000 for design and construction of a potential on-site landfill for the disposal of waste expected to be generated from the demolition of the Portsmouth Gaseous Diffusion Plant and associated facilities. In addition, the request includes \$51,517,000 to continue the safe operation of the DUF6 Conversion facility that converts depleted uranium hexafluoride into a more stable depleted uranium oxide form suitable for reuse or disposition.

In FY 2016, the Paducah site's budget request of \$232,129,000 will support activities to further stabilize the Paducah Gaseous Diffusion Plant that is being returned to the Department of Energy from the United States Enrichment Corporation in 2015. Of that total, \$167,456,000 will support stabilization of shutdown facilities, including facility modifications, surveillance and maintenance, and actions to remove hazardous materials, and the continued environmental remediation activities in compliance with the Federal Facility Agreement. Additionally, \$51,517,000 is requested for continued safe operation of the DUF6 Conversion facility that converts depleted uranium hexafluoride into a more stable depleted uranium oxide form suitable for reuse or disposition.

The Richland Operations Office planned accomplishments for FY 2016 include the following significant activities: maintain safe operations for Richland Operations; provide Hanford site-wide services; continue Plutonium Finishing Plant decommissioning and demolition to Slab-on-Grade by September 2016; make significant progress in the River Corridor cleanup; and continue groundwater remedy implementation and environmental monitoring. In addition, the Richland Operations Office will provide critical infrastructure repairs and upgrades to support cleanup operations and the Waste Treatment and Immobilization Plant. Cleanup work is accomplished while maintaining safe and compliant waste management, decontamination and decommissioning, and groundwater remediation capabilities in the Central Plateau.

At Oak Ridge, the FY 2016 request will maintain EM facilities in a safe, compliant, and secure manner; operate EM waste management facilities such as the on-site disposal facility, sanitary landfills, and liquid, gaseous and waste operations at Oak Ridge National Laboratory; continue development of Comprehensive Environmental Response, Compensation and Liability Act documentation for the new On-Site Disposal Facility; continue demolition of Buildings K-27 and K-31 at East Tennessee Technology Park; and continue design for the Mercury Treatment Facility at the Y-12 National Security Complex. The processing of contact-handled and remote-handled transuranic waste debris will continue at the Transuranic Waste Processing Center and technology maturation and design continues for the Sludge Processing Facility Buildout project. Additionally, the budget supports direct disposition of Consolidated Edison Uranium Solidification Project material from Building 3019 assuming resolution of stakeholder concerns.

EM continues to support recovery from two incidents at the Waste Isolation Pilot Plant, near Carlsbad, New Mexico in FY 2014 which interrupted the nation-wide program for the transportation and disposition of transuranic waste at Carlsbad. Since opening the Waste Isolation Pilot Plant, EM has sent more than 11,800 shipments of transuranic waste for permanent disposal, safely emplacing nearly 90,000 cubic meters of waste. The FY 2016 request will continue Waste Isolation Pilot Plant recovery, regulatory and environmental compliance actions, and the Central Characterization Project and transportation activities. Central Characterization Project scope includes legacy transuranic waste characterization, and

certification at Idaho National Laboratory (transportation certification only, where Idaho National Laboratory funds characterization certification) and the Oak Ridge National Laboratory. Transportation activities include maintenance of core shipping capabilities and operations for potential inter-site shipments, preservation of shipping corridors and required cask maintenance.

Departmental Crosscuts

The Department is organized into three Under Secretariats—Science and Energy, Nuclear Security, and Management and Performance—which recognize the complex interrelationship among DOE Program Offices. The FY 2016 Budget continues crosscutting programs which coordinate across the Department and seek to tap DOE’s full capability to effectively and efficiently address the U.S.’s energy, environmental, and national security challenges. These crosscutting initiatives will be discussed further within the programs in which the crosscuts are funded. The FY 2016 Request for EM contains the following crosscuts:

Subsurface Engineering: The subsurface crosscut, SubTER, will address identified challenges in the subsurface through highly focused and coordinated research in Wellbore Integrity, Stress State and Induced Seismicity, Permeability Manipulation, and New Subsurface Signals to ensure enhanced energy security, material impact on climate change via CO2 sequestration, and significantly mitigated environmental impacts from energy-related activities and operations.

Cybersecurity: DOE is engaged in three categories of cyber-related activities: protecting the DOE enterprise from a range of cyber threats that can adversely impact mission capabilities; bolstering the U.S. Government’s capabilities to address cyber threats; and, improving cybersecurity in the electric power subsector and the oil and natural gas subsector. The cybersecurity crosscut supports central coordination of the strategic and operational aspects of cybersecurity and facilitates cooperative efforts such as the Joint Cybersecurity Coordination Center for incident response and the implementation of Department-wide Identity Credential and Access Management.

FY 2016 Crosscuts (\$K)

	Cyber-security	Subsurface Engineering	Total
Carlsbad	845	0	845
Idaho	0	3,000	3,000
Oak Ridge	1,766	0	1,766
Paducah/Portsmouth	1,919	0	1,919
Richland	8,211	3,000	11,211
Savannah River	3,752	0	3,752
West Valley	877	0	877
Technology Development and Deployment	0	2,000	2,000
Total, Crosscuts	17,370	8,000	25,370

Environmental Management Funding by Congressional Control (\$K)

	FY 2014 Enacted	FY 2014 Current	FY 2015 Enacted	FY 2016 Request	FY 2016 vs FY 2015
Defense Environmental Cleanup					
Closure Sites					
Closure Sites Administration	4,702	4,702	4,889	4,889	0
Hanford Site					
Central Plateau Remediation	512,665	512,665	497,456	555,163	+57,707
Richland Community and Regulatory Support	19,701	19,701	19,701	14,701	-5,000
River Corridor and Other Cleanup Operations	408,634	408,634	377,788	196,957	-180,831
Construction					
15-D-401: Containerized Sludge (KBC Sludge Removal Annex Construction), RL (RL-0012)	0	0	46,055	77,016	+30,961
Total, Hanford Site	941,000	941,000	941,000	843,837	-97,163
Idaho National Laboratory					
Idaho Cleanup and Waste Disposition	383,300	383,300	377,293	357,783	-19,510
Idaho Community and Regulatory Support	3,700	3,700	2,910	3,000	+90
Total, Idaho National Laboratory	387,000	387,000	380,203	360,783	-19,420
NNSA Sites					
Lawrence Livermore National Laboratory	1,476	1,476	1,366	1,366	0
Los Alamos National Laboratory	224,789	224,789	185,000	188,625	+3,625
Nevada	61,897	61,897	64,851	62,385	-2,466
Sandia National Laboratories	2,814	2,814	2,801	2,500	-301
Separations Processing Research Unit	23,700	23,700	0	0	0
Construction					
15-D-406: Hexavalent Chromium Pump and Treatment Remedy Project, LANL (VL-LANL-0030)	0	0	4,600	0	-4,600
Total, NNSA Sites	314,676	314,676	258,618	254,876	-3,742
Oak Ridge					
OR Cleanup and Disposition	83,220	83,220	131,930	60,500	-71,430
OR Nuclear Facility D&D	73,716	73,716	73,155	75,958	+2,803
OR Reservation Community and Regulatory Support	4,365	4,365	4,365	4,400	+35
OR Technology Development and Deployment	4,091	3,960	0	2,800	+2,800
U233 Disposition Program	45,000	45,000	0	26,895	+26,895
Construction					
15-D-405: Sludge Build-Out, OR (OR-0013B)	0	0	4,200	0	-4,200
14-D-403: Outfall 200 Mercury Treatment Facility, OR	4,608	4,608	9,400	6,800	-2,600

	FY 2014 Enacted	FY 2014 Current	FY 2015 Enacted	FY 2016 Request	FY 2016 vs FY 2015
(OR-0041)					
Total, Construction	4,608	4,608	13,600	6,800	-6,800
Total, Oak Ridge	215,000	214,869	223,050	177,353	-45,697
Office of River Protection					
Tank Farm Activities	520,216	520,216	522,000	649,000	+127,000
Construction					
15-D-409: Low Activity Waste Pretreatment System, ORP (ORP-0014)	0	0	23,000	75,000	+52,000
01-D-16E: Pretreatment Facility, RL	180,000	180,000	104,000	95,000	-9,000
01-D-16-A-D: Waste Treatment and Immobilization Plant - Sub-Projects A-D, RL	510,000	510,000	563,000	595,000	+32,000
Total, Construction	690,000	690,000	690,000	765,000	+75,000
Total, Office of River Protection	1,210,216	1,210,216	1,212,000	1,414,000	+202,000
Savannah River Site					
Radioactive Liquid Tank Waste Stabilization and Disposition	565,533	565,533	547,318	581,878	+34,560
Savannah River Risk Management Operations	432,491	432,491	397,976	386,652	-11,324
SR Community and Regulatory Support	11,210	11,210	11,013	11,249	+236
Construction					
05-D-405: Salt Waste Processing Facility, SR	125,000	125,000	135,000	194,000	+59,000
15-D-402: Saltstone Disposal Unit #6, SR (SR-0014C)	0	0	30,000	34,642	+4,642
Total, Construction	125,000	125,000	165,000	228,642	+63,642
Total, Savannah River Site	1,134,234	1,134,234	1,121,307	1,208,421	+87,114
Waste Isolation Pilot Plant					
Waste Isolation Pilot Plant	216,193	216,193	304,000	212,600	-91,400
Construction					
15-D-411: Safety Significant Confinement Ventilation System, WIPP	0	0	12,000	23,218	+11,218
15-D-412: Exhaust Shaft, WIPP	0	0	4,000	7,500	+3,500
Total, Construction	0	0	16,000	30,718	+14,718
Total, Waste Isolation Pilot Plant	216,193	216,193	320,000	243,318	-76,682
Program Support					
Mission Support	17,979	17,979	14,979	14,979	0
Program Direction	300,000	300,000	280,784	281,951	+1,167
Safeguards and Security	241,000	241,000	240,000	236,633	-3,367
Technology Development and Deployment					
Mission Support	18,000	17,424	14,000	14,510	+510
Defense Uranium Enrichment Decontamination and	0	0	463,000	471,797	+8,797

	FY 2014 Enacted	FY 2014 Current	FY 2015 Enacted	FY 2016 Request	FY 2016 vs FY 2015
Decommissioning					
Total, Defense Environmental Cleanup	5,000,000	4,999,293	5,473,830	5,527,347	+53,517
Non-Defense Environmental Cleanup					
Fast Flux Test Reactor Facility D&D					
Fast Flux Test Reactor Facility D&D	2,542	2,542	2,562	2,562	0
Gaseous Diffusion Plants					
Paducah Gaseous Diffusion Plant	46,870	46,861	52,886	52,886	0
Portsmouth Gaseous Diffusion Plant	49,352	49,361	51,517	51,517	0
Total, Gaseous Diffusion Plants	96,222	96,222	104,403	104,403	0
Small Sites					
Closure Sites Administration	0	0	8,408	0	-8,408
DOE-Sponsored Facilities (per P.L. 112-74)	17,786	17,786	0	0	0
Energy Technology Engineering Center	9,404	9,367	8,959	10,459	+1,500
Idaho National Laboratory	4,993	6,593	7,900	5,919	-1,981
Moab	38,000	36,478	35,663	37,629	+1,966
Oak Ridge	0	0	2,119	0	-2,119
Southwest Experimental Fast Oxide Reactor (SEFOR) Construction	1,000	1,000	0	0	0
15-D-410: Ft. St. Vrain Security Upgrades, ID	0	0	17,000	0	-17,000
Total, Small Sites	71,183	71,224	80,049	54,007	-26,042
West Valley Demonstration Project	64,000	64,000	58,986	59,213	+227
Total, Non-Defense Environmental Cleanup	233,947	233,988	246,000	220,185	-25,815
Uranium Enrichment Decontamination and Decommissioning Fund					
Oak Ridge					
Oak Ridge	195,741	195,741	167,898	154,235	-13,663
Paducah					
Paducah Gaseous Diffusion Plant Construction	265,220	265,220	198,729	167,456	-31,273
15-U-407: On-Site Waste Disposal Facility, Paducah (PA- 0040)	0	0	8,486	0	-8,486
16-U-401: SWMU 5&6, Paducah	0	0	0	1,196	+1,196
Total, Construction	0	0	8,486	1,196	-7,290
Total, Paducah	265,220	265,220	207,215	168,652	-38,563
Portsmouth					

	FY 2014 Enacted	FY 2014 Current	FY 2015 Enacted	FY 2016 Request	FY 2016 vs FY 2015
Portsmouth Gaseous Diffusion Plant Construction	137,613	137,613	209,524	131,117	-78,407
15-U-408: On-Site Waste Disposal Facility, Portsmouth (PO-0040)	0	0	4,500	34,300	+29,800
Total, Portsmouth	137,613	137,613	214,024	165,417	-48,607
Pension and Community and Regulatory Support					
Oak Ridge	0	0	21,693	16,856	-4,837
Paducah Gaseous Diffusion Plant	0	0	2,375	2,375	0
Portsmouth Gaseous Diffusion Plant	0	0	1,795	1,795	0
Total, Pension and Community and Regulatory Support	0	0	25,863	21,026	-4,837
U/Th Reimbursements					
Mission Support	0	0	10,000	32,959	+22,959
Total, Uranium Enrichment Decontamination and Decommissioning Fund	598,574	598,574	625,000	542,289	-82,711
Total, Environmental Management	5,832,521	5,831,855	6,344,830	6,289,821	-55,009
D&D Fund Offset	0	0	-463,000	-471,797	-8,797
Prior Year Unobligated Rescission - Defense	0	0	-20,813	0	+20,813
Use of Prior year (Non-Defense Environmental Cleanup)	-2,206	-2,206	0	0	0
Total, Environmental Management	5,830,315	5,829,649	5,861,017	5,818,024	-42,993
Full Time Equivalents	1,376	1,376	1,500	1,490	-10

SBIR/STTR:

- FY 2014 Transferred to the Office of Science: SBIR: \$619; STTR: \$88
- FY 2015 Request: SBIR \$406; STTR \$56
- FY 2016 Request: SBIR \$520; STTR \$78

**Environmental Management
Funding by Budget Chapters (\$K)**

	FY 2014 Enacted	FY 2014 Current	FY 2015 Enacted	FY 2016 Request	FY 2016 vs FY 2015
Carlsbad	221,170	221,170	324,455	248,178	-76,277
Idaho	391,993	393,593	405,103	366,702	-38,401
Oak Ridge	429,541	429,410	431,142	365,672	-65,470
Paducah	324,524	324,515	269,773	232,129	-37,644
Portsmouth	199,465	199,474	275,828	227,221	-48,607
Richland	1,012,620	1,012,620	1,007,230	914,000	-93,230
River Protection	1,210,216	1,210,216	1,212,000	1,414,000	+202,000
Savannah River	1,255,430	1,255,430	1,259,542	1,336,766	+77,224
Lawrence Livermore National Laboratory	1,476	1,476	1,366	1,366	0
Los Alamos National Laboratory	224,789	224,789	189,600	188,625	-975
Nevada	61,897	61,897	64,851	62,385	-2,466
Sandia Site Office	2,814	2,814	2,801	2,500	-301
Separations Process Research Unit SPRU	23,700	23,700	0	0	0
West Valley Demonstration Project	66,015	66,015	60,457	61,104	+647
Energy Technology Engineering Center	9,404	9,367	8,959	10,459	+1,500
Moab	38,000	36,478	35,663	37,629	+1,966
Other Sites					
Closure Sites Administration	4,702	4,702	13,297	4,889	-8,408
DOE-Sponsored Facilities (per P.L. 112-74)	17,786	17,786	0	0	0
Southwest Experimental Fast Oxide Reactor (SEFOR)	1,000	1,000	0	0	0
Subtotal, Other Sites	23,488	23,488	13,297	4,889	-8,408
Program Direction	300,000	300,000	280,784	281,951	+1,167
D&D Fund Deposit	0	0	463,000	471,797	+8,797
Mission Support	35,979	35,403	38,979	62,448	+23,469
Subtotal, Environmental Management	5,832,521	5,831,855	6,344,830	6,289,821	-55,009
D&D Fund Offset	0	0	-463,000	-471,797	-8,797
Prior Year Unobligated Rescission - Defense	0	0	-20,813	0	+20,813
Use of Prior year (Non-Defense Environmental Cleanup)	-2,206	-2,206	0	0	0
Total, Environmental Management	5,830,315	5,829,649	5,861,017	5,818,024	-42,993

**Environmental Management
Capital Summary (\$K)**

Total	Prior Years	FY 2014 Enacted	FY 2014 Current	FY 2015 Enacted	FY 2016 Request	FY 2016 vs FY 2015
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Capital Operating Expenses Summary (including (Major Items of Equipment (MIE))

Capital Equipment > \$500K (including MIE)	0	0	0	0	0	0	
Plant Projects (GPP and IGPP) (<\$10M)	0	0	22,452	22,452	38,404	58,921	+20,517
Total, Capital Operating Expenses	0	0	22,452	22,452	38,404	58,921	+20,517

Capital Equipment > \$500K (including MIE)	0	0	0	0	0	0
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Total, Capital Equipment (including MIE)	0	0	22,452	22,452	38,404	58,921	+20,517
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Plant Projects (GPP and IGPP) (Total Estimated Cost (TEC) <\$10M)

Waste Isolation Pilot Plant

Building-452 Cooling System Installation	0	0	0	0	250	0	-250
140/25T RH Crane Upgrades	0	0	0	0	244	0	-244
Total, Waste Isolation Pilot Plant	0	0	0	0	494	0	-494

Note: These amounts are draft and will be updated as part of the recovery efforts that are currently underway at the Waste Isolation Pilot Plant in Carlsbad, New Mexico.

Oak Ridge

SWSA 5	0	0	2,916	2,916	0	0	0
Total, Oak Ridge	0	0	2,916	2,916	0	0	0

Richland

200-UP-1 Uranium and Tech 99 Remedy Implementation	0	0	4,000	4,000	3,000	0	-3,000
T&D System Wood Power Poles Testing and Replacement	0	0	0	0	0	8,877	+8,877
Install Pipeline from 200 BP-5 to 200 W Pump and Treat Facility	0	0	0	0	6,000	1,000	-5,000

	Total	Prior Years	FY 2014 Enacted	FY 2014 Current	FY 2015 Enacted	FY 2016 Request	FY 2016 vs FY 2015
L-781 100D Water Pumps (DFLAW)	0	0	0	0	0	5,000	+5,000
Total, Richland	0	0	4,000	4,000	9,000	14,877	+5,877
<u>River Protection</u>							
SY Farm Exhauster Upgrade	0	0	4,952	4,952	8,063	0	-8,063
AP Farm Primary Exhauster Replacement	0	0	0	0	0	2,390	+2,390
Tank Farms Electrical Upgrade	0	0	0	0	200	8,800	+8,600
	0	0	4,952	4,952	8,263	11,190	+2,927
<u>Savannah River</u>							
SRNL Hot Cell Window Replacement	0	0	0	0	0	8,200	+8,200
B/C Tertiary Exhaust Interlocks (DNFSB 2004-2, Gaps #8 - #12	0	0	0	0	0	250	+250
Complete Conversion of Sample Receiving Facility, B-162, 773-A (Y174)	0	0	0	0	0	710	+710
Complete Renovation of 735-A Labs D-112 and D-113	0	0	418	418	414	400	-14
Convert HB-Line Roof Temp Power to Permanent Power	0	0	0	0	374	373	-2
Establish Wi-Fi Local Area Infrastructure (SI-5b)	0	0	0	0	1,661	2,504	+844
Implement an SRNL Fissile Matl Inv Tracking Sys to for DSA Upgrade	0	0	0	0	746	0	-746
Install a Permanent Sump Transfer Pump in the 108-1K Basement	0	0	0	0	75	0	-75
Install Additional Cellular Repeaters	0	0	0	0	748	745	-3
Install Chemical Hood Behind "B" Cell Block Shielded Cells, 773-A, E-Wing	0	0	15	15	0	0	0
Install diesel generator 772-F DNFSB 2004-2 Alt Analysis Phase 4	0	0	0	0	0	702	+702
Install Ember and Cooling Reduction System (ECRS) DNFSB 2004-2 Alt Analysis Phase I	0	0	0	0	356	4,321	+3,965
Install Physical Access Equip IT Facilities (HSPD-12 Compliance)	0	0	0	0	1,122	1,118	-5
Install Wireless Lab InfoR Mgt System, LIMS, Capability, 773-A, LF1315	0	0	250	250	311	710	+399
KAC Reliable Power NMD-K-09-008	0	0	0	0	2,824	730	-2,094
K-Area Backup Power Capabilities (Diesel Generator Quick Connect)	0	0	0	0	0	224	+224
Refurbish Lab and Install Kynar GBs with Hood in Lab C135/139,	0	0	387	387	1,537	0	-1,537
Environmental Management/ Overview	17						

Total	Prior Years	FY 2014 Enacted	FY 2014 Current	FY 2015 Enacted	FY 2016 Request	FY 2016 vs FY 2015
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773-A,

Remodel 773-A, E-Wing Sample Receiving Structure	0	0	0	0	429	+429
Renovate Lab B-147/151 and Replace Hoods and Gloveboxes, 773-A	0	0	0	0	568	+568
Renovate Lab C-143/147 and Install Hoods and Gloveboxes, 773-A	0	0	0	142	568	+426
Renovate Lab C-159 /163, Install Gloveboxes, Hoods, replace Halon System 773-A	0	0	0	400	500	+100
Renovate Laboratory C-162 and Install Hoods, 773-A	0	0	950	583	0	-583
Renovate Laboratory B-138 (CA), 773-A	0	0	626	350	0	-350
Renovate/Modernize Lab C-126/130 in 773-A	0	0	0	0	426	+426
Renovation of Lab A-120 in 735-A	0	0	0	0	750	+750
Replace / Renovate Building 773-A Public Address System	0	0	0	250	0	-250
Replace 285-H Unit Substations (2.4kV and 480V)	0	0	0	0	1,945	+1,945
Replace 735-A South Header Exhaust Ductwork	0	0	599	12	0	-12
Replace A-Area Fire Water Supply	0	0	225	450	0	-450
Replace AHU-D1 for offices D170-D174, 735-A	0	0	0	375	375	0
Replace AHU-D6, Low Level Count HVAC Unit	0	0	0	0	355	+355
Replace Degrading Radio Trunking System SS-CM-001	0	0	0	1,500	0	-1,500
Replace High Flux Thermal Neutron Source (HFTNS)	0	0	735	2,000	0	-2,000
Replace HVAC system for Lab D-126, 735-A	0	0	74	0	0	0
Replace HVAC Unit for Lab D-007, 735-A	0	0	600	625	0	-625
Replace HVAC Unit Lab D-137 / D-168 Cleanroom, 735-A	0	0	662	0	0	0
Replace North Header Exhaust Duct	0	0	505	0	0	0
Replace Return Basin (281-2H) Substation & Transformer	0	0	0	0	972	+972
Replace Site Network Uninterruptible Power Supply (UPS) (All comm bldgs on site)	0	0	0	50	50	0
Replace SRNL Central Mon & Control Programmable Logic Controller LF0405	0	0	469	350	2,272	+1,922
Replace the SRNL Safety Address System (PA System) LF0610	0	0	0	950	0	-950
Reroute SRSOC Electrical Service from 752-22A to 752-71A	0	0	0	598	0	-598
SRNL Cell Block Exhaust Fans	0	0	48	48	0	-652

	Total	Prior Years	FY 2014 Enacted	FY 2014 Current	FY 2015 Enacted	FY 2016 Request	FY 2016 vs FY 2015
SRNL Process Monitoring & Control System (design only)	0	0	255	255	444	0	-444
SRNL Shielded Cell Windows	0	0	3,638	3,638	105	0	-105
Tie Central Sanitary Waste Treatment Facility Into The Site Domestic Water Loop	0	0	0	0	0	894	+894
Tie L-Area Fire Station Into The Site Domestic Water Loop	0	0	0	0	0	1,118	+1,118
Upgrade network infrastructure to improve cyber security (SI-2 Next Gen Network)	0	0	0	0	486	645	+159
WIPP Blenddown Process in K-Area	0	0	128	128	157	0	-157
Total, Savannah River	0	0	10,584	10,584	20,647	32,854	+4,007
Total, Plant Projects (GPP and IGPP) (Total Estimated (TEC) <\$10M	0	0	22,452	22,452	38,404	58,921	+20,517
Total, Capital Summary	0	0	22,452	22,452	38,404	58,921	+20,517

General Plant Projects (GPP)

Pursuant to Section 3121 of the Ike Skelton National Defense Authorization Act for FY 2011 (P.L. 111-383), notification is being provided for minor construction with a total estimated cost of more than \$5 million planned for execution or TEC design over \$1 million in FY 2015 and FY 2016.

FY 2015 General Plant Projects

Install pipeline to the Pump and Treat Facility – Hanford

Project Title	Program	TEC	Project Description	FY 2014 Current	FY 2015 Enacted	FY 2016 Request	TEC Design Estimate ^a
Installation of pipeline from the 200-BP-5 operable unit to the 200 West Pump and Treat Facility	Hanford PBS RL-0030	\$7,000,000	The specific project is within the Hanford PBS RL-0030, Soil and Water Remediation and is titled "Installation of pipeline from 200 East Area to the 200 West Pump and Treat Facility." As part of that project, Hanford plans to conduct activities associated with the design, procurement and installation of pipelines to carry contaminated groundwater from the 200 East Area of the Hanford Site to the 200 West Pump and Treat Facility. By installing the pipelines, groundwater originally destined for treatment at the 200 Effluent Treatment Facility (ETF) will be treated at the 200 West Pump and Treat Facility at a significantly lower cost per gallon, and supports the turnover of the 200 ETF to the Office of River Protection.	0	\$6,000,000	\$1,000,000	\$452,000

^a TEC design estimate is included in the TEC total amount of \$7,000,000.

**Environmental Management
Construction Summary (\$K)**

	Total	Prior Years	FY 2014 Enacted	FY 2014 Current	FY 2015 Enacted	FY 2016 Request	FY 2016 vs FY 2015
01-D-416, Waste Treatment and Immobilization Plant, Hanford WA							
<i>01-D-16A-D WTP Subprojects A-D</i>							
Total Estimate Cost (TEC)	7,063,535	5,291,562	510,000	510,000	563,000	595,000	+32,000
Other Project Costs (OPC)	0	0	0	0	0	0	0
<i>01-D-16E Pretreatment Facility</i>							
Total Estimate Cost (TEC)	5,199,465	3,216,050	180,000	180,000	104,000	95,000	-9,000
Other Project Costs (OPC)	0	0	0	0	0	0	0
Total Project Cost (TPC) 01-D-416	12,263,000	8,507,612	690,000	690,000	667,000	690,000	+23,000
05-D-405, Salt Waste Processing Facility, Aiken, SC							
Total Estimate Cost (TEC)	1,611,117	1,223,122	92,000	92,000	107,000	134,000	+27,000
Other Project Costs (OPC)	710,883	110,983	33,000	33,000	28,000	60,000	+32,000
Total Project Cost (TPC) 05-D-405	2,322,000	1,334,105	125,000	125,000	135,000	194,000	+59,000
14-D-403, Outfall 200 Mercury Treatment Facility, OR (OR-0041)							
Total Estimate Cost (TEC)	TBD	0	4,608	4,608	9,400	6,800	-2,600
Other Project Costs (OPC)	TBD	0	5,200	5,200	2,800	500	-2,300
Total Project Cost (TPC) 15-D-403	TBD	0	9,808	9,808	12,200	7,300	-4,900
KW Basin Sludge Removal Project, Hanford Washington (RL-0012)							
<i>SNF Stabilization and Disposition (RL-0012)</i>							
Total Estimate Cost (TEC)	230,355	71,220	21,946	21,946	0	0	0
Other Project Costs (OPC)	77,918	42,404	3,465	3,465	0	0	0
Subtotal, KW Basin Sludge Removal Project, Hanford Washington (RL-0012)	308,273	113,624	25,411	25,411	0	0	0

	Total	Prior Years	FY 2014 Enacted	FY 2014 Current	FY 2015 Enacted	FY 2016 Request	FY 2016 vs FY 2015
15-D-401, KW Basin Sludge Removal Project, Hanford Washington (RL-0012)							
Total Estimate Cost (TEC)	0	0	0	0	46,055	77,016	+30,961
Other Project Costs (OPC)	0	0	0	0	5,043	6,407	+1,364
Subtotal, 15-D-401, KW Basin Sludge Removal Project, Hanford Washington (RL-0012)	0	0	0	0	51,098	83,423	+32,325
Total Project Cost (TPC) 15-D-401	308,273	113,624	25,411	25,411	51,098	83,423	+32,325
Saltstone Disposal Unit #6, SR (SR-0014C)							
Savannah River Tank Waste (SR-0014C)							
Total Estimate Cost (TEC)	127,934	16,397	34,618	34,618	0	0	0
Other Project Costs (OPC)	15,266	5,748	2,178	2,178	0	0	0
Subtotal, Saltstone Disposal Unit #6, SR (SR-0014C)	143,200	22,145	36,796	36,796	0	0	0
15-D-402, Saltstone Disposal Unit #6, SR (SR-0014C)							
Total Estimate Cost (TEC)	0	0	0	0	30,000	34,642	+4,642
Other Project Costs (OPC)	0	0	0	0	2,694	2,345	-349
Subtotal, 15-D-402, Saltstone Disposal Unit #6, SR (SR-0014C)	0	0	0	0	32,694	36,987	+4,293
Total Project Cost (TPC) 15-D-402	143,200	22,145	36,796	36,796	32,694	36,987	+4,293
Sludge Build Out, OR (OR-0013B)							
Oak Ridge Solid Waste (OR-0013B)							
Total Estimate Cost (TEC)	TBD	0	0	0	0	0	0
Other Project Costs (OPC)	TBD	15,605	7,000	7,000	0	0	0
Subtotal, Sludge Build Out, OR-0013B	TBD	15,605	7,000	7,000	0	0	0
15-D-405, Sludge Build Out, OR (OR-0013B)							
Total Estimate Cost (TEC)	TBD	0	0	0	4,200	0	-4,200
Other Project Costs (OPC)	TBD	0	0	0	8,900	0	-8,900
Subtotal, 15-D-405, Sludge Build Out, OR (OR-0013B)	TBD	0	0	0	13,100	0	-13,100
Total Project Cost (TPC) 15-D-405	TBD	15,605	7,000	7,000	13,100	0	-13,100

	Total	Prior Years	FY 2014 Enacted	FY 2014 Current	FY 2015 Enacted	FY 2016 Request	FY 2016 vs FY 2015
Hexavalent Chromium Pump and Treatment Remedy Project, LANL (VL-LANL-0030)							
LANL Soil and Water (VL-LANL-0030)							
Total Estimate Cost (TEC)	89,600	0	0	0	0	0	0
Other Project Costs (OPC)	7,400	0	500	500	0	0	0
Subtotal, Hexavalent Chromium Pump and Treatment Remedy Project, LANL (VL-LANL-0030)	97,000	0	500	500	0	0	0
15-D-406, Hexavalent Chromium Pump and Treatment Remedy Project, LANL (VL-LANL-0030)							
Total Estimate Cost (TEC)	0	0	0	0	4,600	0	-4,600
Other Project Costs (OPC)	0	0	0	0	2,500	1,400	-1,100
Subtotal, 15-D-406, Hexavalent Chromium Pump and Treatment Remedy Project, LANL (VL-LANL-0030)	0	0	0	0	7,100	1,400	-5,700
Total Project Cost (TPC) 15-D-406	TBD	0	500	500	7,100	1,400	-5,700
15-U-407, On Site Waste Disposal Facility (PA-0040)							
Total Estimate Cost (TEC)	TBD	0	0	0	8,486	0	-8,486
Other Project Costs (OPC)	TBD	0	0	0	514	1,570	+1,056
Total Project Cost (TPC) 15-U-407	TBD	0	0	0	9,000	1,570	-7,430
15-U-408, On Site Waste Disposal Facility (PO-0040)							
Total Estimate Cost (TEC)	TBD	0	0	0	4,500	34,300	+29,800
Other Project Costs (OPC)	TBD	0	0	0	0	700	+700
Total Project Cost (TPC) 15-U-408	TBD	0	0	0	4,500	35,000	+30,500
15-D-409, Low Activity Waste Pretreatment System (Hanford) (ORP-0014)							
Total Estimate Cost (TEC)	TBD	0	0	0	23,000	75,000	+52,000
Other Project Costs (OPC)	TBD	0	4,500	4,500	0	5,000	+5,000
Total Project Cost (TPC) 15-D-409	TBD	0	4,500	4,500	23,000	80,000	+57,000

Total	Prior Years	FY 2014 Enacted	FY 2014 Current	FY 2015 Enacted	FY 2016 Request	FY 2016 vs FY 2015
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15-D-410, Ft. St. Vrain Security Upgrades (Idaho) (ID-0012B-N))

Total Estimate Cost (TEC)	TBD	0	0	0	TBD	0	TBD
Other Project Costs (OPC)	TBD	0	0	0	TBD	0	TBD
Total Project Cost (TPC) 15-D-410**	20,000	0	0	0	20,000	0	-20,000

**Final Distribution of \$20 million included in the FY 2015 Omnibus for Ft. St. Vrain security upgrades, including amounts for line item and operations activities to be identified in FY 2015 project data sheet to be submitted to Congress under separate cover.

15-D-411, Safety Significant Confinement Ventilation System (WIPP) (CB-0080)

Total Estimate Cost (TEC)	TBD	0	0	0	12,000	23,218	+11,218
Other Project Costs (OPC)	TBD	0	0	0	5,000	0	-5,000
Total Project Cost (TPC) 15-D-411	TBD	0	0	0	17,000	23,218	+6,218

15-D-412, Exhaust Shaft (WIPP) (CB-0080)

Total Estimate Cost (TEC)	TBD	0	0	0	4,000	7,500	+3,500
Other Project Costs (OPC)	TBD	0	1,000	1,000	1,000	0	-1,000
Total Project Cost (TPC) 15-D-412	TBD	0	1,000	1,000	5,000	7,500	+2,500

16-U-401, Solid Waste Management Unit 5 & 6 (PA-0040)

Total Estimate Cost (TEC)	TBD	0	0	0	0	1,196	+1,196
Other Project Costs (OPC)	TBD	0	0	0	960	693	-267
Total Project Cost (TPC) 16-U-401	TBD	0	0	0	960	1,889	+929

Total All Construction Projects

Total Estimate Cost (TEC)	TBD	9,818,351	843,172	843,172	920,241	1,083,672	+163,431
Other Project Costs (OPC)	TBD	174,740	56,843	56,843	57,411	79,115	+21,704
Total Project Cost (TPC) All Construction Projects	TBD	9,993,091	900,015	900,015	977,652	1,162,787	+185,135

ANCILLARY TABLES

**Environmental Management
Appropriation/Fund Type/Site (\$K)**

	FY 2014 Enacted	FY 2014 Current	FY 2015 Enacted	FY 2016 Request	FY 2016 vs FY 2015
Defense Environmental Cleanup					
<u>Operating</u>					
Carlsbad					
CB-0020 - S&S	4,977	4,977	4,455	4,860	+405
CB-0080 - Operate Facility	153,516	173,127	247,166	173,708	-73,458
CB-0081 - Characterization	33,200	25,397	35,206	22,553	-12,653
CB-0090 - Transportation	29,477	17,669	21,628	16,339	-5,289
	221,170	221,170	308,455	217,460	-90,995
Idaho					
ID-0012B-D - SNF - 2012	7,450	7,450	12,400	17,353	+4,953
ID-0013 - Solid Waste	212,980	212,980	181,800	178,334	-3,466
ID-0014B - Tank Waste	106,600	108,372	107,650	72,966	-34,684
ID-0030B - Soil and Water	56,270	54,498	75,443	89,130	+13,687
ID-0100 - Comm. & Reg.	3,700	3,700	2,910	3,000	+90
	387,000	387,000	380,203	360,783	-19,420
Oak Ridge					
OR-0011D - U233 Disposition Program	45,000	45,000	0	26,895	+26,895
OR-0013B - Solid Waste	83,220	83,220	131,930	60,500	-71,430
OR-0020 - S&S	18,800	18,800	16,382	17,228	+846
OR-0041 - D&D - Y-12	35,229	35,720	34,666	35,000	+334
OR-0042 - D&D - ORNL	38,387	37,896	38,387	40,850	+2,463
OR-0043 - D&D - ETP	100	100	102	108	+6
OR-0100 - Comm. & Reg.	4,365	4,365	4,365	4,400	+35
OR-TD-0100 - Tech Dev	4,091	3,960	0	2,800	+2,800
	229,192	229,061	225,832	187,781	-38,051
Paducah					
PA-0020 - S&S	12,434	12,434	7,297	8,216	+919
Portsmouth					
PO-0020 - S&S	12,500	12,500	8,492	8,492	+0

Richland					
RL-0011 - PFP	142,670	142,670	137,130	148,661	+11,531
RL-0012 - SNF	98,369	98,369	67,746	81,192	+13,446
RL-0013C - Solid Waste	130,126	130,126	107,651	150,691	+43,040
RL-0020 - S&S	69,078	69,078	63,668	67,601	+3,933
RL-0030 - Soil & Water	141,500	141,500	184,929	174,619	-10,310
RL-0040 - D&D Rem. Of Hanford	70,992	70,992	65,922	88,874	+22,952
RL-0041 - D&D River Corridor	337,642	337,642	311,866	108,083	-203,783
RL-0100 - Comm. & Reg.	19,701	19,701	19,701	14,701	-5,000
	1,010,078	1,010,078	958,613	834,422	-124,191
River Protection					
ORP-0014 - Tank Waste	520,216	520,216	522,000	649,000	+127,000
Savannah River					
SR-0011C - Nuclear Material	272,000	272,000	246,870	234,655	-12,215
SR-0012 - SNF	44,684	44,684	43,110	34,407	-8,703
SR-0013 - Solid Waste	60,369	60,369	45,308	51,546	+6,238
SR-0014C - Tank Waste	565,533	565,533	547,318	581,878	+34,560
SR-0020 - S&S	121,196	121,196	138,235	128,345	-9,890
SR-0030 - Soil and Water	55,438	55,438	62,688	66,044	+3,356
SR-0100 - Comm. & Reg.	11,210	11,210	11,013	11,249	+236
	1,130,430	1,130,430	1,094,542	1,108,124	+13,582
Lawrence Livermore National Laboratory					
VL-FOO-0013B-D - Solid Waste	238	238	238	238	+0
VL-LLNL-0031 - Soil and Water	1,238	1,238	1,128	1,128	+0
	1,476	1,476	1,366	1,366	+0
Los Alamos National Laboratory					
VL-FAO-0101 - AIP	4,103	4,103	2,355	3,394	+1,039
VL-LANL-0013 - Solid Waste	136,421	134,105	75,600	65,001	-10,599
VL-LANL-0030 - Soil and Water	83,615	85,949	105,545	117,230	+11,685
VL-LANL-0040-D - D&D	650	632	1,500	3,000	+1,500
	224,789	224,789	185,000	188,625	+3,625
Nevada					
VL-NV-0030 - Soil and Water	41,826	46,587	44,416	38,560	-5,856
VL-NV-0080 - Waste Disposal Fac.	16,578	11,817	16,940	20,996	+4,056
VL-NV-0100 - Comm. & Reg.	3,493	3,493	3,495	2,829	-666
	61,897	61,897	64,851	62,385	-2,466

Sandia Site Office					
VL-SN-0030 - Soil and Water	2,814	2,814	2,801	2,500	-301
Separations Process Research Unit					
VL-SPRU-0040 - D&D	23,700	23,700	0	0	+0
West Valley Demonstration Project					
OH-WV-0020 - S&S	2,015	2,015	1,471	1,891	+420
Other Sites					
CBC-0100-FN - Closure Admin Fernald	1,500	800	1,500	1,300	-200
CBC-0100-MD - Closure Admin Mound	0	285	0	0	+0
CBC-0100-RF - Closure Admin RF	3,202	3,617	3,389	3,589	+200
	4,702	4,702	4,889	4,889	+0
Mission Support					
EM-HBCU0100 - MSIPP	8,000	8,000	8,000	8,000	+0
HQ-MS-0100 - Program Support	9,979	9,979	6,979	6,979	+0
HQ-TD-0100 - TDD	18,000	17,424	14,000	14,510	+510
	35,979	35,403	28,979	29,489	+510
Program Direction					
HQ-PD-0100 - Program Direction	300,000	300,000	280,784	281,951	+1,167
D&D Fund Deposit					
HQ-DD-0100 - D&D Fund	0	0	0	471,797	+471,797
Subtotal, Operating	4,180,392	4,179,685	4,075,575	4,419,171	+343,596
<u>Line Item Construction</u>					
Carlsbad					
CB-0080 - Operate Facility	0	0	16,000	30,718	+14,718
Oak Ridge					
OR-0013B - Solid Waste	0	0	4,200	0	-4,200
OR-0041 - D&D - Y-12	4,608	4,608	9,400	6,800	-2,600
	4,608	4,608	13,600	6,800	-6,800
Richland					

RL-0012 - SNF Stabilization and Disposition	0	0	46,055	77,016	+30,961
River Protection					
ORP-0014 - Tank Waste	0	0	23,000	75,000	+52,000
ORP-0060 - Waste Treatment Plant	690,000	690,000	667,000	690,000	+23,000
	690,000	690,000	690,000	765,000	+75,000
Savannah River					
SR-0014C - Tank Waste	125,000	125,000	165,000	228,642	+63,642
Los Alamos National Laboratory					
VL-LANL-0030 - Soil and Water	0	0	4,600	0	-4,600
Subtotal, Line Item Construction	819,608	819,608	935,255	1,108,176	+172,921
Total, Defense Environmental Cleanup	5,000,000	4,999,293	5,010,830	5,527,347	+516,517

Defense EM Funded UE D&D Fund Contribution

Operating

D&D Fund Deposit

HQ-DD-0100 - D&D Fund	0	0	463,000	0	-463,000
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Total, Defense EM Funded UE D&D Fund Contribution

0	0	463,000	0	-463,000
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Non-Defense Environmental Cleanup

Energy Technology Engineering Center

CBC-ETEC-0040 - D&D	9,404	9,368	8,959	10,459	+1,500
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Idaho

ID-0012B-N - SNF	4,993	6,593	7,900	5,919	-1,981
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Moab

CBC-MOAB-0031 - Soil and Water	38,000	36,477	35,663	37,629	+1,966
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Oak Ridge

OR-0104 - Comm and Reg	0	0	2,119	0	-2,119
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Other Sites

CBC-LBNL-0040 - D&D	17,786	17,786	0	0	+0
CBC-ND-0100 - Closure Admin ND Sites	0	0	8,408	0	-8,408
SEFOR	1,000	1,000	0	0	+0

	18,786	18,786	8,408	0	-8,408
Paducah					
PA-0011 - NM S&D	1,369	1,369	1,369	1,369	+0
PA-0011X - DUF6	45,501	45,492	51,517	51,517	+0
	46,870	46,861	52,886	52,886	+0
Portsmouth					
PO-0011X - DUF6	49,352	45,472	51,517	51,517	+0
PO-0041 - NF D&D _PGD Exp Process	0	3,889	0	0	+0
	49,352	49,361	51,517	51,517	+0
Richland					
RL-0042 - FFTF	2,542	2,542	2,562	2,562	+0
West Valley Demonstration Project					
OH-WV-0013 - Solid Waste	15,500	8,825	7,938	7,938	+0
OH-WV-0040 - D&D	48,500	55,175	51,048	51,275	+227
	64,000	64,000	58,986	59,213	+227
Subtotal, Operating	233,947	233,988	229,000	220,185	-8,815
<u>Line Item Construction</u>					
Idaho					
ID-0012B-N - SNF	0	0	17,000	0	-17,000
Subtotal, Line Item Construction	0	0	17,000	0	-17,000
Total, Non-Defense Environmental Cleanup	233,947	233,988	246,000	220,185	-25,815
Uranium Enrichment Decontamination and Decommissioning Fund					
<u>Operating</u>					
Oak Ridge					
OR-0040 - D&D - ETPP	179,741	180,244	167,898	154,235	-13,663
OR-0102 - Liab. & Admin.	16,000	15,497	21,693	16,856	-4,837
	195,741	195,741	189,591	171,091	-18,500
Paducah					
PA-0040 - D&D	262,057	260,495	198,729	167,456	-31,273
PA-0102 - Liab. & Admin.	1,438	3,000	650	650	+0
PA-0103 - Comm. & Reg.	1,725	1,725	1,725	1,725	+0
	265,220	265,220	201,104	169,831	-31,273
Portsmouth					

PO-0040 - D&D	135,818	135,428	209,524	131,117	-78,407
PO-0103 - Liab. & Admin.	775	775	775	775	+0
PO-0104 - Comm. & Reg.	1,020	1,410	1,020	1,020	+0
	137,613	137,613	211,319	132,912	-78,407
Mission Support					
HQ-UR-0100 - Uranium Thorium Reimb.	0	0	10,000	32,959	+22,959
Subtotal, Operating	598,574	598,574	612,014	506,793	-105,221
<u>Line Item Construction</u>					
Paducah					
PA-0040 - D&D	0	0	8,486	1,196	-7,290
Portsmouth					
PO-0040 - D&D	0	0	4,500	34,300	+29,800
Subtotal, Line Item Construction	0	0	12,986	35,496	+22,510
Total, UE D&D Fund	598,574	598,574	625,000	542,289	-82,711
Subtotal, Environmental Management	5,832,521	5,831,855	6,344,830	6,289,821	-55,009
D&D Fund Offset	0	0	-463,000	-471,797	-8,797
Prior Year Unobligated Rescission - Defense	0	0	-20,813	0	+20,813
Use of Prior Year (Non-Defense)	-2,206	-2,206	0	0	+0
Total, Environmental Cleanup	5,830,315	5,829,649	5,861,017	5,818,024	-42,993

Summary					
Defense					
Operating	4,180,392	4,179,685	4,075,575	4,419,171	+343,596
Line Item Construction	819,608	819,608	935,255	1,108,176	+172,921
Subtotal, Defense	5,000,000	4,999,293	5,010,830	5,527,347	+516,517
Defense EM Funded UE D&D Fund Contribution					
Operating	0	0	463,000	0	-463,000
Line Item Construction	0	0	0	0	+0
Subtotal, Defense	0	0	463,000	0	-463,000
Non-Defense					
Operating	233,947	233,988	229,000	220,185	-8,815
Line Item Construction	0	0	17,000	0	-17,000
Subtotal, Non-Defense	233,947	233,988	246,000	220,185	-25,815

UED&D					
Operating	598,574	598,574	612,014	506,793	-105,221
Line Item Construction	0	0	12,986	35,496	+22,510
Subtotal, UED&D	598,574	598,574	625,000	542,289	-82,711
Subtotal, Environmental Management					
Offsets	-2,206	-2,206	-483,813	-471,797	+12,016
Total, Environmental Management	5,830,315	5,829,649	5,861,017	5,818,024	-42,993

Total Operating	5,012,913	5,012,247	5,379,589	5,146,149	-233,440
Total Line Item Construction	819,608	819,608	965,241	1,143,672	+178,431
Offsets	-2,206	-2,206	-483,813	-471,797	+12,016
Total, Environmental Management	5,830,315	5,829,649	5,861,017	5,818,024	-42,993

Environmental Management Federal Staffing

	FY 2014 Enacted	FY 2014 Current	FY 2015 Enacted	FY 2016 Request	FY 2016 vs FY 2015
Carlsbad	50	50	51	74	+23
Idaho	40	40	40	45	+5
Oak Ridge	73	73	72	80	+8
Portsmouth/Paducah Project Office	51	51	57	63	+6
Richland	247	247	251	255	+4
River Protection	138	138	158	162	+4
Savannah River	268	268	284	283	-1
Small Sites	29	29	28	31	+3
Nevada Site Office	18	18	19	18	-1
Los Alamos Site Office	21	21	22	21	-1
Subtotal, Field, Full-Time Equivalents	935	935	982	1,032	+50
Headquarters Operations	296	296	308	295	-13
Consolidated Business Center	145	145	210	163	-47
Total, Field, Full-Time Equivalents	1,376	1,376	1,500	1,490	-10

^aCorporate Performance Measures – EM Totals

	Cumulative FY 2014 Actual	Cumulative FY 2015 Target	Cumulative FY 2016 Target	Life-cycle Estimate
Geographic Sites Eliminated (number of sites)	90	91	91	107
Plutonium Metal or Oxide packaged for long-term storage (Number of Containers)	5,089	5,089	5,089	5,089
Enriched Uranium packaged for disposition (Number of Containers)	8,016	8,016	8,016	8,603
Plutonium or Uranium Residues packaged for disposition (Kilograms of Bulk)	107,828	107,828	107,828	107,828
Depleted and Other Uranium packaged for disposition (Metric Tons)	68,624	93,624	125,124	737,408
Liquid Waste in Inventory eliminated (Thousands of Gallons)	6,592	7,592	9,492	90,814
Liquid Waste Tanks closed (Number of Tanks)	13	15	15	239
High-Level Waste packaged for final disposition (Number of Containers)	4,154	4,405	4,680	24,054
Spent Nuclear Fuel packaged for final disposition (Metric Tons of Heavy Metal)	2,130	2,130	2,130	2,451
Transuranic Waste Dispositioned (Cubic meters) - CH	98,856	[Note]	[Note]	141,237
Transuranic Waste Dispositioned (Cubic meters) - RH	323	[Note]	[Note]	7,289
Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	1,292,571	1,305,096	1,314,398	1,573,667
Material Access Areas eliminated (Number of Material Access Areas)	30	30	34	35
Nuclear Facility Completions (Number of Facilities)	146	153	164	487
Radioactive Facility Completions (Number of Facilities)	561	563	593	960
Industrial Facility Completions (Number of Facilities)	2,095	2,107	2,184	4,107
Remediation Complete (Number of Release Sites)	7,945	8,201	9,312	10,992

^a Performance measures are currently being updated.

Environmental Management/

Overview

^bCorporate Performance Measures – EM Totals

Cumulative FY 2014 Actual	Cumulative FY 2015 Target	Cumulative FY 2016 Target	Life-cycle Estimate
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	Cumulative FY 2014 Actual	Cumulative FY 2015 Target	Cumulative FY 2016 Target	Life-cycle Estimate
All Other Sites				
California Site Support (Non-Defense)				
Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	272	272	272	272
Remediation Complete (Number of Release Sites)	3	3	3	3
Ames Laboratory				
Geographic Sites Eliminated (number of sites)	1	1	1	1
Argonne National Laboratory-East				
Geographic Sites Eliminated (number of sites)	1	1	1	1
Radioactive Facility Completions (Number of Facilities)	80	80	80	80
Remediation Complete (Number of Release Sites)	443	443	443	443
Transuranic Waste Dispositioned (Cubic meters) - CH	22	[Note]	[Note]	22
Transuranic Waste Dispositioned (Cubic meters) - RH	21	[Note]	[Note]	21
Brookhaven National Laboratory				
Geographic Sites Eliminated (number of sites)	0	0	0	1
Nuclear Facility Completions (Number of Facilities)	1	1	1	1
Radioactive Facility Completions (Number of Facilities)	13	13	13	13
Remediation Complete (Number of Release Sites)	77	77	77	77
Chicago Operations Office				
Geographic Sites Eliminated (number of sites)	3	3	3	3
Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	537	537	537	537
Remediation Complete (Number of Release Sites)	30	30	30	30
Energy Technology Engineering Center				
Geographic Sites Eliminated (number of sites)	0	0	0	1
Industrial Facility Completions (Number of Facilities)	29	29	30	32
Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	1,895	1,895	1,895	1,895

^b Performance measures are currently being updated.

[Note] Due to the suspension of WIPP operations and the ongoing recovery efforts, targets for the corporate performance metric, "Transuranic Waste Dispositioned," cannot be provided at this time. Efforts continue at TRU sites to process and characterize transuranic waste activities. These activities will result in low and mixed low level waste that will be disposed; however, transuranic waste will remain at these sites in storage pending the resumption of WIPP operations. Updated performance metric targets will be reported in the future.

Cumulative FY 2014 Actual	Cumulative FY 2015 Target	Cumulative FY 2016 Target	Life-cycle Estimate
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Radioactive Facility Completions (Number of Facilities)	5	5	5	7
Remediation Complete (Number of Release Sites)	4	4	4	5
Fermi National Accelerator Laboratory				
Geographic Sites Eliminated (number of sites)	1	1	1	1
General Atomics				
Geographic Sites Eliminated (number of sites)	1	1	1	1
Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	1,716	1,716	1,716	1,716
Remediation Complete (Number of Release Sites)	2	2	2	2
Spent Nuclear Fuel packaged for final disposition (Metric Tons of Heavy Metal)	1	1	1	1
General Electric				
Geographic Sites Eliminated (number of sites)	1	1	1	1
Geothermal Test Facility				
Geographic Sites Eliminated (number of sites)	1	1	1	1
Grand Junction				
Geographic Sites Eliminated (number of sites)	2	2	2	2
Inhalation Toxicology Laboratory				
Geographic Sites Eliminated (number of sites)	1	1	1	1
Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	359	359	359	359
Remediation Complete (Number of Release Sites)	9	9	9	9
Laboratory for Energy-Related Health Research				
Geographic Sites Eliminated (number of sites)	1	1	1	1
Industrial Facility Completions (Number of Facilities)	2	2	2	2
Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	944	944	944	944
Remediation Complete (Number of Release Sites)	16	16	16	16
Lawrence Berkeley National Laboratory				
Geographic Sites Eliminated (number of sites)	1	1	1	1
Remediation Complete (Number of Release Sites)	194	194	194	194
Moab				

[Note] Due to the suspension of WIPP operations and the ongoing recovery efforts, targets for the corporate performance metric, "Transuranic Waste Dispositioned," cannot be provided at this time. Efforts continue at TRU sites to process and characterize transuranic waste activities. These activities will result in low and mixed low level waste that will be disposed; however, transuranic waste will remain at these sites in storage pending the resumption of WIPP operations. Updated performance metric targets will be reported in the future.

Cumulative FY 2014 Actual	Cumulative FY 2015 Target	Cumulative FY 2016 Target	Life-cycle Estimate
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Geographic Sites Eliminated (number of sites)	0	0	0	1
Offsites				
Geographic Sites Eliminated (number of sites)	2	2	2	2
Princeton Plasma Physics Laboratory				
Geographic Sites Eliminated (number of sites)	1	1	1	1
Stanford Linear Accelerator Center				
Geographic Sites Eliminated (number of sites)	1	1	1	1
Remediation Complete (Number of Release Sites)	57	57	57	57
Oak Ridge				
Oak Ridge				
Geographic Sites Eliminated (number of sites)	2	2	2	2
Industrial Facility Completions (Number of Facilities)	425	425	491	735
Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	199,855	200,132	200,335	200,335
Nuclear Facility Completions (Number of Facilities)	9	11	12	27
Radioactive Facility Completions (Number of Facilities)	58	59	73	110
Remediation Complete (Number of Release Sites)	450	458	469	681
Transuranic Waste Dispositioned (Cubic meters) - CH	1,160	[Note]	[Note]	1,502
Transuranic Waste Dispositioned (Cubic meters) - RH	290	[Note]	[Note]	600
FUSRAP				
Geographic Sites Eliminated (number of sites)	25	25	25	25
Oak Ridge Reservation				
Geographic Sites Eliminated (number of sites)	0	0	0	1
Weldon Spring Site				
Geographic Sites Eliminated (number of sites)	1	1	1	1
Headquarters				
Headquarters				
Geographic Sites Eliminated (number of sites)	24	24	24	24
NNSA Sites				
Nevada Offsites				
Geographic Sites Eliminated (number of sites)	1	1	1	1

[Note] Due to the suspension of WIPP operations and the ongoing recovery efforts, targets for the corporate performance metric, "Transuranic Waste Dispositioned," cannot be provided at this time. Efforts continue at TRU sites to process and characterize transuranic waste activities. These activities will result in low and mixed low level waste that will be disposed; however, transuranic waste will remain at these sites in storage pending the resumption of WIPP operations. Updated performance metric targets will be reported in the future.

Cumulative FY 2014 Actual	Cumulative FY 2015 Target	Cumulative FY 2016 Target	Life-cycle Estimate
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Nevada National Security Site				
Geographic Sites Eliminated (number of sites)	0	0	0	1
Industrial Facility Completions (Number of Facilities)	1	1	1	1
Radioactive Facility Completions (Number of Facilities)	10	10	10	11
Remediation Complete (Number of Release Sites)	1,184	1,225	1,291	2,112
Transuranic Waste Dispositioned (Cubic meters) - CH	1,246	[Note]	[Note]	1,246
Kansas City Plant				
Geographic Sites Eliminated (number of sites)	1	1	1	1
Remediation Complete (Number of Release Sites)	43	43	43	43
Lawrence Livermore National Laboratory				
Geographic Sites Eliminated (number of sites)	1	1	1	2
Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	5,312	5,312	5,312	5,312
Remediation Complete (Number of Release Sites)	194	194	196	198
Transuranic Waste Dispositioned (Cubic meters) - CH	125	[Note]	[Note]	125
Los Alamos National Laboratory				
Geographic Sites Eliminated (number of sites)	0	0	0	1
Industrial Facility Completions (Number of Facilities)	6	6	6	6
Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	9,447	9,802	9,802	9,802
Nuclear Facility Completions (Number of Facilities)	1	1	1	1
Radioactive Facility Completions (Number of Facilities)	19	19	19	34
Remediation Complete (Number of Release Sites)	1,658	1,706	1,920	1,987
Transuranic Waste Dispositioned (Cubic meters) - CH	7,094	[Note]	[Note]	9,489
Transuranic Waste Dispositioned (Cubic meters) - RH	16	[Note]	[Note]	94
New Mexico Site Support				
Geographic Sites Eliminated (number of sites)	5	5	5	5
Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	1,319	1,319	1,319	1,319
Remediation Complete (Number of Release Sites)	155	155	155	155
NNSA Service Center				
Geographic Sites Eliminated (number of sites)	1	1	1	2
Nuclear Facility Completions (Number of Facilities)	6	0	1	2
Remediation Complete (Number of Release Sites)	7	6	7	9

[Note] Due to the suspension of WIPP operations and the ongoing recovery efforts, targets for the corporate performance metric, "Transuranic Waste Dispositioned," cannot be provided at this time. Efforts continue at TRU sites to process and characterize transuranic waste activities. These activities will result in low and mixed low level waste that will be disposed; however, transuranic waste will remain at these sites in storage pending the resumption of WIPP operations. Updated performance metric targets will be reported in the future.

Cumulative FY 2014 Actual	Cumulative FY 2015 Target	Cumulative FY 2016 Target	Life-cycle Estimate
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Pantex Plant			
Geographic Sites Eliminated (number of sites)	1	1	1
Industrial Facility Completions (Number of Facilities)	4	4	4
Remediation Complete (Number of Release Sites)	237	237	237
Sandia National Laboratory			
Geographic Sites Eliminated (number of sites)	1	1	2
Radioactive Facility Completions (Number of Facilities)	1	1	1
Remediation Complete (Number of Release Sites)	265	265	265
Idaho			
Pinellas Plant - Idaho			
Geographic Sites Eliminated (number of sites)	1	1	1
Monticello Remedial Action Project - Idaho			
Geographic Sites Eliminated (number of sites)	1	1	1
Argonne National Laboratory - West			
Geographic Sites Eliminated (number of sites)	1	1	1
Remediation Complete (Number of Release Sites)	37	37	37
Idaho National Laboratory			
Geographic Sites Eliminated (number of sites)	0	0	1
Enriched Uranium packaged for disposition (Number of Containers)	1,586	1,586	1,586
High-Level Waste packaged for final disposition (Number of Containers)	0	0	6,660
Industrial Facility Completions (Number of Facilities)	177	177	254
Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	80,111	81,578	81,578
Liquid Waste in Inventory eliminated (Thousands of Gallons)	410	0	900
Liquid Waste Tanks closed (Number of Tanks)	7	7	11
Material Access Areas eliminated (Number of Material Access Areas)	1	1	1
Nuclear Facility Completions (Number of Facilities)	55	55	88
Radioactive Facility Completions (Number of Facilities)	66	66	76
Remediation Complete (Number of Release Sites)	288	288	288
Spent Nuclear Fuel packaged for final disposition (Metric Tons of Heavy Metal)	0	0	285

[Note] Due to the suspension of WIPP operations and the ongoing recovery efforts, targets for the corporate performance metric, "Transuranic Waste Dispositioned," cannot be provided at this time. Efforts continue at TRU sites to process and characterize transuranic waste activities. These activities will result in low and mixed low level waste that will be disposed; however, transuranic waste will remain at these sites in storage pending the resumption of WIPP operations. Updated performance metric targets will be reported in the future.

Cumulative FY 2014 Actual	Cumulative FY 2015 Target	Cumulative FY 2016 Target	Life-cycle Estimate
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Transuranic Waste Dispositioned (Cubic meters) - CH	60,194	[Note]	[Note]	72,080
Transuranic Waste Dispositioned (Cubic meters) - RH	125	[Note]	[Note]	125
Idaho Operations Office				
Remediation Complete (Number of Release Sites)	233	233	233	233
Maxey Flats				
Geographic Sites Eliminated (number of sites)	1	1	1	1
Closure Sites				
Ashtabula				
Geographic Sites Eliminated (number of sites)	1	1	1	1
Industrial Facility Completions (Number of Facilities)	7	7	7	7
Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	3,707	3,707	3,707	3,707
Radioactive Facility Completions (Number of Facilities)	28	28	28	28
Remediation Complete (Number of Release Sites)	3	3	3	3
Columbus				
Geographic Sites Eliminated (number of sites)	2	2	2	2
Nuclear Facility Completions (Number of Facilities)	1	1	1	1
Radioactive Facility Completions (Number of Facilities)	14	14	14	14
Remediation Complete (Number of Release Sites)	2	2	2	2
Fernald				
Geographic Sites Eliminated (number of sites)	1	1	1	1
Industrial Facility Completions (Number of Facilities)	1	1	1	1
Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	7,085	7,085	7,085	7,085
Radioactive Facility Completions (Number of Facilities)	29	29	29	29
Remediation Complete (Number of Release Sites)	6	6	6	6
Miamisburg				
Geographic Sites Eliminated (number of sites)	1	1	1	1
Depleted and Other Uranium packaged for disposition (Metric Tons)	0	0	0	0
Industrial Facility Completions (Number of Facilities)	116	116	116	116
Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	3,947	3,947	3,947	3,947

[Note] Due to the suspension of WIPP operations and the ongoing recovery efforts, targets for the corporate performance metric, "Transuranic Waste Dispositioned," cannot be provided at this time. Efforts continue at TRU sites to process and characterize transuranic waste activities. These activities will result in low and mixed low level waste that will be disposed; however, transuranic waste will remain at these sites in storage pending the resumption of WIPP operations. Updated performance metric targets will be reported in the future.

Cumulative FY 2014 Actual	Cumulative FY 2015 Target	Cumulative FY 2016 Target	Life-cycle Estimate
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Nuclear Facility Completions (Number of Facilities)	8	8	8	8
Radioactive Facility Completions (Number of Facilities)	11	11	11	11
Remediation Complete (Number of Release Sites)	178	178	178	178
<u>Rocky Flats Environmental Technology Site</u>				
Geographic Sites Eliminated (number of sites)	1	1	1	1
Industrial Facility Completions (Number of Facilities)	317	317	317	317
Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	602,188	602,188	602,188	602,188
Material Access Areas eliminated (Number of Material Access Areas)	7	7	7	7
Nuclear Facility Completions (Number of Facilities)	6	6	6	6
Plutonium Metal or Oxide packaged for long-term storage (Number of Containers)	1,895	1,895	1,895	1,895
Plutonium or Uranium Residues packaged for disposition (Kilograms of Bulk)	103,901	103,901	103,901	103,901
Radioactive Facility Completions (Number of Facilities)	54	54	54	54
Remediation Complete (Number of Release Sites)	360	360	360	360
Transuranic Waste Dispositioned (Cubic meters) - CH	15,036	[Note]	[Note]	15,036
<u>West Valley Demonstration Project</u>				
West Valley Demonstration Project				
Geographic Sites Eliminated (number of sites)	0	0	0	1
High-Level Waste packaged for final disposition (Number of Containers)	275	275	275	275
Industrial Facility Completions (Number of Facilities)	15	17	17	43
Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	31,838	31,923	32,072	34,591
Liquid Waste in Inventory eliminated (Thousands of Gallons)	814	814	814	814
Nuclear Facility Completions (Number of Facilities)	3	3	4	25
Radioactive Facility Completions (Number of Facilities)	6	6	12	30
Transuranic Waste Dispositioned (Cubic meters) - CH	0	[Note]	[Note]	596
Transuranic Waste Dispositioned (Cubic meters) - RH	0	[Note]	[Note]	1,125
<u>Portsmouth</u>				
Portsmouth Gaseous Diffusion Plant				
Geographic Sites Eliminated (number of sites)	0	0	0	1
Depleted and Other Uranium packaged for	19,625	30,584	44,084	254,317

[Note] Due to the suspension of WIPP operations and the ongoing recovery efforts, targets for the corporate performance metric, "Transuranic Waste Dispositioned," cannot be provided at this time. Efforts continue at TRU sites to process and characterize transuranic waste activities. These activities will result in low and mixed low level waste that will be disposed; however, transuranic waste will remain at these sites in storage pending the resumption of WIPP operations. Updated performance metric targets will be reported in the future.

Cumulative FY 2014 Actual	Cumulative FY 2015 Target	Cumulative FY 2016 Target	Life-cycle Estimate
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disposition (Metric Tons)				
Industrial Facility Completions (Number of Facilities)	42	42	42	257
Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	78,001	73,541	73,541	73,541
Nuclear Facility Completions (Number of Facilities)	0	0	0	12
Radioactive Facility Completions (Number of Facilities)	8	8	8	11
Remediation Complete (Number of Release Sites)	150	150	150	150
<u>Paducah</u>				
Paducah Gaseous Diffusion Plant				
Geographic Sites Eliminated (number of sites)	0	0	0	1
Depleted and Other Uranium packaged for disposition (Metric Tons)	22,824	36,759	54,759	456,810
Enriched Uranium packaged for disposition (Number of Containers)	0	0	0	182
Industrial Facility Completions (Number of Facilities)	19	20	20	21
Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	22,786	22,896	23,001	23,315
Nuclear Facility Completions (Number of Facilities)	0	5	5	5
Radioactive Facility Completions (Number of Facilities)	7	7	7	11
Remediation Complete (Number of Release Sites)	109	131	134	232
<u>Savannah River</u>				
Savannah River Site				
Geographic Sites Eliminated (number of sites)	0	0	0	1
Depleted and Other Uranium packaged for disposition (Metric Tons)	23,181	23,181	23,181	23,181
Enriched Uranium packaged for disposition (Number of Containers)	3,472	3,472	3,472	3,877
High-Level Waste packaged for final disposition (Number of Containers)	3,878	4,130	4,405	7,452
Industrial Facility Completions (Number of Facilities)	253	257	257	847
Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	156,944	161,485	170,331	270,462
Liquid Waste in Inventory eliminated (Thousands of Gallons)	6,119	6,778	7,778	33,100
Liquid Waste Tanks closed (Number of Tanks)	6	8	8	51
Material Access Areas eliminated (Number of Material Access Areas)	2	2	2	3
Nuclear Facility Completions (Number of Facilities)	11	11	11	201

[Note] Due to the suspension of WIPP operations and the ongoing recovery efforts, targets for the corporate performance metric, "Transuranic Waste Dispositioned," cannot be provided at this time. Efforts continue at TRU sites to process and characterize transuranic waste activities. These activities will result in low and mixed low level waste that will be disposed; however, transuranic waste will remain at these sites in storage pending the resumption of WIPP operations. Updated performance metric targets will be reported in the future.

Cumulative FY 2014 Actual	Cumulative FY 2015 Target	Cumulative FY 2016 Target	Life-cycle Estimate
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Plutonium Metal or Oxide packaged for long-term storage (Number of Containers)	919	919	919	919
Plutonium or Uranium Residues packaged for disposition (Kilograms of Bulk)	490	490	490	490
Radioactive Facility Completions (Number of Facilities)	21	21	21	54
Remediation Complete (Number of Release Sites)	402	402	402	516
Spent Nuclear Fuel packaged for final disposition (Metric Tons of Heavy Metal)	3	5	5	41
Transuranic Waste Dispositioned (Cubic meters) - CH	11,473	[Note]	[Note]	15,007
Transuranic Waste Dispositioned (Cubic meters) - RH	26	[Note]	[Note]	55
<u>Carlsbad</u>				
Waste Isolation Pilot Plant				
Geographic Sites Eliminated (number of sites)	0	0	0	1
<u>Richland</u>				
Hanford Site				
Geographic Sites Eliminated (number of sites)	0	0	0	1
Depleted and Other Uranium packaged for disposition (Metric Tons)	3,100	3,100	3,100	3,100
Enriched Uranium packaged for disposition (Number of Containers)	2,958	2,958	2,958	2,958
Industrial Facility Completions (Number of Facilities)	656	686	696	1,336
Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	52,336	52,336	52,336	52,336
Material Access Areas eliminated (Number of Material Access Areas)	20	20	24	24
Nuclear Facility Completions (Number of Facilities)	37	51	58	92
Plutonium Metal or Oxide packaged for long-term storage (Number of Containers)	2,275	2,275	2,275	2,275
Plutonium or Uranium Residues packaged for disposition (Kilograms of Bulk)	3,437	3,437	3,437	3,437
Radioactive Facility Completions (Number of Facilities)	131	132	142	272
Remediation Complete (Number of Release Sites)	1,234	1,282	2,096	2,186
Spent Nuclear Fuel packaged for final disposition (Metric Tons of Heavy Metal)	2,124	2,124	2,124	2,124
Transuranic Waste Dispositioned (Cubic meters) - CH	5,763	[Note]	[Note]	24,580
Transuranic Waste Dispositioned (Cubic meters) - RH	0	[Note]	[Note]	858
<u>River Protection</u>				

[Note] Due to the suspension of WIPP operations and the ongoing recovery efforts, targets for the corporate performance metric, "Transuranic Waste Dispositioned," cannot be provided at this time. Efforts continue at TRU sites to process and characterize transuranic waste activities. These activities will result in low and mixed low level waste that will be disposed; however, transuranic waste will remain at these sites in storage pending the resumption of WIPP operations. Updated performance metric targets will be reported in the future.

Cumulative FY 2014 Actual	Cumulative FY 2015 Target	Cumulative FY 2016 Target	Life-cycle Estimate
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River Protection				
High-Level Waste packaged for final disposition (Number of Containers)	0	0	0	9,667
Industrial Facility Completions (Number of Facilities)	0	0	0	128
Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	38,256	42,122	42,122	198,426
Liquid Waste in Inventory eliminated (Thousands of Gallons)	0	0	0	56,000
Liquid Waste Tanks closed (Number of Tanks)	0	0	0	177
Nuclear Facility Completions (Number of Facilities)	0	0	0	18
Radioactive Facility Completions (Number of Facilities)	0	0	0	114
Remediation Complete (Number of Release Sites)	5	5	5	278
Transuranic Waste Dispositioned (Cubic meters) - CH	0	[Note]	[Note]	1,555
Transuranic Waste Dispositioned (Cubic meters) - RH	0	[Note]	[Note]	4,410

[Note] Due to the suspension of WIPP operations and the ongoing recovery efforts, targets for the corporate performance metric, "Transuranic Waste Dispositioned," cannot be provided at this time. Efforts continue at TRU sites to process and characterize transuranic waste activities. These activities will result in low and mixed low level waste that will be disposed; however, transuranic waste will remain at these sites in storage pending the resumption of WIPP operations. Updated performance metric targets will be reported in the future.

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

Office / Installation	Project Number	Project Name / Measure	Complete Through 2014	Targeted Completion Through 2015	Targeted Completion Through 2016	Balance Remaining	Life-Cycle Quantity
All Other Sites							
Argonne National Laboratory-East	CH-ANLE-0040.NEW	Transuranic Waste Dispositioned (Cubic meters) - CH	22[Note]	[Note]			22
		Transuranic Waste Dispositioned (Cubic meters) - RH	21[Note]	[Note]			21
Brookhaven National Laboratory	BRNL-0041.NEW	Radioactive Facility Completions (Number of Facilities)	2	2	2	0	2
Brookhaven National Laboratory	BRNL-0030	Radioactive Facility Completions (Number of Facilities)	1	1	1	0	1
		Radioactive Facility Completions (Number of Facilities)	3	3	3	0	3

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

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

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

[Note] Due to the suspension of WIPP operations and the ongoing recovery efforts, targets for the corporate performance metric, "Transuranic Waste Dispositioned," cannot be provided at this time. Efforts continue at TRU sites to process and characterize transuranic waste activities. These activities will result in low and mixed low level waste that will be disposed; however, transuranic waste will remain at these sites in storage pending the resumption of WIPP operations. Updated performance metric targets will be reported in the future.

Office / Installation	Project Number	Project Name / Measure	Complete Through 2014	Targeted Completion Through 2015	Targeted Completion Through 2016	Balance Remaining	Life-Cycle Quantity
Brookhaven National Laboratory	BRNL-0040	Remediation Complete (Number of Release Sites)	75	75	75	0	75
		Nuclear Facility Completions (Number of Facilities)	1	1	1	0	1
		Radioactive Facility Completions (Number of Facilities)	7	7	7	0	7
Brookhaven National Laboratory	BRNL-0041	Remediation Complete (Number of Release Sites)	1	1	1	0	1
		Radioactive Facility Completions (Number of Facilities)	2	2	2	0	2
California Site Support (Non-Defense)	CBC-CA-0013B-N	Remediation Complete (Number of Release Sites)	1	1	1	0	1
Energy Technology Engineering Center	CBC-ETEC-0040	Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	83	83	83	0	83
		Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	1,075	1,075	1,075	0	1,075
		Radioactive Facility Completions (Number of Facilities)	4	4	4	+2	6
		Industrial Facility Completions (Number	24	24	25	+2	27

[Note] Due to the suspension of WIPP operations and the ongoing recovery efforts, targets for the corporate performance metric, "Transuranic Waste Dispositioned," cannot be provided at this time. Efforts continue at TRU sites to process and characterize transuranic waste activities. These activities will result in low and mixed low level waste that will be disposed; however, transuranic waste will remain at these sites in storage pending the resumption of WIPP operations. Updated performance metric targets will be reported in the future.

Office / Installation	Project Number	Project Name / Measure	Complete Through 2014	Targeted Completion Through 2015	Targeted Completion Through 2016	Balance Remaining	Life-Cycle Quantity
Inhalation Toxicology Laboratory	CBC-ITL-0030	of Facilities) Remediation Complete (Number of Release Sites)	4	4	4	+1	5
Lawrence Berkeley National Laboratory	CBC-LBNL-0030	Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed (Cubic meters) Remediation Complete (Number of Release Sites)	359	359	359	0	359
Stanford Linear Accelerator Center	CBC-SLAC-0030	Remediation Complete (Number of Release Sites)	181	181	181	0	181
Argonne National Laboratory-East	CH-ANLE-0030	Remediation Complete (Number of Release Sites)	54	56	56	0	56
Argonne National Laboratory-East	CH-ANLE-0040	Remediation Complete (Number of Release Sites)	443	443	443	0	443
Chicago Operations Office	CH-OPS-0900	Radioactive Facility Completions (Number of Facilities)	78	78	78	0	78
		Legacy and Newly Generated Low-Level	537	537	537	0	537

[Note] Due to the suspension of WIPP operations and the ongoing recovery efforts, targets for the corporate performance metric, "Transuranic Waste Dispositioned," cannot be provided at this time. Efforts continue at TRU sites to process and characterize transuranic waste activities. These activities will result in low and mixed low level waste that will be disposed; however, transuranic waste will remain at these sites in storage pending the resumption of WIPP operations. Updated performance metric targets will be reported in the future.

Office / Installation	Project Number	Project Name / Measure	Complete Through 2014	Targeted Completion Through 2015	Targeted Completion Through 2016	Balance Remaining	Life-Cycle Quantity
		and Mixed Low-Level Waste disposed (Cubic meters)					
Laboratory for Energy-Related Health Research	LEHR-0040	Remediation Complete (Number of Release Sites)	30	30	30	0	30
		Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	944	944	944	0	944
		Industrial Facility Completions (Number of Facilities)	1	1	1	0	1
Energy Technology Engineering Center	VL-ETEC-0040	Remediation Complete (Number of Release Sites)	16	16	16	0	16
		Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	820	820	820	0	820
		Radioactive Facility Completions (Number of Facilities)	1	1	1	0	1
		Industrial Facility Completions (Number of Facilities)	5	5	5	0	5
California Site Support (Non-Defense)	VL-FOO-0900-N	Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	189	189	189	0	189
		Remediation Complete (Number of Release Sites)	3	3	3	0	3

[Note] Due to the suspension of WIPP operations and the ongoing recovery efforts, targets for the corporate performance metric, "Transuranic Waste Dispositioned," cannot be provided at this time. Efforts continue at TRU sites to process and characterize transuranic waste activities. These activities will result in low and mixed low level waste that will be disposed; however, transuranic waste will remain at these sites in storage pending the resumption of WIPP operations. Updated performance metric targets will be reported in the future.

Office / Installation	Project Number	Project Name / Measure	Complete Through 2014	Targeted Completion Through 2015	Targeted Completion Through 2016	Balance Remaining	Life-Cycle Quantity
General Atomics	VL-GA-0012	Spent Nuclear Fuel packaged for final disposition (Metric Tons of Heavy Metal)	1	1	1	0	1
		Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	1,716	1,716	1,716	0	1,716
		Remediation Complete (Number of Release Sites)	2	2	2	0	2
Lawrence Berkeley National Laboratory	VL-LBNL-0030	Remediation Complete (Number of Release Sites)	13	13	13	0	13
Laboratory for Energy-Related Health Research	VL-LEHR-0040	Industrial Facility Completions (Number of Facilities)	1	1	1	0	1
Stanford Linear Accelerator Center	VL-SLAC-0030	Remediation Complete (Number of Release Sites)	1	1	1	0	1
Closure Sites							
Ashtabula	OH-AB-0030	Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	3,707	3,707	3,707	0	3,707
		Radioactive Facility Completions (Number of Facilities)	28	28	28	0	28
		Industrial Facility Completions (Number of Facilities)	7	7	7	0	7

[Note] Due to the suspension of WIPP operations and the ongoing recovery efforts, targets for the corporate performance metric, "Transuranic Waste Dispositioned," cannot be provided at this time. Efforts continue at TRU sites to process and characterize transuranic waste activities. These activities will result in low and mixed low level waste that will be disposed; however, transuranic waste will remain at these sites in storage pending the resumption of WIPP operations. Updated performance metric targets will be reported in the future.

Office / Installation	Project Number	Project Name / Measure	Complete Through 2014	Targeted Completion Through 2015	Targeted Completion Through 2016	Balance Remaining	Life-Cycle Quantity
Columbus	OH-CL-0040	Remediation Complete (Number of Release Sites)	3	3	3	0	3
		Nuclear Facility Completions (Number of Facilities)	1	1	1	0	1
		Radioactive Facility Completions (Number of Facilities)	14	14	14	0	14
Fernald	OH-FN-0013	Remediation Complete (Number of Release Sites)	2	2	2	0	2
		Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	7,085	7,085	7,085	0	7,085
Fernald	OH-FN-0030	Remediation Complete (Number of Release Sites)	4	4	4	0	4
Fernald	OH-FN-0050	Remediation Complete (Number of Release Sites)	2	2	2	0	2
		Radioactive Facility Completions (Number of Facilities)	29	29	29	0	29
		Industrial Facility Completions (Number of Facilities)	1	1	1	0	1
Miamisburg	OH-MB-0013	Depleted and Other Uranium packaged for disposition (Metric Tons)	0	0	0	0	0
		Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	3,947	3,947	3,947	0	3,947

[Note] Due to the suspension of WIPP operations and the ongoing recovery efforts, targets for the corporate performance metric, "Transuranic Waste Dispositioned," cannot be provided at this time. Efforts continue at TRU sites to process and characterize transuranic waste activities. These activities will result in low and mixed low level waste that will be disposed; however, transuranic waste will remain at these sites in storage pending the resumption of WIPP operations. Updated performance metric targets will be reported in the future.

Office / Installation	Project Number	Project Name / Measure	Complete Through 2014	Targeted Completion Through 2015	Targeted Completion Through 2016	Balance Remaining	Life-Cycle Quantity
Miamisburg	OH-MB-0030	Depleted and Other Uranium packaged for disposition (Metric Tons)	0	0	0	0	0
		Remediation Complete (Number of Release Sites)	178	178	178	0	178
Miamisburg	OH-MB-0040	Nuclear Facility Completions (Number of Facilities)	8	8	8	0	8
		Radioactive Facility Completions (Number of Facilities)	11	11	11	0	11
		Industrial Facility Completions (Number of Facilities)	116	116	116	0	116
Rocky Flats Environmental Technology Site	RF-0011	Plutonium Metal or Oxide packaged for long-term storage (Number of Containers)	1,895	1,895	1,895	0	1,895
		Plutonium or Uranium Residues packaged for disposition (Kilograms of Bulk)	103,901	103,901	103,901	0	103,901
Rocky Flats Environmental Technology Site	RF-0013	Transuranic Waste Dispositioned (Cubic meters) - CH	15,036[Note]	[Note]			15,036
		Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	602,188	602,188	602,188	0	602,188
Rocky Flats	RF-0030						

[Note] Due to the suspension of WIPP operations and the ongoing recovery efforts, targets for the corporate performance metric, "Transuranic Waste Dispositioned," cannot be provided at this time. Efforts continue at TRU sites to process and characterize transuranic waste activities. These activities will result in low and mixed low level waste that will be disposed; however, transuranic waste will remain at these sites in storage pending the resumption of WIPP operations. Updated performance metric targets will be reported in the future.

Office / Installation	Project Number	Project Name / Measure	Complete Through 2014	Targeted Completion Through 2015	Targeted Completion Through 2016	Balance Remaining	Life-Cycle Quantity
Environmental Technology Site		Remediation Complete (Number of Release Sites)	360	360	360	0	360
Rocky Flats Environmental Technology Site	RF-0040	Material Access Areas eliminated (Number of Material Access Areas)	6	6	6	0	6
		Nuclear Facility Completions (Number of Facilities)	6	6	6	0	6
		Radioactive Facility Completions (Number of Facilities)	22	22	22	0	22
		Industrial Facility Completions (Number of Facilities)	141	141	141	0	141
Rocky Flats Environmental Technology Site	RF-0041	Material Access Areas eliminated (Number of Material Access Areas)	1	1	1	0	1
		Radioactive Facility Completions (Number of Facilities)	32	32	32	0	32
		Industrial Facility Completions (Number of Facilities)	176	176	176	0	176
<u>Idaho</u> Idaho National Laboratory	ID-0012B	Spent Nuclear Fuel packaged for final disposition (Metric Tons of Heavy Metal)	0	0	0	+285	285

[Note] Due to the suspension of WIPP operations and the ongoing recovery efforts, targets for the corporate performance metric, "Transuranic Waste Dispositioned," cannot be provided at this time. Efforts continue at TRU sites to process and characterize transuranic waste activities. These activities will result in low and mixed low level waste that will be disposed; however, transuranic waste will remain at these sites in storage pending the resumption of WIPP operations. Updated performance metric targets will be reported in the future.

Office / Installation	Project Number	Project Name / Measure	Complete Through 2014	Targeted Completion Through 2015	Targeted Completion Through 2016	Balance Remaining	Life-Cycle Quantity
Idaho National Laboratory	ID-0013B.NEW	Transuranic Waste Dispositioned (Cubic meters) - RH		3[Note]	[Note]		3
Idaho National Laboratory	ID-0040B.NEW	Nuclear Facility Completions (Number of Facilities)	11	11	11	0	11
		Radioactive Facility Completions (Number of Facilities)	7	7	7	0	7
		Industrial Facility Completions (Number of Facilities)	1	1	1	0	1
Argonne National Laboratory - West	CH-ANLW-0030	Remediation Complete (Number of Release Sites)	37	37	37	0	37
Idaho National Laboratory	HQ-SNF-0012X						
Idaho National Laboratory	ID-0011	Enriched Uranium packaged for disposition (Number of Containers)	1,586	1,586	1,586	0	1,586
		Material Access Areas eliminated (Number of Material Access Areas)	1	1	1	0	1
Idaho National Laboratory	ID-0013	Transuranic Waste Dispositioned (Cubic meters) - CH	52,288[Note]	[Note]			64,680
		Transuranic Waste Dispositioned (Cubic meters) - RH	119[Note]	[Note]			122

[Note] Due to the suspension of WIPP operations and the ongoing recovery efforts, targets for the corporate performance metric, "Transuranic Waste Dispositioned," cannot be provided at this time. Efforts continue at TRU sites to process and characterize transuranic waste activities. These activities will result in low and mixed low level waste that will be disposed; however, transuranic waste will remain at these sites in storage pending the resumption of WIPP operations. Updated performance metric targets will be reported in the future.

Office / Installation	Project Number	Project Name / Measure	Complete Through 2014	Targeted Completion Through 2015	Targeted Completion Through 2016	Balance Remaining	Life-Cycle Quantity
		meters) - RH Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	78,927	81,578	81,578	0	81,578
Idaho National Laboratory	ID-0014B	Liquid Waste in Inventory eliminated (Thousands of Gallons)	0	0	900	0	900
		Liquid Waste Tanks closed (Number of Tanks)	7	7	7	+4	11
		High-Level Waste packaged for final disposition (Number of Containers)	0	0	0	+6,660	6,660
Idaho National Laboratory	ID-0030B	Transuranic Waste Dispositioned (Cubic meters) - CH	5,501[Note]	[Note]			7,400
		Remediation Complete (Number of Release Sites)	288	288	288	0	288
Idaho National Laboratory	ID-0040B	Nuclear Facility Completions (Number of Facilities)	44	44	44	0	44
		Radioactive Facility Completions (Number of Facilities)	24	24	24	0	24
		Industrial Facility Completions (Number of Facilities)	33	33	33	0	33
Idaho National Laboratory	ID-0040C	Nuclear Facility Completions (Number of	0	0	1	+32	33

[Note] Due to the suspension of WIPP operations and the ongoing recovery efforts, targets for the corporate performance metric, "Transuranic Waste Dispositioned," cannot be provided at this time. Efforts continue at TRU sites to process and characterize transuranic waste activities. These activities will result in low and mixed low level waste that will be disposed; however, transuranic waste will remain at these sites in storage pending the resumption of WIPP operations. Updated performance metric targets will be reported in the future.

Office / Installation	Project Number	Project Name / Measure	Complete Through 2014	Targeted Completion Through 2015	Targeted Completion Through 2016	Balance Remaining	Life-Cycle Quantity
		Facilities)					
		Radioactive Facility Completions (Number of Facilities)	0	0	0	+10	10
		Industrial Facility Completions (Number of Facilities)	0	0	0	+77	77
Idaho National Laboratory	ID-0050B						
		Radioactive Facility Completions (Number of Facilities)	35	35	35	0	35
		Industrial Facility Completions (Number of Facilities)	143	143	143	0	143
Idaho Operations Office	ID-0900						
		Remediation Complete (Number of Release Sites)	233	233	233	0	233
<u>NNSA Sites</u>							
Lawrence Livermore National Laboratory	HQ-SW-0013Y.LLNL						
		Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	2,546	2,546	2,546	0	2,546
Nevada National Security Site	NV-0030						
		Remediation Complete (Number of Release Sites)	53	53	53	0	53
New Mexico Site Support	VL-FAO-0900						
		Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	1,319	1,319	1,319	0	1,319

[Note] Due to the suspension of WIPP operations and the ongoing recovery efforts, targets for the corporate performance metric, "Transuranic Waste Dispositioned," cannot be provided at this time. Efforts continue at TRU sites to process and characterize transuranic waste activities. These activities will result in low and mixed low level waste that will be disposed; however, transuranic waste will remain at these sites in storage pending the resumption of WIPP operations. Updated performance metric targets will be reported in the future.

Office / Installation	Project Number	Project Name / Measure	Complete Through 2014	Targeted Completion Through 2015	Targeted Completion Through 2016	Balance Remaining	Life-Cycle Quantity
Kansas City Plant	VL-KCP-0030	Remediation Complete (Number of Release Sites)	155	155	155	0	155
Los Alamos National Laboratory	VL-LANL-0013	Remediation Complete (Number of Release Sites)	43	43	43	0	43
		Transuranic Waste Dispositioned (Cubic meters) - CH	6,715[Note]	[Note]			9,489
		Transuranic Waste Dispositioned (Cubic meters) - RH	16[Note]	[Note]			94
Los Alamos National Laboratory	VL-LANL-0030	Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	4,376	4,376	4,376	0	4,376
		Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	5,426	5,426	5,426	0	5,426
Los Alamos National Laboratory	VL-LANL-0040-D	Remediation Complete (Number of Release Sites)	1,562	1,706	1,920	+67	1,987
		Nuclear Facility Completions (Number of Facilities)	1	1	1	0	1
		Radioactive Facility Completions (Number of Facilities)	15	15	15	+15	30
		Industrial Facility Completions (Number of Facilities)	5	5	5	0	5

[Note] Due to the suspension of WIPP operations and the ongoing recovery efforts, targets for the corporate performance metric, "Transuranic Waste Dispositioned," cannot be provided at this time. Efforts continue at TRU sites to process and characterize transuranic waste activities. These activities will result in low and mixed low level waste that will be disposed; however, transuranic waste will remain at these sites in storage pending the resumption of WIPP operations. Updated performance metric targets will be reported in the future.

Office / Installation	Project Number	Project Name / Measure	Complete Through 2014	Targeted Completion Through 2015	Targeted Completion Through 2016	Balance Remaining	Life-Cycle Quantity
Los Alamos National Laboratory	VL-LANL-0040-N	Radioactive Facility Completions (Number of Facilities)	4	4	4	0	4
		Industrial Facility Completions (Number of Facilities)	1	1	1	0	1
Lawrence Livermore National Laboratory	VL-LLNL-0013	Transuranic Waste Dispositioned (Cubic meters) - CH	125[Note]	[Note]			125
		Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	2,766	2,766	2,766	0	2,766
Lawrence Livermore National Laboratory	VL-LLNL-0030	Remediation Complete (Number of Release Sites)	120	120	120	0	120
Lawrence Livermore National Laboratory	VL-LLNL-0031	Remediation Complete (Number of Release Sites)	74	74	76	+2	78
Nevada National Security Site	VL-NV-0013	Transuranic Waste Dispositioned (Cubic meters) - CH	1,246[Note]	[Note]			1,246
Nevada National Security Site	VL-NV-0030	Radioactive Facility Completions (Number of Facilities)	10	10	10	+1	11

[Note] Due to the suspension of WIPP operations and the ongoing recovery efforts, targets for the corporate performance metric, "Transuranic Waste Dispositioned," cannot be provided at this time. Efforts continue at TRU sites to process and characterize transuranic waste activities. These activities will result in low and mixed low level waste that will be disposed; however, transuranic waste will remain at these sites in storage pending the resumption of WIPP operations. Updated performance metric targets will be reported in the future.

Office / Installation	Project Number	Project Name / Measure	Complete Through 2014	Targeted Completion Through 2015	Targeted Completion Through 2016	Balance Remaining	Life-Cycle Quantity
		Industrial Facility Completions (Number of Facilities)	1	1	1	0	1
Pantex Plant	VL-PX-0030	Remediation Complete (Number of Release Sites)	1,137	1,172	1,238	+821	2,059
Pantex Plant	VL-PX-0040	Remediation Complete (Number of Release Sites)	237	237	237	0	237
Sandia National Laboratory	VL-SN-0030	Industrial Facility Completions (Number of Facilities)	4	4	4	0	4
		Radioactive Facility Completions (Number of Facilities)	1	1	1	0	1
NNSA Service Center	VL-SPRU-0040	Remediation Complete (Number of Release Sites)	265	265	265	0	265
		Nuclear Facility Completions (Number of Facilities)	0	0	1	+1	2
NNSA Service Center	VL-SV-0100	Remediation Complete (Number of Release Sites)	5	5	6	+2	8
		Remediation Complete (Number of Release Sites)	1	1	1	0	1
Oak Ridge Oak Ridge	HQ-SW-0013Y.Y12	Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed	16,252	16,252	16,252	0	16,252

[Note] Due to the suspension of WIPP operations and the ongoing recovery efforts, targets for the corporate performance metric, "Transuranic Waste Dispositioned," cannot be provided at this time. Efforts continue at TRU sites to process and characterize transuranic waste activities. These activities will result in low and mixed low level waste that will be disposed; however, transuranic waste will remain at these sites in storage pending the resumption of WIPP operations. Updated performance metric targets will be reported in the future.

Office / Installation	Project Number	Project Name / Measure	Complete Through 2014	Targeted Completion Through 2015	Targeted Completion Through 2016	Balance Remaining	Life-Cycle Quantity
Oak Ridge	OR-0041.NEW	(Cubic meters) Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	44,277	44,277	44,277	0	44,277
		Nuclear Facility Completions (Number of Facilities)	1	1	1	0	1
		Industrial Facility Completions (Number of Facilities)	4	4	4	0	4
Oak Ridge	OR-0042.NEW	Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	511	511	511	0	511
		Radioactive Facility Completions (Number of Facilities)	19	19	19	0	19
		Industrial Facility Completions (Number of Facilities)	12	12	12	0	12
Oak Ridge	HQ-SW-0013X-OR	Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	7,157	7,157	7,157	0	7,157
Oak Ridge	OR-0011D	Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	180	180	180	0	180
Oak Ridge	OR-0011Y	Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed	93	93	93	0	93

[Note] Due to the suspension of WIPP operations and the ongoing recovery efforts, targets for the corporate performance metric, "Transuranic Waste Dispositioned," cannot be provided at this time. Efforts continue at TRU sites to process and characterize transuranic waste activities. These activities will result in low and mixed low level waste that will be disposed; however, transuranic waste will remain at these sites in storage pending the resumption of WIPP operations. Updated performance metric targets will be reported in the future.

Office / Installation	Project Number	Project Name / Measure	Complete Through 2014	Targeted Completion Through 2015	Targeted Completion Through 2016	Balance Remaining	Life-Cycle Quantity
		(Cubic meters)					
Oak Ridge	OR-0013A	Nuclear Facility Completions (Number of Facilities)	4	4	4	0	4
Oak Ridge	OR-0013B	Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	48,584	48,584	48,584	0	48,584
		Transuranic Waste Dispositioned (Cubic meters) - CH	1,027[Note]	[Note]			1,502
		Transuranic Waste Dispositioned (Cubic meters) - RH	138[Note]	[Note]			600
Oak Ridge	OR-0030	Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	18,095	18,138	18,138	0	18,138
		Nuclear Facility Completions (Number of Facilities)	2	2	2	0	2
		Radioactive Facility Completions (Number of Facilities)	15	15	15	0	15
		Industrial Facility Completions (Number of Facilities)	2	2	2	0	2
Oak Ridge	OR-0031	Remediation Complete (Number of Release Sites)	106	106	106	0	106
Oak Ridge	OR-0040	Remediation Complete (Number of Release Sites)	7	7	7	+1	8
		Legacy and Newly Generated Low-Level	5,178	5,178	5,178	0	5,178

[Note] Due to the suspension of WIPP operations and the ongoing recovery efforts, targets for the corporate performance metric, "Transuranic Waste Dispositioned," cannot be provided at this time. Efforts continue at TRU sites to process and characterize transuranic waste activities. These activities will result in low and mixed low level waste that will be disposed; however, transuranic waste will remain at these sites in storage pending the resumption of WIPP operations. Updated performance metric targets will be reported in the future.

Office / Installation	Project Number	Project Name / Measure	Complete Through 2014	Targeted Completion Through 2015	Targeted Completion Through 2016	Balance Remaining	Life-Cycle Quantity
		and Mixed Low-Level Waste disposed (Cubic meters)					
		Nuclear Facility Completions (Number of Facilities)	3	4	5	0	5
		Radioactive Facility Completions (Number of Facilities)	10	11	25	+5	30
		Industrial Facility Completions (Number of Facilities)	381	387	423	+126	549
		Remediation Complete (Number of Release Sites)	123	131	142	+23	165
Oak Ridge	OR-0041	Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	22,054	22,054	22,054	0	22,054
		Radioactive Facility Completions (Number of Facilities)	0	0	0	+4	4
		Industrial Facility Completions (Number of Facilities)	2	2	2	+7	9
		Remediation Complete (Number of Release Sites)	30	30	30	+96	126
Oak Ridge	OR-0042	Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	4,462	4,729	4,932	0	4,932
		Nuclear Facility Completions (Number of Facilities)	0	0	0	+15	15
		Radioactive Facility Completions (Number of Facilities)	14	14	14	+28	42
		Industrial Facility Completions (Number of Facilities)	8	8	8	+111	119

[Note] Due to the suspension of WIPP operations and the ongoing recovery efforts, targets for the corporate performance metric, "Transuranic Waste Dispositioned," cannot be provided at this time. Efforts continue at TRU sites to process and characterize transuranic waste activities. These activities will result in low and mixed low level waste that will be disposed; however, transuranic waste will remain at these sites in storage pending the resumption of WIPP operations. Updated performance metric targets will be reported in the future.

Office / Installation	Project Number	Project Name / Measure	Complete Through 2014	Targeted Completion Through 2015	Targeted Completion Through 2016	Balance Remaining	Life-Cycle Quantity
		of Facilities)					
Oak Ridge	OR-0043	Remediation Complete (Number of Release Sites)	87	87	87	+92	179
		Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	32,979	32,979	32,979	0	32,979
Oak Ridge	OR-0900-D	Industrial Facility Completions (Number of Facilities)	7	7	37	0	37
Oak Ridge	OR-0900-N	Remediation Complete (Number of Release Sites)	74	74	74	0	74
		Industrial Facility Completions (Number of Facilities)	3	3	3	0	3
		Remediation Complete (Number of Release Sites)	23	23	23	0	23
Paducah							
Paducah Gaseous Diffusion Plant	PA-0011	Enriched Uranium packaged for disposition (Number of Containers)	0	0	0	+182	182
Paducah Gaseous Diffusion Plant	PA-0011X	Radioactive Facility Completions (Number of Facilities)	1	1	1	0	1
Paducah Gaseous	PA-0013	Depleted and Other Uranium packaged for disposition (Metric Tons)	22,474	36,759	54,759	+402,051	456,810

[Note] Due to the suspension of WIPP operations and the ongoing recovery efforts, targets for the corporate performance metric, "Transuranic Waste Dispositioned," cannot be provided at this time. Efforts continue at TRU sites to process and characterize transuranic waste activities. These activities will result in low and mixed low level waste that will be disposed; however, transuranic waste will remain at these sites in storage pending the resumption of WIPP operations. Updated performance metric targets will be reported in the future.

Office / Installation	Project Number	Project Name / Measure	Complete Through 2014	Targeted Completion Through 2015	Targeted Completion Through 2016	Balance Remaining	Life-Cycle Quantity
Diffusion Plant							
Paducah Gaseous Diffusion Plant	PA-0040	Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	22,529	22,529	22,529	0	22,529
		Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	263	367	472	+314	786
		Nuclear Facility Completions (Number of Facilities)	0	5	5	0	5
		Radioactive Facility Completions (Number of Facilities)	6	6	6	+4	10
		Industrial Facility Completions (Number of Facilities)	19	20	20	+1	21
		Remediation Complete (Number of Release Sites)	108	130	133	+98	231
Paducah Gaseous Diffusion Plant	PA-0900	Remediation Complete (Number of Release Sites)	1	1	1	0	1
Portsmouth							
Portsmouth Gaseous Diffusion Plant	PO-0011X	Depleted and Other Uranium packaged for disposition (Metric Tons)	19,869	30,584	44,084	+210,233	254,317
Portsmouth Gaseous Diffusion Plant	PO-0013	Legacy and Newly Generated Low-Level	36,702	36,702	36,702	0	36,702

[Note] Due to the suspension of WIPP operations and the ongoing recovery efforts, targets for the corporate performance metric, "Transuranic Waste Dispositioned," cannot be provided at this time. Efforts continue at TRU sites to process and characterize transuranic waste activities. These activities will result in low and mixed low level waste that will be disposed; however, transuranic waste will remain at these sites in storage pending the resumption of WIPP operations. Updated performance metric targets will be reported in the future.

Office / Installation	Project Number	Project Name / Measure	Complete Through 2014	Targeted Completion Through 2015	Targeted Completion Through 2016	Balance Remaining	Life-Cycle Quantity
		and Mixed Low-Level Waste disposed (Cubic meters)					
Portsmouth Gaseous Diffusion Plant	PO-0040	Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	36,839	36,839	36,839	0	36,839
		Nuclear Facility Completions (Number of Facilities)	0	0	0	+12	12
		Radioactive Facility Completions (Number of Facilities)	8	8	8	+3	11
		Industrial Facility Completions (Number of Facilities)	42	42	42	+215	257
		Remediation Complete (Number of Release Sites)	20	20	20	0	20
Portsmouth Gaseous Diffusion Plant	PO-0900	Remediation Complete (Number of Release Sites)	130	130	130	0	130
Richland Hanford Site	RL-0011	Plutonium Metal or Oxide packaged for long-term storage (Number of Containers)	2,275	2,275	2,275	0	2,275
		Plutonium or Uranium Residues packaged for disposition (Kilograms of Bulk)	3,437	3,437	3,437	0	3,437
		Material Access Areas eliminated (Number of Material Access Areas)	20	20	20	0	20
		Nuclear Facility Completions (Number of	36	36	42	0	42

[Note] Due to the suspension of WIPP operations and the ongoing recovery efforts, targets for the corporate performance metric, "Transuranic Waste Dispositioned," cannot be provided at this time. Efforts continue at TRU sites to process and characterize transuranic waste activities. These activities will result in low and mixed low level waste that will be disposed; however, transuranic waste will remain at these sites in storage pending the resumption of WIPP operations. Updated performance metric targets will be reported in the future.

Office / Installation	Project Number	Project Name / Measure	Complete Through 2014	Targeted Completion Through 2015	Targeted Completion Through 2016	Balance Remaining	Life-Cycle Quantity
		Facilities)					
		Radioactive Facility Completions (Number of Facilities)	7	7	17	0	17
		Industrial Facility Completions (Number of Facilities)	20	20	30	0	30
Hanford Site	RL-0012						
		Spent Nuclear Fuel packaged for final disposition (Metric Tons of Heavy Metal)	2,117	2,117	2,117	0	2,117
Hanford Site	RL-0013						
		Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	1,317	1,317	1,317	0	1,317
Hanford Site	RL-0013C						
		Transuranic Waste Dispositioned (Cubic meters) - CH	5,763[Note]	[Note]			24,580
		Transuranic Waste Dispositioned (Cubic meters) - RH	0[Note]	[Note]			858
		Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	51,019	51,019	51,019	0	51,019
		Material Access Areas eliminated (Number of Material Access Areas)	0	0	4	0	4
Hanford Site	RL-0040						
		Nuclear Facility Completions (Number of Facilities)	6	6	6	+29	35
		Radioactive Facility Completions (Number of Facilities)	21	21	21	+110	131
		Industrial Facility Completions (Number of Facilities)	277	277	277	+546	823

[Note] Due to the suspension of WIPP operations and the ongoing recovery efforts, targets for the corporate performance metric, "Transuranic Waste Dispositioned," cannot be provided at this time. Efforts continue at TRU sites to process and characterize transuranic waste activities. These activities will result in low and mixed low level waste that will be disposed; however, transuranic waste will remain at these sites in storage pending the resumption of WIPP operations. Updated performance metric targets will be reported in the future.

Office / Installation	Project Number	Project Name / Measure	Complete Through 2014	Targeted Completion Through 2015	Targeted Completion Through 2016	Balance Remaining	Life-Cycle Quantity
Hanford Site	RL-0041	Remediation Complete (Number of Release Sites)	81	81	857	0	857
		Enriched Uranium packaged for disposition (Number of Containers)	2,958	2,958	2,958	0	2,958
		Depleted and Other Uranium packaged for disposition (Metric Tons)	3,100	3,100	3,100	0	3,100
		Nuclear Facility Completions (Number of Facilities)	8	9	10	+1	11
		Radioactive Facility Completions (Number of Facilities)	103	104	104	+12	116
		Industrial Facility Completions (Number of Facilities)	384	389	389	+62	451
		Remediation Complete (Number of Release Sites)	1,156	1,201	1,239	+90	1,329
Hanford Site	RL-0042	Spent Nuclear Fuel packaged for final disposition (Metric Tons of Heavy Metal)	7	7	7	0	7
		Nuclear Facility Completions (Number of Facilities)	0	0	0	+4	4
		Radioactive Facility Completions (Number of Facilities)	0	0	0	+8	8
		Industrial Facility Completions (Number of Facilities)	0	0	0	+32	32
River Protection							
River Protection	ORP-0014	Liquid Waste in Inventory eliminated (Thousands of Gallons)	0	0	0	+56,000	56,000
		Liquid Waste Tanks closed (Number of)	0	0	0	+177	177

[Note] Due to the suspension of WIPP operations and the ongoing recovery efforts, targets for the corporate performance metric, "Transuranic Waste Dispositioned," cannot be provided at this time. Efforts continue at TRU sites to process and characterize transuranic waste activities. These activities will result in low and mixed low level waste that will be disposed; however, transuranic waste will remain at these sites in storage pending the resumption of WIPP operations. Updated performance metric targets will be reported in the future.

Office / Installation	Project Number	Project Name / Measure	Complete Through 2014	Targeted Completion Through 2015	Targeted Completion Through 2016	Balance Remaining	Life-Cycle Quantity
		Tanks)					
		High-Level Waste packaged for final disposition (Number of Containers)	0	0	0	+9,667	9,667
		Transuranic Waste Dispositioned (Cubic meters) - CH	0[Note]	[Note]			1,555
		Transuranic Waste Dispositioned (Cubic meters) - RH	0[Note]	[Note]			3,864
		Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	39,163	42,122	42,122	+156,304	198,426
		Nuclear Facility Completions (Number of Facilities)	0	0	0	+18	18
		Radioactive Facility Completions (Number of Facilities)	0	0	0	+114	114
		Industrial Facility Completions (Number of Facilities)	0	0	0	+128	128
		Remediation Complete (Number of Release Sites)	5	5	5	+273	278
River Protection	ORP-0060	Transuranic Waste Dispositioned (Cubic meters) - RH	0[Note]	[Note]			546
<u>Savannah River</u>							
Savannah River Site	SR-0011B	Plutonium Metal or Oxide packaged for long-term storage (Number of Containers)	919	919	919	0	919
		Plutonium or Uranium Residues packaged for disposition (Kilograms of Bulk)	490	490	490	0	490
Savannah River Site	SR-0011C						

[Note] Due to the suspension of WIPP operations and the ongoing recovery efforts, targets for the corporate performance metric, "Transuranic Waste Dispositioned," cannot be provided at this time. Efforts continue at TRU sites to process and characterize transuranic waste activities. These activities will result in low and mixed low level waste that will be disposed; however, transuranic waste will remain at these sites in storage pending the resumption of WIPP operations. Updated performance metric targets will be reported in the future.

Office / Installation	Project Number	Project Name / Measure	Complete Through 2014	Targeted Completion Through 2015	Targeted Completion Through 2016	Balance Remaining	Life-Cycle Quantity
		Enriched Uranium packaged for disposition (Number of Containers)	3,472	3,472	3,472	+405	3,877
Savannah River Site	SR-0012	Depleted and Other Uranium packaged for disposition (Metric Tons)	11,536	11,536	11,536	0	11,536
Savannah River Site	SR-0013	Spent Nuclear Fuel packaged for final disposition (Metric Tons of Heavy Metal)	5	5	5	+36	41
		Depleted and Other Uranium packaged for disposition (Metric Tons)	11,645	11,645	11,645	0	11,645
		Transuranic Waste Dispositioned (Cubic meters) - CH	11,134[Note]	[Note]			15,007
		Transuranic Waste Dispositioned (Cubic meters) - RH	26[Note]	[Note]			55
Savannah River Site	SR-0014C	Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	154,985	161,485	170,331	+100,131	270,462
		Liquid Waste in Inventory eliminated (Thousands of Gallons)	5,778	6,778	7,778	+25,322	33,100
		Liquid Waste Tanks closed (Number of Tanks)	6	8	8	+43	51
Savannah River Site	SR-0020	High-Level Waste packaged for final disposition (Number of Containers)	3,879	4,130	4,405	+3,047	7,452
Savannah River Site	SR-0030	Material Access Areas eliminated (Number of Material Access Areas)	2	2	2	+1	3
		Nuclear Facility Completions (Number of	0	0	0	+190	190

[Note] Due to the suspension of WIPP operations and the ongoing recovery efforts, targets for the corporate performance metric, "Transuranic Waste Dispositioned," cannot be provided at this time. Efforts continue at TRU sites to process and characterize transuranic waste activities. These activities will result in low and mixed low level waste that will be disposed; however, transuranic waste will remain at these sites in storage pending the resumption of WIPP operations. Updated performance metric targets will be reported in the future.

Office / Installation	Project Number	Project Name / Measure	Complete Through 2014	Targeted Completion Through 2015	Targeted Completion Through 2016	Balance Remaining	Life-Cycle Quantity
		Facilities)					
		Radioactive Facility Completions (Number of Facilities)	14	14	14	+33	47
		Industrial Facility Completions (Number of Facilities)	25	25	25	+590	615
Savannah River Site	SR-0040	Remediation Complete (Number of Release Sites)	402	402	402	+114	516
		Nuclear Facility Completions (Number of Facilities)	11	11	11	0	11
		Radioactive Facility Completions (Number of Facilities)	7	7	7	0	7
		Industrial Facility Completions (Number of Facilities)	232	232	232	0	232
<u>West Valley</u>							
<u>Demonstration Project</u>							
West Valley	OH-WV-0013	Demonstration Project					
		Liquid Waste in Inventory eliminated (Thousands of Gallons)	814	814	814	0	814
		High-Level Waste packaged for final disposition (Number of Containers)	275	275	275	0	275
		Transuranic Waste Dispositioned (Cubic meters) - CH	0[Note]	[Note]			596
		Transuranic Waste Dispositioned (Cubic meters) - RH	0[Note]	[Note]			1,125
		Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	31,923	31,923	32,072	+2,519	34,591

[Note] Due to the suspension of WIPP operations and the ongoing recovery efforts, targets for the corporate performance metric, "Transuranic Waste Dispositioned," cannot be provided at this time. Efforts continue at TRU sites to process and characterize transuranic waste activities. These activities will result in low and mixed low level waste that will be disposed; however, transuranic waste will remain at these sites in storage pending the resumption of WIPP operations. Updated performance metric targets will be reported in the future.

Office / Installation	Project Number	Project Name / Measure	Complete Through 2014	Targeted Completion Through 2015	Targeted Completion Through 2016	Balance Remaining	Life-Cycle Quantity
West Valley Demonstration Project	OH-WV-0040						
		Nuclear Facility Completions (Number of Facilities)	3	3	4	+21	25
		Radioactive Facility Completions (Number of Facilities)	6	6	12	+18	30
		Industrial Facility Completions (Number of Facilities)	17	17	17	+26	43

[Note] Due to the suspension of WIPP operations and the ongoing recovery efforts, targets for the corporate performance metric, "Transuranic Waste Dispositioned," cannot be provided at this time. Efforts continue at TRU sites to process and characterize transuranic waste activities. These activities will result in low and mixed low level waste that will be disposed; however, transuranic waste will remain at these sites in storage pending the resumption of WIPP operations. Updated performance metric targets will be reported in the future.

**Environmental Management
Program Life-Cycle (LCC) Cost Range
(\$M)**

Site	LCC Total Range	
Argonne National Laboratory-East	179	-
Ashtabula	138	-
Brookhaven National Laboratory	478	-
Columbus	172	-
D&D Fund Deposit	2,317	-
Energy Technology Engineering Center	354	- 388
Fernald	3,221	-
Hanford Site	58,895	- 63,104
Headquarters	2,165	-
Idaho National Laboratory	18,937	- 22,760
Inhalation Toxicology Laboratory	13	-
Kansas City Plant	30	-
Laboratory for Energy-Related Health Research	40	-
Lawrence Berkeley National Laboratory	37	-
Lawrence Livermore National Laboratory	540	- 550
Los Alamos National Laboratory	2,780	- 2,904
Miamisburg	670	-
Moab	928	- 936
Nevada National Security Site	2,596	-
Oak Ridge	17,810	- 18,072
Office of River Protection	65,378	- 72,957
Other	1,456	-
Paducah Gaseous Diffusion Plant	14,105	- 21,832
Pantex Plant	206	-
Portsmouth Gaseous Diffusion Plant	17,975	- 18,998
Program Direction	11,912	-
Rocky Flats Environmental Technology Site	8,955	-
Sandia National Laboratory	263	- 265
Savannah River Site	65,590	- 71,992
Stanford Linear Accelerator Center	69	-
Technology Development and Deployment	2,966	-
Waste Isolation Pilot Plant	7,040	- 7,512
West Valley Demonstration Project	1,809	- 1,900
	-	-
Total EM Program	308,876	- 341,584

Environmental Management/

Overview

Environmental Management Lifecycle Costs by Program Baseline Summary (PBS) (\$K)						
PBS Code	PBS Name	Prior Costs (97 - 2014)	FY15 and Remaining Cost (Low Range)	FY15 and Remaining Cost (High Range)	Lifecycle Cost (Low Range)	Lifecycle Cost (High Range)
Argonne National Laboratory-East						
CH-ANLE-0030	Soil and Water Remediation	30,244	0	0	30,244	30,244
CH-ANLE-0040	Nuclear Facility D&D	69,806	0	0	69,806	69,806
CH-ANLE-0040.NEW	Argonne Recovery Act Project	78,918	0	0	78,918	78,918
Argonne National Laboratory-East Total		178,968	0	0	178,968	178,968
Ashtabula						
OH-AB-0030	Soil and Water Remediation-Ashtabula	137,911	0	0	137,911	137,911
Ashtabula Total		137,911	0	0	137,911	137,911
Brookhaven National Laboratory						
BRNL-0030	Soil and Water Remediation-Brookhaven National Laboratory	262,216	0	0	262,216	262,216
BRNL-0040	Nuclear Facility D&D-Brookhaven Graphite Research Reactor	137,216	0	0	137,216	137,216
BRNL-0041	Nuclear Facility D&D-High Flux Beam Reactor	61,272	10,729	11,545	72,001	72,817
BRNL-0041.NEW	A/B Waste Lines Removal and FHWMF Perimeter Area Soils Remediation	3,351	0	0	3,351	3,351
BRNL-0100	Brookhaven Community and Regulatory Support	2,822	50	50	2,872	2,872
Brookhaven National Laboratory Total		466,877	10,779	11,595	477,656	478,472

**Environmental Management
Lifecycle Costs by Program Baseline Summary (PBS)
(\$K)**

PBS Code	PBS Name	Prior Costs (97 - 2014)	FY15 and Remaining Cost (Low Range)	FY15 and Remaining Cost (High Range)	Lifecycle Cost (Low Range)	Lifecycle Cost (High Range)
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Columbus

OH-CL-0040	Columbus Nuclear Facility D&D	172,289	0	0	172,289	172,289
Columbus Total		172,289	0	0	172,289	172,289

D&D Fund Deposit

HQ-DD-0100	Federal Contribution to the Uranium Enrichment D&D Fund	2,316,826	0	0	2,316,826	2,316,826
D&D Fund Deposit Total		2,316,826	0	0	2,316,826	2,316,826

Energy Technology Engineering Center

CBC-ETEC-0040	Nuclear Facility D&D-Energy Technology Engineering Center	298,519	53,453	87,527	351,972	386,046
VL-ETEC-0040	Nuclear Facility D&D-Energy Technology Engineering Center	1,771	0	0	1,771	1,771
Energy Technology Engineering Center Total		300,290	53,453	87,527	353,743	387,817

Fernald

OH-FN-0013	Solid Waste Stabilization and Disposition-Fernald	1,626,711	0	0	1,626,711	1,626,711
OH-FN-0020	Safeguards and Security-Fernald	15,509	0	0	15,509	15,509
OH-FN-0030	Soil and Water Remediation-Fernald	1,338,667	0	0	1,338,667	1,338,667
OH-FN-0050	Non-Nuclear Facility D&D-Fernald	226,037	0	0	226,037	226,037
OH-FN-0101	Fernald Community and Regulatory Support	13,902	0	0	13,902	13,902

**Environmental Management
Lifecycle Costs by Program Baseline Summary (PBS)
(\$K)**

PBS Code	PBS Name	Prior Costs (97 - 2014)	FY15 and Remaining Cost (Low Range)	FY15 and Remaining Cost (High Range)	Lifecycle Cost (Low Range)	Lifecycle Cost (High Range)
Fernald Total		3,220,826	0	0	3,220,826	3,220,826
Hanford Site						
HQ-SNF-0012X-RL	SNF Stabilization and Disposition-Storage Operations Awaiting Geologic Repository	2,785	0	0	2,785	2,785
RL-0011	NM Stabilization and Disposition-PFP	2,360,904	406,230	573,330	2,767,134	2,934,234
RL-0012	SNF Stabilization and Disposition	2,758,094	149,277	153,084	2,907,371	2,911,178
RL-0013B	Solid Waste Stabilization and Disposition-200 Area-2012	796	0	0	796	796
RL-0013C	Solid Waste Stabilization & Disposition	2,885,621	9,224,866	9,545,962	12,110,487	12,431,583
RL-0020	Safeguards and Security	869,061	3,428,851	3,428,851	4,297,912	4,297,912
RL-0030	Soil and Water Remediation-Groundwater/Vadose Zone	1,919,289	7,192,189	7,759,850	9,111,478	9,679,139
RL-0040	Nuclear Facility D&D-Remainder of Hanford	1,873,521	17,216,020	21,296,172	19,089,541	23,169,693
RL-0041	Nuclear Facility D&D-River Corridor Closure Project	4,084,586	624,638	624,638	4,709,224	4,709,224
RL-0042	Nuclear Facility D&D-Fast Flux Test Facility Project	319,646	1,043,945	1,113,434	1,363,591	1,433,080
RL-0043	HAMMER Facility	7,426	0	0	7,426	7,426
RL-0044	B-Reactor Museum	1,940	0	0	1,940	1,940
RL-0080	Operate Waste Disposal Facility	71,232	0	0	71,232	71,232

Environmental Management Lifecycle Costs by Program Baseline Summary (PBS) (\$K)						
PBS Code	PBS Name	Prior Costs (97 - 2014)	FY15 and Remaining Cost (Low Range)	FY15 and Remaining Cost (High Range)	Lifecycle Cost (Low Range)	Lifecycle Cost (High Range)
RL-0100	Richland Community and Regulatory Support	284,997	1,036,361	1,036,361	1,321,358	1,321,358
RL-0900	Pre-2004 Completions	132,586	0	0	132,586	132,586
Hanford Site Total		17,572,484	40,322,377	45,531,682	57,894,861	63,104,166
Headquarters						
HQ-CDP-0100-N	Congressionally Directed Projects – Non Defense	-25	0	0	-25	-25
HQ-MS-0100	Policy, Management, and Technical Support	811,445	711,108	711,108	1,522,553	1,522,553
HQ-UR-0100	Uranium/Thorium Reimbursements	411,949	191,398	191,398	603,347	603,347
Headquarters Total		1,223,369	902,506	902,506	2,125,875	2,125,875
Idaho National Laboratory						
CH-ANLW-0030	Soil and Water Remediation-Argonne National Laboratory-West	8,245	0	0	8,245	8,245
HQ-SNF-0012X	SNF Stabilization and Disposition-Storage Operations Awaiting Geologic Repository	60,089	0	0	60,089	60,089
HQ-SNF-0012X-ID	SNF Stabilization and Disposition-Storage Operations Awaiting Geologic Repository	18,995	0	0	18,995	18,995
HQ-SNF-0012Y	SNF Stabilization and Disposition-New/Upgraded Facilities Awaiting Geologic Repository	66,844	0	0	66,844	66,844
ID-0011	NM Stabilization and Disposition	19,058	0	0	19,058	19,058

Environmental Management Lifecycle Costs by Program Baseline Summary (PBS) (\$K)						
PBS Code	PBS Name	Prior Costs (97 - 2014)	FY15 and Remaining Cost (Low Range)	FY15 and Remaining Cost (High Range)	Lifecycle Cost (Low Range)	Lifecycle Cost (High Range)
ID-0012B	SNF Stabilization and Disposition (Defense)	545,339	2,753,575	4,002,962	3,298,914	4,548,301
ID-0012B-N	SNF Stabilization and Disposition (Non-Defense)	56,956	160,593	169,587	217,549	226,543
ID-0013B	Solid Waste Stabilization and Disposition	3,327,724	1,671,970	2,097,396	4,999,694	5,425,120
ID-0013B.NEW	INL Recovery Act Project--TRU Waste	115,315	0	0	115,315	115,315
ID-0014B	Radioactive Liquid Tank Waste Stabilization and Disposition-2012	2,301,615	3,553,290	5,550,393	5,854,905	7,854,008
ID-0014B-T	Radioactive Liquid Tank Waste Stabilization and Disposition-2012 (T)	71,140	0	0	71,140	71,140
ID-0030B	Soil and Water Remediation-2012	1,410,299	1,415,645	1,555,847	2,825,944	2,966,146
ID-0040B	Nuclear Facility D&D-2012	698,414	0	0	698,414	698,414
ID-0040B.NEW	D&D NE Facilities (New)	90,956	0	0	90,956	90,956
ID-0050B	Non-Nuclear Facility D&D-2012	122,763	0	0	122,763	122,763
ID-0100	Idaho Community and Regulatory Support	81,646	76,560	76,560	158,206	158,206
ID-0900	Pre-2004 Completions	310,264	0	0	310,264	310,264
Idaho National Laboratory Total		9,305,662	9,631,633	13,452,745	18,937,295	22,760,407

Inhalation Toxicology Laboratory

CBC-ITL-0030	Soil and Water Remediation - ITL	12,537	0	0	12,537	12,537
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Environmental Management Lifecycle Costs by Program Baseline Summary (PBS) (\$K)						
PBS Code	PBS Name	Prior Costs (97 - 2014)	FY15 and Remaining Cost (Low Range)	FY15 and Remaining Cost (High Range)	Lifecycle Cost (Low Range)	Lifecycle Cost (High Range)
VL-ITL-0030	Soil and Water Remediation-Inhalation Toxicology Laboratory	13	0	0	13	13
Inhalation Toxicology Laboratory Total		12,550	0	0	12,550	12,550
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
VL-LEHR-0040	Nuclear Facility D&D-Laboratory for Energy-Related Health Research	551	0	0	551	551
Laboratory for Energy-Related Health Research Total		40,100	0	0	40,100	40,100
Lawrence Berkeley National Laboratory						
CBC-LBNL-0030	Soil and Water Remediation-Lawrence Berkeley National Laboratory	34,601	0	0	34,601	34,601
CBC-LBNL-0040	Decontamination and Decommissioning – LBNL	5,032	0	0	5,032	5,032
VL-LBNL-0030	Soil and Water Remediation-Lawrence Berkeley National Laboratory	1,539	0	0	1,539	1,539
Lawrence Berkeley National Laboratory Total		41,172	0	0	41,172	41,172

Environmental Management Lifecycle Costs by Program Baseline Summary (PBS) (\$K)						
PBS Code	PBS Name	Prior Costs (97 - 2014)	FY15 and Remaining Cost (Low Range)	FY15 and Remaining Cost (High Range)	Lifecycle Cost (Low Range)	Lifecycle Cost (High Range)

Lawrence Livermore National Laboratory

HQ-SW-0013Y	Solid Waste Stabilization and Disposition-NNSA Current Generation – LLNL	157,769	0	0	157,769	157,769
VL-LLNL-0013	Solid Waste Stabilization and Disposition-Lawrence Livermore National Laboratory	71,966	0	0	71,966	71,966
VL-LLNL-0030	Soil and Water Remediation-Lawrence Livermore National Laboratory - Main Site	136,158	0	0	136,158	136,158
VL-LLNL-0031	Soil and Water Remediation-Lawrence Livermore National Laboratory - Site 300	132,253	42,070	51,993	174,323	184,246
Lawrence Livermore National Laboratory Total		498,146	42,070	51,993	540,216	550,139

Los Alamos National Laboratory

VL-LANL-0013	Solid Waste Stabilization and Disposition-LANL Legacy	945,049	128,175	137,468	1,073,224	1,082,517
VL-LANL-0030	Soil and Water Remediation-LANL	1,572,174	62,483	172,288	1,634,657	1,744,462
VL-LANL-0040-D	Nuclear Facility D&D-LANL (Defense)	49,855	0	5,800	49,855	55,655
VL-LANL-0040-N	Nuclear Facility D&D-LANL (Non-Defense)	22,010	0	0	22,010	22,010
Los Alamos National Laboratory Total		2,589,088	190,658	315,556	2,779,746	2,904,644

Miamisburg

OH-MB-0013	Solid Waste	264,692	0	0	264,692	264,692
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Environmental Management
Lifecycle Costs by Program Baseline Summary (PBS)
(\$K)

PBS Code	PBS Name	Prior Costs (97 - 2014)	FY15 and Remaining Cost (Low Range)	FY15 and Remaining Cost (High Range)	Lifecycle Cost (Low Range)	Lifecycle Cost (High Range)
OH-MB-0020	Safeguards and Security-Miamisburg	28,284	0	0	28,284	28,284
OH-MB-0030	Soil and Water	263,739	0	0	263,739	263,739
OH-MB-0031.NEW	Mound Operable Unit 1 Recovery Act Project	17,526	0	0	17,526	17,526
OH-MB-0040	Nuclear Facility D&D-Miamisburg	-406	0	0	-406	-406
OH-MB-0100	Miamisburg Post-Closure Administration	86,578	0	0	86,578	86,578
OH-MB-0101	Miamisburg Community and Regulatory Support	9,710	0	0	9,710	9,710
Miamisburg Total		670,123	0	0	670,123	670,123

Moab

CBC-MOAB-0031	Soil and Water Remediation-Moab	417,931	510,385	517,244	928,316	935,175
Moab Total		417,931	510,385	517,244	928,316	935,175

Nevada National Security Site

VL-NV-0013	Solid Waste Stabilization and Disposition-Nevada	107,838	0	0	107,838	107,838
VL-NV-0030	Soil and Water Remediation - Nevada	1,027,858	702,059	702,059	1,729,917	1,729,917
VL-NV-0080	Operate Waste Disposal Facility-Nevada	156,868	467,696	467,696	624,564	624,564

Environmental Management Lifecycle Costs by Program Baseline Summary (PBS) (\$K)						
PBS Code	PBS Name	Prior Costs (97 - 2014)	FY15 and Remaining Cost (Low Range)	FY15 and Remaining Cost (High Range)	Lifecycle Cost (Low Range)	Lifecycle Cost (High Range)
VL-NV-0100	Nevada Community and Regulatory Support	63,895	69,645	69,645	133,540	133,540
	Nevada National Security Site	1,356,459	1,239,400	1,239,400	2,595,859	2,595,859
Oak Ridge						
HQ-SW-0013X	Solid Waste Stabilization and Disposition-Science Current Generation	92,469	0	0	92,469	92,469
HQ-SW-0013X-OR	Solid Waste Stabilization and Disposition-Science Current Generation	143,584	0	0	143,584	143,584
HQ-SW-0013Y	Solid Waste Stabilization and Disposition-NNSA Current Generation - Y-12	207,616	0	0	207,616	207,616
OR-0011D	U233 Disposition Program	166,832	371,791	377,618	538,623	544,450
OR-0011Y	NM Stabilization and Disposition – ETTP Uranium Facilities Management	52,430	0	0	52,430	52,430
OR-0011Z	Downblend of U-233 in Building 3019					
OR-0013A	Solid Waste Stabilization and Disposition-2006	164,315	0	0	164,315	164,315
OR-0013B	Solid Waste Stabilization and Disposition-2012	464,926	0	0	464,926	464,926
OR-0020	Safeguards and Security	1,542,666	493,126	535,591	2,035,792	2,078,257
OR-0030	Soil and Water Remediation-Melton Valley	269,681	426,957	430,938	696,638	700,619
OR-0031	Soil and Water Remediation-Offsites	350,609	0	0	350,609	350,609
OR-0040	Nuclear Facility D&D-East Tennessee Technology Park (D&D Fund)	60,343	0	0	60,343	60,343
OR-0041	Nuclear Facility D&D-Y-12	3,112,746	1,282,957	1,347,264	4,395,703	4,460,010

Environmental Management Lifecycle Costs by Program Baseline Summary (PBS) (\$K)						
PBS Code	PBS Name	Prior Costs (97 - 2014)	FY15 and Remaining Cost (Low Range)	FY15 and Remaining Cost (High Range)	Lifecycle Cost (Low Range)	Lifecycle Cost (High Range)
OR-0041.NEW	Y-12 Recovery Act Project	630,828	2,644,602	2,705,448	3,275,430	3,336,276
OR-0042	Nuclear Facility D&D-Oak Ridge National Laboratory	156,504	0	0	156,504	156,504
OR-0042.NEW	Oak Ridge Recovery Act Project	756,666	1,973,267	2,035,390	2,729,933	2,792,056
OR-0043	Nuclear Facility D&D-East Tennessee Technology Park (Defense)	58,165	0	0	58,165	58,165
OR-0100	Oak Ridge Reservation Community & Regulatory Support (Defense)	87,101	66,990	89,676	154,091	176,777
OR-0101	Oak Ridge Contract/Post-Closure Liabilities/Administration	126,283	292,183	292,183	418,466	418,466
OR-0102	East Tennessee Technology Park Contract/Post-Closure Liabilities/Administration	105,169	0	0	105,169	105,169
OR-0103	Oak Ridge Reservation Community & Regulatory Support (D&D Fund)	237,810	790,977	790,977	1,028,787	1,028,787
OR-0900-D	Pre-2004 Completions (Defense)	44,375	0	0	44,375	44,375
OR-0900-N	Pre-2004 Completions (Non-Defense)	16,829	0	0	16,829	16,829
OR-TD-0100	Technology Development Activities - Oak Ridge	618,567	0	0	618,567	618,567
Oak Ridge Total		9,467,033	8,342,850	8,605,085	17,809,883	18,072,118
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

Environmental Management Lifecycle Costs by Program Baseline Summary (PBS) (\$K)						
PBS Code	PBS Name	Prior Costs (97 - 2014)	FY15 and Remaining Cost (Low Range)	FY15 and Remaining Cost (High Range)	Lifecycle Cost (Low Range)	Lifecycle Cost (High Range)
ORP-0014	Radioactive Liquid Tank Waste Stabilization and Disposition	6,744,319	46,870,058	54,448,615	53,614,377	61,192,934
ORP-0060	Major Construction-Waste Treatment Plant	8,719,882	2,487,079	2,487,079	11,206,961	11,206,961
ORP-0061	Pre-Waste Treatment Plan, Transition Activity	433,314	0	0	433,314	433,314
ORP-0100	Office of River Protection Community and Regulatory Support	1,458	0	0	1,458	1,458
Office of River Protection Total		15,898,973	49,479,376	57,057,933	65,378,349	72,956,906
Other						
CBC-0100-FN	CBC Post Closure Administration - Fernald	62,747	0	0	62,747	62,747
CBC-0100-MD	CBC Post Closure Administration - Mound	1,846	0	0	1,846	1,846
CBC-ND-0100	CBC - Non-Defense Post Closure	2,297	0	0	2,297	2,297
CBC-0100-RF	CBC Post Closure Administration - Rocky Flats	17,256	0	0	17,256	17,256
CBC-UM-100	CBC - Non-Defense Post Closure Administration - UMTRA Sites	83	0	0	83	83
CBC-CA-0013B-N	Solid Waste Stabilization and Disposition-California Sites-2012 (Non-Defense)	6,226	0	0	6,226	6,226
CBC-CA-0100-N	Community and Regulatory Support (Non-Defense)	2,932	0	0	2,932	2,932
CBC-SEFOR-0040N	Southwest Experimental Fast Oxide Reactor (SEFOR) to the University of Arkansas	23	0	0	23	23
CBC-TUBA-0031	Tuba City Mill Tailings	633	0	0	633	633

**Environmental Management
Lifecycle Costs by Program Baseline Summary (PBS)
(\$K)**

PBS Code	PBS Name	Prior Costs (97 - 2014)	FY15 and Remaining Cost (Low Range)	FY15 and Remaining Cost (High Range)	Lifecycle Cost (Low Range)	Lifecycle Cost (High Range)
CH-OPS-0900	Pre-2004 Completions	98,862	0	0	98,862	98,862
CH-PPPL-0030	Soil and Water Remediation-Princeton Site A/B	309	0	0	309	309
NV-0030	Soil and Water Remediation - Offsites	88,373	0	0	88,373	88,373
OH-OPS-0900-D	Pre-2004 Completions	57,659	0	0	57,659	57,659
OH-OPS-0900-N	Pre-2004 Completions (Non-Defense)	396,924	0	0	396,924	396,924
VL-FAO-0100-D	Nuclear Material Stewardship (Defense)	108,725	0	0	108,725	108,725
VL-FAO-0100-N	Nuclear Material Stewardship (Non-Defense)	15,044	0	0	15,044	15,044
VL-FAO-0101	Miscellaneous Programs and Agreements in Principle	97,865	3,084	3,084	100,949	100,949
VL-FAO-0900	Pre-2004 Completions	232,740	0	0	232,740	232,740
VL-FOO-0013B-D	Solid Waste	15,300	0	0	15,300	15,300
VL-FOO-0013B-N	Solid Waste Stabilization and Disposition-Oakland Sites-2012 (Non-Defense)	68	0	0	68	68
VL-FOO-0100-D	LLNL Community and Regulatory Support	5,617	0	0	5,617	5,617
VL-FOO-0100-N	Oakland Community and Regulatory Support (Non-Defense)	89	0	0	89	89
VL-FOO-0900-N	Pre-2004 Completions (Non-Defense)	20,896	0	0	20,896	20,896
VL-GA-0012	SNF Stabilization and Disposition-General Atomics	15,169	0	0	15,169	15,169
VL-SPRU-0040	Nuclear Facility D&D-Separations Process Research Unit	208,316	0	0	208,316	208,316

**Environmental Management
Lifecycle Costs by Program Baseline Summary (PBS)
(\$K)**

PBS Code	PBS Name	Prior Costs (97 - 2014)	FY15 and Remaining Cost (Low Range)	FY15 and Remaining Cost (High Range)	Lifecycle Cost (Low Range)	Lifecycle Cost (High Range)
VL-SV-0100	South Valley Superfund	6,061	0	0	6,061	6,061
Other Total		1,462,060	3,084	3,084	1,465,144	1,465,144

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
PA-0011	NM Stabilization and Disposition-Paducah Uranium Facilities Management	47,966	11,195	15,283	59,161	63,249
PA-0011X	NM Stabilization and Disposition-Depleted Uranium Hexafluoride Conversion	590,996	2,828,290	2,828,290	3,419,286	3,419,286
PA-0013	Solid Waste Stabilization and Disposition	285,244	0	0	285,244	285,244
PA-0020	Safeguards and Security	81,182	107,396	125,064	188,578	206,246
PA-0040	Nuclear Facility D&D-Paducah	1,241,606	3,052,401	4,064,494	4,294,007	5,306,100
PA-0100	Paducah Community and Regulatory Support (Non-Defense)	10,534	0	0	10,534	10,534
PA-0101	Paducah Contract/Post-Closure Liabilities/Administration (Non-Defense)	-1,856	0	0	-1,856	-1,856
PA-0102	Paducah Contract/Post-Closure Liabilities/Administration (D&D Fund)	37,669	3,391	4,096	41,060	41,765
PA-0103	Paducah Community and Regulatory Support (D&D Fund)	30,178	25,130	26,918	55,308	57,096
Paducah Gaseous Diffusion Plant Total		2,510,123	11,594,704	19,321,688	14,104,827	21,831,811

Pantex Plant

VL-PX-0030	Soil and Water Remediation-Pantex	191,067	0	0	191,067	191,067
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Environmental Management Lifecycle Costs by Program Baseline Summary (PBS) (\$K)						
PBS Code	PBS Name	Prior Costs (97 - 2014)	FY15 and Remaining Cost (Low Range)	FY15 and Remaining Cost (High Range)	Lifecycle Cost (Low Range)	Lifecycle Cost (High Range)
VL-PX-0040	Nuclear Facility D&D-Pantex	15,209	0	0	15,209	15,209
	Pantex Plant Total	206,276	0	0	206,276	206,276
Portsmouth Gaseous Diffusion Plant						
PO-0011	NM Stabilization and Disposition-Portsmouth Uranium Facilities Management	101,844	0	0	101,844	101,844
PO-0011X	NM Stabilization and Disposition-Depleted Uranium Hexafluoride Conversion	614,669	1,407,657	1,407,657	2,022,326	2,022,326
PO-0013	Solid Waste Stabilization and Disposition	444,906	0	0	444,906	444,906
PO-0020	Safeguards and Security	179,803	280,028	280,028	459,831	459,831
PO-0040	Nuclear Facility D&D-Portsmouth	1,731,420	12,685,317	13,708,717	14,416,737	15,440,137
PO-0041	Nuclear Facility D&D-Portsmouth GCEP	70,200	0	0	70,200	70,200
PO-0101	Portsmouth Cold Standby	372,486	0	0	372,486	372,486
PO-0103	Portsmouth Contract/Post-Closure Liabilities/Administration (D&D Fund)	10,963	26,759	26,759	37,722	37,722
PO-0104	Portsmouth Community and Regulatory Support (D&D Fund)	9,303	39,598	39,598	48,901	48,901
	Portsmouth Gaseous Diffusion Plant Total	3,535,594	14,439,359	15,462,759	17,974,953	18,998,353
Program Direction						
HQ-PD-0100	Program Direction	5,477,126	6,390,849	6,390,849	11,867,975	11,867,975
	Program Direction Total	5,477,126	6,390,849	6,390,849	11,867,975	11,867,975

**Environmental Management
Lifecycle Costs by Program Baseline Summary (PBS)
(\$K)**

PBS Code	PBS Name	Prior Costs (97 - 2014)	FY15 and Remaining Cost (Low Range)	FY15 and Remaining Cost (High Range)	Lifecycle Cost (Low Range)	Lifecycle Cost (High Range)
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Rocky Flats Environmental Technology Site

CBC-RF-0102	Rocky Flats Future Use	3,061	0	0	3,061	3,061
RF-0011	NM Stabilization and Disposition	470,485	0	0	470,485	470,485
RF-0013	Solid Waste Stabilization and Disposition	892,507	0	0	892,507	892,507
RF-0020	Safeguards and Security	300,388	0	0	300,388	300,388
RF-0030	Soil and Water	2,088,092	0	0	2,088,092	2,088,092
RF-0040	Nuclear Facility D&D-North Side Facility Closures	1,920,826	0	0	1,920,826	1,920,826
RF-0041	Nuclear Facility D&D-South Side Facility Closures	756,890	0	0	756,890	756,890
RF-0100	RFETS	102,961	2,341,864	2,341,864	2,444,825	2,444,825
RF-0101	Rocky Flats Community and Regulatory Support	37,041	0	0	37,041	37,041
Rocky Flats Environmental Technology Site Total		6,572,251	2,341,864	2,341,864	8,914,115	8,914,115

Sandia National Laboratory

VL-SN-0030	Soil and Water Remediation-Sandia	247,737	14,809	17,985	262,546	265,722
Sandia National Laboratory Total		247,737	14,809	17,985	262,546	265,722

Savannah River Site

HQ-SNF-0012X-SR	SNF Stabilization and Disposition-Storage Operations Awaiting Geologic	68,140	0	0	68,140	68,140
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**Environmental Management
Lifecycle Costs by Program Baseline Summary (PBS)
(\$K)**

PBS Code	PBS Name	Prior Costs (97 - 2014)	FY15 and Remaining Cost (Low Range)	FY15 and Remaining Cost (High Range)	Lifecycle Cost (Low Range)	Lifecycle Cost (High Range)
	Repository					
SR-0011A	NM Stabilization and Disposition-2006	134,065	0	0	134,065	134,065
SR-0011B	NM Stabilization and Disposition-2012	3,671,623	0	0	3,671,623	3,671,623
SR-0011C	NM Stabilization and Disposition-2035	2,795,330	3,764,250	4,311,190	6,559,580	7,106,520
SR-0012	SNF Stabilization and Disposition	510,082	5,361,604	5,781,940	5,871,686	6,292,022
SR-0013	Solid Waste Stabilization and Disposition	1,905,833	4,818,487	5,327,863	6,724,320	7,233,696
SR-0014C	Radioactive Liquid Tank Waste Stabilization and Disposition-2035	10,200,533	12,935,091	16,134,385	23,135,624	26,334,918
SR-0014C-T	Radioactive Liquid Tank Waste Stabilization and Disposition-2035 (T)	137,603	0	0	137,603	137,603
SR-0020	Safeguards and Security	1,952,640	3,405,749	3,793,157	5,358,389	5,745,797
SR-0030	Area Completion	2,047,475	10,413,235	11,692,751	12,460,710	13,740,226
SR-0040	Nuclear Facility D&D	494,319	0	0	494,319	494,319
SR-0040B	Nuclear Facility D&D-2012	778	0	0	778	778
SR-0100	Non-Closure Mission Support	225,138	384,670	384,670	609,808	609,808
SR-0101	Savannah River Community and Regulatory Support	164,742	0	0	164,742	164,742
SR-0900	Pre-2004 Completions	198,242	0	0	198,242	198,242
	Savannah River Site Total	24,506,543	41,083,086	47,425,956	65,589,629	71,932,499

Environmental Management Lifecycle Costs by Program Baseline Summary (PBS) (\$K)						
PBS Code	PBS Name	Prior Costs (97 - 2014)	FY15 and Remaining Cost (Low Range)	FY15 and Remaining Cost (High Range)	Lifecycle Cost (Low Range)	Lifecycle Cost (High Range)
Stanford Linear Accelerator Center						
CBC-SLAC-0030	Soil and Water Remediation-Stanford Linear Accelerator Center	68,049	59	59	68,108	68,108
VL-SLAC-0030	Soil and Water Remediation-Stanford Linear Accelerator Center	1,043	0	0	1,043	1,043
Stanford Linear Accelerator Center Total		69,092	59	59	69,151	69,151
Technology Development and Deployment						
HQ-TD-0100	Technology Development	1,775,970	1,153,755	1,153,755	2,929,725	2,929,725
Technology Development and Deployment Total		1,775,970	1,153,755	1,153,755	2,929,725	2,929,725
Waste Isolation Pilot Plant						
CB-0020	Safeguards and Security - WIPP	49,648	140,685	140,685	190,333	190,333
CB-0080	Operate Waste Disposal Facility-WIPP	2,642,496	2,423,307	2,783,435	5,065,803	5,425,931
CB-0081	Central Characterization Project	374,092	253,084	305,058	627,176	679,150
CB-0090	Transportation-WIPP	451,900	424,344	484,451	876,244	936,351
CB-0100	US/Mexico/Border/Material Partnership	11,387	0	0	11,387	11,387
CB-0101	Community and Regulatory Support	261,898	0	0	261,898	261,898
CB-0900	Pre-2004 Completions	7,137	0	0	7,137	7,137
Waste Isolation Pilot Plant Total		3,798,558	3,241,420	3,713,629	7,039,978	7,512,187

Environmental Management Lifecycle Costs by Program Baseline Summary (PBS) (\$K)						
PBS Code	PBS Name	Prior Costs (97 - 2014)	FY15 and Remaining Cost (Low Range)	FY15 and Remaining Cost (High Range)	Lifecycle Cost (Low Range)	Lifecycle Cost (High Range)
West Valley Demonstration Project						
OH-WV-0012	SNF Stabilization and Disposition-West Valley	32,319	0	0	32,319	32,319
OH-WV-0013	Nuclear Facility D&D West Valley	327,379	132,093	132,093	459,472	459,472
OH-WV-0014	Radioactive Liquid Tank Waste Stabilization and Disposition-West Valley High-Level Waste Storage	0	0	0	0	0
OH-WV-0020	Safeguards and Security-West Valley	27,174	36,036	36,833	63,210	64,007
OH-WV-0040	Nuclear Facility D&D-West Valley	775,375	478,463	568,423	1,253,838	1,343,798
West Valley Demonstration Project Total		1,162,247	646,592	737,349	1,808,839	1,899,596
Grand Total		117,240,931	191,635,068	224,342,243	308,875,999	341,585,174

Environmental Management Project Schedule Range 50% to 80% Confidence Level (Single date indicates both 50% and 80% Confidence Levels are the same)	
Site	Completion Date
Los Alamos National Laboratory	TBD
Separations Process Research Unit	2018
Brookhaven National Laboratory	2019
Lawrence Livermore National Laboratory	2020
Sandia National Laboratory	2020
Energy Technology Engineering Center	2017 ^a
Moab	2025
Nevada Nuclear Security Site	2030
Waste Isolation Pilot Plant	2035 - 2039
West Valley Demonstration Project	2040 - 2045
Savannah River Site	2042
Idaho National Laboratory	2042 - 2050
Portsmouth Gaseous Diffusion Plant	2044 - 2052
Oak Ridge	2046
Paducah Gaseous Diffusion Plant	2047
Hanford Site	2070

^aEM will continue to aggressively pursue cleanup at ETEC in accordance with the Administrative Order on Consent while working with regulators to facilitate cleanup as quickly as possible.

Carlsbad

Overview

The Carlsbad Field Office will support the Department's Strategic Plan to continue cleanup of radioactive and chemical waste resulting from the Manhattan Project and Cold War activities. 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 Carlsbad Field Office's National Transuranic Waste Program coordinates with all DOE sites that generate transuranic waste to retrieve, repackage, characterize, ship, and dispose of transuranic waste resulting in cleaning up sites, reducing risks, and decreasing nuclear footprints.

Direct maintenance and repair for normal operations at the Carlsbad Field Office is estimated to be \$12,214,475 in FY 2016 (not including WIPP recovery activities).

The Consolidated and Further Continuing Appropriations Act, 2015, requires the Department of Energy to provide a separate accounting of the funding allocated to the Waste Isolation Pilot Plant's recovery activities. In FY 2014, \$22,700,000 of the appropriation was expended in support of initial recovery activities. All of these funds were made available through reallocation from originally planned activities. In FY 2015, \$127,000,000 of the Consolidated and Further Continuing Appropriations Act, 2015, funding will be expended on Waste Isolation Pilot Plant recovery, including \$42,100,000 that has been reallocated from base activities included in the Department's original request. The FY 2016 request includes a total of \$87,000,000.

Accounting of Funding for Waste Isolation Pilot Plant's Recovery Activities		
FY 2015		
PBS	Base	Recovery
PBS 0080, Operate Disposal Facility	<p>Activities: Safety, fire, compliance, environmental monitoring, surface and underground operations, facility maintenance, safety and health programs, emergency management, quality assurance, security, regulatory programs (including Resource Conservation and Recovery Act permit maintenance), project planning and control, procurement, finance and accounting, information services, oversight and interagency programs, etc.</p> <p>Funding: \$120.2 million</p>	<p>Activities: Safety management program upgrades, documented safety analysis revision for initial operations, ground control (geotechnical surveys, bolting operations), Accident Investigation Board support, zone recovery (surveys, cleaning, maintenance of equipment), decontamination, infrastructure and equipment upgrades, Panel 6 interim closure, Panel 7, Room 7 closure, interim ventilation procurement and startup, supplemental ventilation design and startup, Critical Decision-1, Approve Design and Cost Range, for line-item projects for confinement ventilation system/new exhaust shaft, operational readiness review preparation, etc.</p> <p>Funding: \$127 million (includes \$42.1 million reallocated from base)</p> <p>15-D-411, Ventilation System: \$12 million</p> <p>15-D-412, Exhaust Shaft: \$4 million</p>
PBS 0081, Central	<p>Activities: Acceptable knowledge review and procedural support, waste certification support</p>	N/A

Characterization Project	required for characterization activities ; generator site interface for the Central Characterization Project activities, Central Characterization Project administration, and Performance Demonstration Program for Resource Conservation and Recovery Act constituents; Central Characterization Program for legacy transuranic waste disposition at Idaho National Laboratory (transportation certification only, where Idaho National Laboratory funds characterization certification), Los Alamos National Laboratory, and the Oak Ridge National Laboratory. Funding: \$35.2 million	
PBS 0090, Transportation	Activities: Transportation capabilities through the carrier contracts; shipping corridor readiness, including training and associated stakeholder and regulatory grants, including Nuclear Regulatory Commission fees; package certification retention and associated required maintenance for packages used: TRUPACT II's, Half PACTS, TRUPACT III's, and RH-72B's; transportation readiness and capability for inter-site shipments. Funding: \$21.6 million	N/A
PBS 0020, Safeguards and Security	Activities: Site safeguards and security services for protection program management, emergency response, physical security, information protection, Protective Force, Personnel Security, Cybersecurity and Nuclear Material Control and Accountability supporting site cleanup mission priorities and protecting government equipment, materials, information, and the site workforce. Funding: \$4.5 million	N/A
Total FY 2015 Funding: \$324.5 million		
FY 2016		
PBS	Base Activities	Recovery Activities
PBS 0080, Operate Disposal Facility	Activities: Safety, fire, compliance, environmental monitoring, surface and underground operations, facility maintenance, safety and health programs, emergency management, quality assurance, security, Resource Conservation and Recovery Act permit maintenance, project planning and control, procurement, finance and accounting, information services, oversight and interagency	Activities: Operational readiness review execution, interim waste emplacement, continued ground control, maintenance of equipment, documented safety analysis revision for normal operations, continued infrastructure and equipment upgrades, progress toward Critical Decision-2, Approval of Performance Baseline & Critical Decision-3, Approval for start of Construction for line-item projects for confinement ventilation system/new

	<p>programs, etc.</p> <p>Funding: \$86.8 million</p>	<p>exhaust shaft, upgrade Central Monitoring Room, continue program enhancements, preparation for receipt of off-site transuranic waste, planning for phased upgrade to salt and waste hoist controls, continued decontamination, etc.</p> <p>Funding: \$87 million</p> <p>15-D-411, Ventilation System: \$23.2 million</p> <p>15-D-412, Exhaust Shaft: \$7.5 million</p>
PBS 0081, Central Characterization Project	<p>Activities: Acceptable knowledge review and procedural support, waste certification support required for characterization activities ; generator site interface for the Central Characterization Project activities, Central Characterization Project administration, and Performance Demonstration Program for Resource Conservation and Recovery Act constituents; Central Characterization Program for legacy transuranic waste disposition at Idaho National Laboratory (transportation certification only, where Idaho National Laboratory funds characterization certification) and the Oak Ridge National Laboratory.</p> <p>Funding: \$22.6 million</p>	N/A
PBS 0090, Transportation	<p>Activities: Transportation capabilities through the carrier contracts; shipping corridor readiness, including training and associated stakeholder and regulatory grants, including Nuclear Regulatory Commission fees; package certification retention and associated required maintenance for packages used: TRUPACT II's, Half PACTS, TRUPACT III's, and RH-72B's; transportation readiness and capability for inter-site shipments.</p> <p>Funding: \$16.2 million</p>	N/A
PBS 0020, Safeguards and Security	<p>Activities: Site safeguards and security services for protection program management, emergency response, physical security, information protection, Protective Force, Personnel Security, Cybersecurity and Nuclear Material Control and Accountability supporting site cleanup mission priorities and protecting government equipment, materials, information, and the site workforce; planned improvements in cyber security improvements.</p> <p>Funding: \$4.9 million</p>	N/A

	Total FY 2016 Funding: \$248.2 million	

Summary of Operational Incidents

Two isolated events took place at the Waste Isolation Pilot Plant in February 2014. On February 5, 2014, a vehicle used to transport salt caught fire in the underground. Workers were safely evacuated and the underground portion of the Waste Isolation Pilot Plant was shut down. The fire resulted in minor smoke inhalation to six workers, but it did not impact the public or the environment. On February 14, 2014, a second unrelated event occurred when a continuous air monitor alarmed during the night shift, when only 11 employees were at the Waste Isolation Pilot Plant on the surface and no employees were in the underground. The continuous air monitor measured airborne radioactivity close to the operating location where waste was being emplaced. The next day an aboveground exhaust air monitor on the Waste Isolation Pilot Plant detected very low levels of airborne radioactive contamination. A small amount of radioactivity leaked by the exhaust-duct dampers, through the unfiltered exhaust ducts, and escaped above ground. (The dampers were sealed with high-density expanding foam insulation soon after the event.) No workers were underground when the release occurred. The workers present during the radioactive release event were tested for internal radioactive contamination after the event. Radiation levels from the Waste Isolation Pilot Plant release have been very low; involving less exposure than a person receives from a chest x-ray.

As a result of these events, the Department established two Accident Investigation Boards to fully investigate the events and to assess the Waste Isolation Pilot Plant safety systems, programs and processes at the federal and contractor level. The Department’s Accident Investigation Boards use a rigorous process to investigate events that had or potentially could have harmed employees, public or the environment. The Accident Investigation Board’s report on the haul-truck fire was released March 7, 2014. The fire event Accident Investigation Board’s report details a significant number of Judgments of Needs that form the basis for corrective actions in the recovery plans, designed to prevent the recurrence of such an event. It also identified issues with maintenance, fire protection, training and qualifications, emergency response/preparedness, oversight, etc., and included areas where the Department should evaluate processes or procedures, and develop and implement corrective actions.

The initial “Phase 1” Accident Investigation Board report related to the radioactive material release event was issued on April 24, 2014, and focused on the site’s reaction to the radioactive material release, including related exposure to above-ground workers and the response actions. The Phase 1 radiological release Accident Investigation Board’s report covered many of the safety management programs and systems, including nuclear safety (e.g. hazards analysis and safety-significant classification), maintenance, radiological protection and controls, emergency management, integrated safety management, safety culture and oversight. The Phase 2 Accident Investigation Board report, which is expected in the first quarter of calendar year 2015, will focus on what specifically happened underground to cause the radiological release and how to prevent a reoccurrence.

As a result of these events, the Waste Isolation Pilot Plant repository is shut down and is not accepting any transuranic waste shipments. The current preliminary draft schedule for the Waste Isolation Pilot Plant recovery efforts estimates that the Waste Isolation Pilot Plant will begin transuranic waste emplacement operations of waste currently stored onsite in approved aboveground structures in the first quarter of calendar year 2016. This goal necessarily depends on receipt of applicable regulatory approvals. Therefore, all Department sites generating and processing transuranic waste requiring disposal at the Waste Isolation Pilot Plant are planning to store these inventories through FY 2016.

Status of Recovery

The Waste Isolation Pilot Plant Recovery Plan, issued September 30, 2014, outlines the proposed strategy, key activities, and management approach to safely return the Waste Isolation Pilot Plant to its Congressionally mandated mission of defense-generated transuranic waste disposal operations. The return to normal Waste Isolation Pilot Plant operations requires incident mitigation (completed May 31, 2014), re-establishing mine habitability, temporary and permanent ventilation upgrades, facility program enhancements, and reassessment of the safety basis. These activities include operating funded scope, as well as two proposed line-item construction projects: the new permanent ventilation system

and the new exhaust shaft. Ongoing and future actions include: implementation of recovery corrective actions; safety management program improvements; Documented Safety Analysis revision; underground stabilization activities (e.g., geotechnical surveys, roof bolting); completion of video surveys of Panel 7, Room 7; Panel 6 interim closure; Panel 7, Room 7 closure; radiological surveys; establishment of radiological buffer areas; collection and analysis of environmental samples; cleaning and maintenance of underground equipment; interim and supplemental ventilation upgrades; preliminary design of the permanent ventilation system; periodic replacement of the underground ventilation system filters; and, activities to ensure protection to the environment.

Highlights of the FY 2016 Budget Request

The funding supports the Waste Isolation Pilot Plant recovery, regulatory and environmental compliance actions, the Central Characterization Project to maintain progress toward legacy transuranic waste related milestones at generator sites, and transportation capabilities and associated activities. The Waste Isolation Pilot Plant recovery activities planned in FY 2016 (within Project Baseline Summary Operate Waste Disposal Facility-WIPP) include: continued safety basis documentation development; Accident Investigation Board Corrective Action Plan implementation; Safety Management Program improvement; facility and equipment maintenance replacements and upgrades; progress on the line-items (permanent ventilation system and new exhaust shaft); re-initiation of mining capability; facility restart planning and reviews; resumption of disposal operations of on-site waste using existing disposal panels. Central Characterization Project scope (within Project Baseline Summary Central Characterization Project) includes legacy transuranic waste characterization, packaging and certification at Idaho National Laboratory (transportation certification only, where Idaho National Laboratory funds characterization certification) and the Oak Ridge National Laboratory. It is assumed that the remaining Los Alamos National Laboratory 3706 transuranic waste inventory will be characterized and certified in FY 2015, and the costs for certification of newly generated transuranic waste at Los Alamos National Laboratory and the Savannah River Site will be funded by the National Nuclear Security Administration. Transportation activities (within Project Baseline Summary Transportation-WIPP) include support of a core shipping capability for inter-site shipments and off-site Type-B shipments, as well as, maintenance of established shipping corridors and associated stakeholder support activities.

The FY 2016 request includes \$7,500,000 in FY 2016 line-item funding to construct the Waste Isolation Pilot Plant exhaust shaft and \$23,218,000 for the construction of the new safety significant confinement ventilation system. While these projects are not needed to support the initial resumption of waste emplacement operations, they are needed to provide the Waste Isolation Pilot Plant ventilation improvements and infrastructure necessary to operate the facility for disposal of transuranic waste operations in both “clean” and contaminated underground areas by providing acceptable working conditions, in a life-sustaining environment, during normal operations.

FY 2015 - 2016 Key Milestones/Outlook

- (November 2014) Resumed roof bolting to re-establish ground control
- (March 2015) Complete video evaluation of waste emplaced in Room 7/Panel 7
- (June 2015) Prepare interim ventilation upgrade for operations (skid mounted High-Efficiency Particulate Air)
- (March 2015) Complete interim closure of Panel 6
- (June 2015) Complete interim closure of Room 7/Panel 7
- (September 2015) Complete Documented Safety Analysis, Revision 5
- (September 2015) Initiate operation of supplemental ventilation upgrades
- (March 2015) Complete remediation and recovery of waste hoist tower
- (August 2015) Obtain Critical Decision-1, Approve Design and Cost Range, for line-item projects for confinement ventilation system/new exhaust shaft
- (March 2016) Conduct operational readiness review for resumption of interim waste emplacement operations
- (March 2016) Resume interim waste emplacement operations of wastes stored on-site

The FY 2016 Budget request includes funding to support the line-item projects required for the Safety Significant Confinement Ventilation System and Exhaust Shaft, which are necessary for a return to normal operations. Until these projects are complete and operational, waste emplacement operations will be constrained by available airflow in the facility, and simultaneous mine stability, mining, maintenance, and waste emplacement activities cannot be conducted.

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 B shipping 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 the Department could place in the repository. The Waste Isolation Pilot Plant operates under a renewed Resource Conservation and Recovery Act, Part B, Hazardous Waste Facility Permit issued by the New Mexico Environment Department in December 2010. Following the radioactive material release event, the Department implemented its Resource Conservation and Recovery Act Contingency Plan at the site.

The Department has received four Administrative Orders from the New Mexico Environmental Department:

1. February 28, 2014, which established a schedule of compliance for all aboveground facility permit inspections, monitoring, recordkeeping, and reporting requirements;
2. May 12, 2014, which addressed permit-required actions in the underground (monitoring Permit requirements) that could not be performed and modifications to requirements under the February 28, 2014, Administrative Order and required two plans: Underground Compliance Plan and an Underground Derived Waste Storage Plan. This Administrative Order also required monitoring for the volatile organic compound trichloroethylene;
3. May 20, 2014, which addressed the initial closure of Panel 6 and Panel 7, Room 7 containing nitrate-salt bearing waste containers in the Waste Isolation Pilot Plant underground. This order required the development and submittal of the *Waste Isolation Pilot Plant Nitrate Salt Bearing Waste Container Isolation Plan*, describing the Department's plans for implementing closure of Panel 6 and Panel 7, Room 7;
4. December 6, 2014, which assessed civil penalties of \$17,746,250 for alleged thirteen violations of the New Mexico Hazardous Waste Act, New Mexico Waste Management Regulations and the Waste Isolation Pilot Plant permit. DOE responded to this Order in January 2015, and DOE and the New Mexico Environmental Department are currently engaged in discussions related to resolution of this Order.

The Environmental Protection Agency regulates the Waste Isolation Pilot Plant under specific criteria established in 40 Code of Federal Regulations Part 194 that require the Department 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 from the Environmental Protection Agency in March 2006, and the third in November 2010. The fourth Compliance Recertification Application was submitted in March 2014 and is currently within the regulatory review process. The Environmental Protection Agency has identified additional information be required to support their review and approval.

In addition, under the terms of the Waste Isolation Pilot Plant Land Withdrawal Act, the Mine Safety and Health Administration is responsible for quarterly inspections of the Waste Isolation Pilot Plant facility. Since the operational incidents, an updated Memorandum of Understanding has been developed between the Department and Mine Safety and Health Administration. The Mine Safety and Health Administration has resumed regular and at least quarterly inspections of the Waste Isolation Pilot Plant.

Contractual Framework

Program planning and management at the Carlsbad Field Office, which manages the nation's only transuranic waste repository, is conducted through the issuance and execution of contracts to large and small businesses. The Carlsbad Field Office develops near-term and long-term planning approaches in order to develop contract strategies and operations plans at a more detailed level. Selected contractors then execute these plans to complete cleanup.

The Waste Isolation Pilot Plant contract is a Management and Operating Contract. It was awarded to Nuclear Waste Partnership, LLC, on a cost plus award fee basis (with mostly Performance-Based Incentives) with a base performance period of October 1, 2012, to September 30, 2017, with one 5 year option period of October 1, 2017, to September 30, 2022.

This contract covers all site operations at the Waste Isolation Pilot Plant, including the receipt and handling of transuranic waste shipments, characterization of waste at generator sites, and verification/certification of waste documentation. Recovery planning and implementation activities are included within this Management and Operating contract.

The Carlsbad Field Office also manages several contracts which provide management analysis, site integration, transportation services, transportation communications support, and electric utilities. These contracts include indefinite delivery/indefinite quantity contracts with prime small businesses: Cast Specialty Transportation, Inc., and Visionary Solutions for transportation services. These are indefinite delivery/indefinite quantity contracts. The Cast Specialty contract is for the period January 9, 2012, to January 12, 2017. The Visionary Solutions contract is for the period January 9, 2012, to July 27, 2017. As transportation requirements become known during the term of the contract, the Contracting Officer will place fixed price per unit task orders with each contractor for the transportation of transuranic waste. As a part of the Waste Isolation Pilot Plant Recovery Plan implementation, the Department has determined keeping both carrier contracts in place at a substantially reduced scope is advantageous to ensure capabilities should inter-site shipment be required and because of the time and cost required to acquire sufficient carrier services when the Department anticipates resuming waste shipments from generator sites.

Strategic Management

In meeting the Department's strategic goal, "Position the Department of Energy to meet the challenges of the 21st century and the nation's Manhattan Project and Cold War legacy responsibilities," the Department will work to reduce the footprint at Transuranic Waste Sites across the complex through disposal of transuranic waste streams. The Carlsbad Field Office is key to the ultimate cleanup across the DOE complex, as well as, support to other DOE mission programs.

Carlsbad

Funding (\$K)

	FY 2014 Enacted	FY 2014 Current	FY 2015 Enacted	FY 2016 Request	FY 2016 vs FY 2015
Defense Environmental Cleanup					
Waste Isolation Pilot Plant					
Waste Isolation Pilot Plant					
CB-0080 / Operate Waste Disposal Facility-WIPP	153,516	173,127	263,166	204,426	-58,740
CB-0081 / Central Characterization Project	33,200	25,397	35,206	22,553	-12,653
CB-0090 / Transportation-WIPP	29,477	17,669	21,628	16,339	-5,289
Subtotal, Waste Isolation Pilot Plant	216,193	216,193	320,000	243,318	-76,682
Safeguards and Security					
CB-0020 / Safeguards and Security	4,977	4,977	4,455	4,860	+405
Total, Defense Environmental Cleanup	221,170	221,170	324,455	248,178	-76,277

Carlsbad Explanation of Major Changes (\$K)

FY 2016 vs FY 2015

Defense Environmental Cleanup

Waste Isolation Pilot Plant

CB-0080 / Operate Waste Disposal Facility-WIPP

- Decrease reflects sharing of resources with capital projects, and decrease in requirements for recovery activities. -58,740

CB-0081 / Central Characterization Project

- Decrease reflects support for recovery activities. -12,653

CB-0090 / Transportation-WIPP

- Decrease reflects support for recovery activities. -5,289

Safeguards and Security

CB-0020 / Safeguards and Security

- Increase supports improvements in cybersecurity. +405

Total, Carlsbad	-76,277
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Operate Waste Disposal Facility-WIPP (PBS: CB-0080)

Overviews

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

This operation supports activities related to resumption of the disposal of contact-handled and remote-handled transuranic waste at the Waste Isolation Pilot Plant. Key elements of Waste Isolation Pilot Plant operations are: 1) operation of the disposal repository – 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 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. Contact-handled transuranic waste disposal began in 1999; remote-handled transuranic waste disposal began in 2007. Although the volume of waste emplaced each year is dependent upon the specific waste streams shipped and payload constraints, the cumulative volumes of transuranic waste (in cubic meters) emplaced at the Waste Isolation Pilot Plant through FY 2013 has led to the removal of all legacy transuranic waste from 22 sites across the United States.

In February 2014, two incidents led to the suspension of transuranic waste receipt and emplacement activities. Site activities within this Project Baseline Summary are now focused on recovery of the repository, with the goal of returning to normal Waste Isolation Pilot Plant operations as safely and expeditiously as possible. The return to interim Waste Isolation Pilot Plant operations requires incident mitigation (complete), re-establishing mine habitability, temporary ventilation upgrades, facility program enhancements, reassessment of the safety basis and readiness reviews for operations. A return to normal operations, including increased waste emplacement rate and concurrent activities in the facility, requires permanent ventilation upgrades, including two line-item construction projects: Safety Significant Confinement Ventilation System (15-D-411) and Exhaust Shaft (15-D-412).

Actions within this Project Baseline Summary include implementation of recovery corrective actions, of safety management program improvements, Documented Safety Analysis revision, underground stabilization activities (e.g., geotechnical surveys, roof bolting), completion of video surveys of Panel 7, Room 7, Panel 6 interim closure, Panel 7, Room 7 closure, radiological surveys, establishment of radiological buffer areas, collection and analysis of environmental samples, cleaning and maintenance of underground equipment, interim and supplemental ventilation upgrades, preliminary design of the permanent ventilation system, periodic replacement of the underground ventilation system filters, and activities to ensure protection to the environment.

The Department is committed to the safe and expedient recovery of the Waste Isolation Pilot Plant. The current goal for the Waste Isolation Pilot Plant recovery efforts to begin transuranic waste emplacement operations of waste currently stored onsite in approved aboveground structures in first quarter of calendar year 2016. Any schedule necessarily depends on receipt of applicable regulatory approvals. Therefore, all Department sites generating and processing transuranic waste requiring disposal at the Waste Isolation Pilot Plant are planning to store these inventories through FY 2016.

FY 2016 funding supports completion of mine stabilization, completion of mine habitability activities, in all underground areas, completion of decontamination of contaminated areas, completion of FY 2016 High Efficiency Particulate filter change out, completion of the purchase of mining equipment and infrastructure, completion of contractor and Department of Energy readiness reviews for operations.

The Consolidated and Further Continuing Appropriations Act, 2015, requires the Department of Energy to provide a separate accounting of the funding allocated to the Waste Isolation Pilot Plant's recovery activities. In FY 2014, \$22,700,000 of the appropriation was expended in support of initial recovery activities. All of these funds

were made available through reallocation from originally planned activities. In FY 2015, \$127,000,000 of the Consolidated and Further Continuing Appropriations Act, 2015, funding will be expended on Waste Isolation Pilot Plant recovery, including \$42,100,000 that has been reallocated from base activities included in the Department's original request. The FY 2016 request includes a total of \$87,000,000.

Transuranic Waste Emplaced in the WIPP Repository											
Contact Handled (CH), Container Volume by Site (cubic meters)											
Fiscal Year	ANL-E	Hanford	INL	LANL	LLNL	NTS	ORNL	RFETS	SRS	WIPP	Cumulative Total
1999	0	0	15	190	0	0	0	62	0	0.0	266
2000	0	13	87	0	0	0	0	252	0	0.0	618
2001	0	68	717	74	0	0	0	1044	62	0.3	2,583
2002	0	18	2065	8	0	0	0	2903	141	0.5	7,717
2003	97	250	567	327	0	0	0	4017	2285	0.0	15,259
2004	24	448	342	0	0	106	0	4650	3240	0.2	24,069
2005	0	853	2564	171	146	235	0	2134	1554	0.0	31,726
2006	0	715	7890	546	0	64	0	0	1340	0.0	42,282
2007	0	765	5390	823	0	0	0	0	1548	0.0	50,808
2008	0	622	3304	689	0	0	12	0	1267	0.3	56,703
2009	0	9	4621	727	0	0	37	0	719	2.5	62,817
2010	0	475	5114	1063	0	0	230	0	862	0.0	70,561
2011	0	825	4211	1014	0	0	79	0	1138	0.0	77,827
2012	0	0	2620	1514	0	0	57	0	1469	0.0	83,487
2013	0	0	2101	1463	0	0	0	0	1465	0.0	88,516
2014*	0	0	1138	556	0	0	0	0	416	0	90,626
Site Totals:	121	5,061	42,744	9,163	146	405	415	15,062	17,506	4	90,626
Remote Handled (RH), Container Volume by Site (cubic meters)											
Fiscal Year	ANL-E	BAPL	GEVNC	INL	LANL	ORNL	SNL	SRS	Cumulative Total		
2007	0.0	0.0	0.0	22.7	0.0	0.0	0.0	0.0	23		
2008	2.5	0.0	0.0	47.4	0.0	0.0	0.0	0.0	73		
2009	7.4	0.0	0.6	15.7	14.2	5.0	0.0	18.4	134		
2010	7.3	0.0	19.1	18.9	0.0	32.8	0.0	0.0	212		
2011	17.5	1.9	0.0	17.4	0.0	5.0	0.0	5.0	259		
2012	15.4	1.3	0.0	14.7	0.0	3.2	4.6	1.7	300		
2013	12.9	0.0	0.0	38.9	0.0	0.0	0.0	0.0	352		
2014*	3.7	0	0	1.3	0	0	0	0	357		
Site Totals:	67	3	20	177	14	46	5	25	357		

*Data is as of December 22, 2014

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, after characterization, as low-level waste which is not disposed at the Waste Isolation Pilot Plant.

Operate Waste Disposal Facility-WIPP (PBS: CB-0080)

Activities and Explanation of Changes

FY 2015 Enacted	FY 2016 Request	Explanation of Changes FY 2016 vs FY 2015
\$263,166	\$204,426	-\$58,740
<ul style="list-style-type: none"> • Perform recovery activities including completion of visual survey of Panel 7, Room 7, higher-risk mine stabilization (geotechnical surveys, bolting), interim closure of Panel 6, closure of Panel 7, Room 7, completion of mine habitability activities, decontamination of contaminated areas, corrective actions and safety management program improvements, Documented Safety Analysis, Revision 5, High Efficiency Particulate filter change out, installation of interim and supplemental ventilation upgrades and startup and testing, purchase of mining equipment and infrastructure and planning for contractor and Department of Energy readiness reviews for operations. • Maintain safety and personnel health programs, surface and underground operations and maintenance, program administration, generator site interface, public affairs programs, payments to the National Institute of Standards and Technology and other organizations for independent oversight, environmental oversight, and right-of-ways. • Provide services and materials required for 	<ul style="list-style-type: none"> • Perform recovery activities including continued corrective actions and safety management program improvements, completion of mine stabilization, mine habitability activities in all underground areas, completion of decontamination of contaminated areas, High Efficiency Particulate filter change out, continued purchase of mining equipment and infrastructure, completion of contractor and Department of Energy readiness reviews for operations. • Re-start of interim waste emplacement operations. • Maintain safety and personnel health programs, surface and underground operations, program administration, generator site interface, public affairs programs, payments to the National Institute of Standards and Technology and other organizations for independent oversight, environmental oversight, and right-of-ways. • Provide funding for 40 Code of Federal Regulations Part 191/194 compliance, site environmental compliance, Resource Conservation and Recovery Act permit compliance, Quality Assurance, and payments to 	<ul style="list-style-type: none"> • Decrease reflects sharing of resources with capital projects, and decrease in requirements for recovery activities.

- TRUPACT-III and payload containers at the generator sites and the Waste Isolation Pilot Plant and surface operations.
- Provide funding for 40 Code of Federal Regulations Part 191/194 compliance, site environmental compliance, Resource Conservation and Recovery Act permit compliance, Quality Assurance, and payments to regulatory agencies.
 - Support routine site maintenance items and activities.
 - For new permanent ventilation system line-items (Safety Significant Confinement Ventilation System and Exhaust Shaft), prepare Critical Decision-1, *Approve Design Scope and Project Cost and Schedule Ranges*, and conduct preliminary planning for Critical Decision-2, *Approve Project Performance Baseline*.
- regulatory agencies.
- Support routine site maintenance items and activities.
 - Continued progress toward design and construction of Safety Significant Confinement Ventilation System and Exhaust Shaft projects.
-

Central Characterization Project (PBS: CB-0081)

Overview

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 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 after resumption of operations or to another site for processing and/or final certification, when cost-effective. The use of mobile systems provides generator sites with a highly regulated program that has already been certified for use. DOE reviews have concluded that the Central Characterization Program provides the most cost-effective and reliable characterization capabilities. This program 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’s Hazardous Waste Facility Permit issued by the New Mexico Environment Department. While Defense Environmental Cleanup funds support the Central Characterization Program resources at Environmental Management sites and projects for disposition of legacy transuranic waste and transuranic waste generated by environmental cleanup activities, the resources required for characterization of newly generated, mission derived transuranic waste are funded by the benefitting mission programs (but provided via the Waste Isolation Pilot Plant management and operations contract and subcontracts).

Although the Waste Isolation Pilot Plant is currently engaged in recovery efforts, generator site activities continue to process and prepare transuranic for disposal pending the Waste Isolation Pilot Plant’s resumption of normal operations. Therefore, Central Characterization Project efforts continue at select sites. In response to the findings of the Accident Investigation on the radiological release event and related reviews, DOE is implementing corrective actions that will also strengthen the waste processing programs at generators sites and the review and certification capabilities within the Central Characterization Program.

Central Characterization Project (PBS: CB-0081)

Activities and Explanation of Changes

FY 2015 Enacted	FY 2016 Request	Explanation of Changes FY 2016 vs FY 2015
\$35,206	\$22,553	-\$12,653
<ul style="list-style-type: none"> Provide acceptable knowledge and procedural support, mobile waste loading support at select generator sites and waste certification support required for characterization activities. 	<ul style="list-style-type: none"> Provide acceptable knowledge and procedural support, mobile waste loading support at select generator sites and waste certification support required for characterization activities. 	<ul style="list-style-type: none"> Decrease reflects support for recovery activities.

- Support generator site interface for the Central Characterization Project activities, Central Characterization Project administration, and Performance Demonstration Program for Resource Conservation and Recovery Act constituents.
 - Support Central Characterization Program for legacy transuranic waste disposition at Idaho National Laboratory (transportation certification only, where Idaho National Laboratory funds characterization certification), Los Alamos National Laboratory, and the Oak Ridge National Laboratory.
-
- Support generator site interface for the Central Characterization Project activities, Central Characterization Project administration, and Performance Demonstration Program for Resource Conservation and Recovery Act constituents.
 - Support Central Characterization Program for legacy transuranic waste disposition at Idaho National Laboratory (transportation certification only, where Idaho National Laboratory funds characterization certification), and Oak Ridge National Laboratory.

Transportation-WIPP (PBS: CB-0090)

Overview

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

This program 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 transport to other designated sites for treatment and/or characterization prior to shipment for disposal. 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 program provides for technical assistance to states and communities 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 and inter-site transfers of transuranic waste.

Since the February 2014 incidents, the Waste Isolation Pilot Plant is currently engaged in recovery efforts. However, as the Department is targeting interim operations in early FY 2016, a core capability to support select shipping campaigns is needed and is critical to recovery activities. The Department has determined retaining two carrier contracts as a substantially reduced scope is advantageous to ensure capabilities should inter-site shipment be required and because of the time and cost required to acquire sufficient carrier services when the Department anticipates resuming waste shipments from generator sites.

Transportation-WIPP (PBS: CB-0090)

Activities and Explanation of Changes

FY 2015 Enacted	FY 2016 Request	Explanation of Changes FY 2016 vs FY 2015
\$21,628	\$16,339	-\$5,289
<ul style="list-style-type: none"> Provides transportation capabilities through the carrier contracts. Supports shipping corridor readiness, including training and associated stakeholder and regulatory grants, including Nuclear Regulatory Commission fees. Maintains package certification and associated required maintenance for packages used: TRUPACT II's, Half PACTS, TRUPACT III's, and RH-72B's. Preserves transportation readiness and capability for inter-site shipments. 	<ul style="list-style-type: none"> Provides transportation capabilities through the carrier contracts. Supports shipping corridor readiness, including training and associated stakeholder and regulatory grants, including Nuclear Regulatory Commission fees. Maintains package certification and associated required maintenance for packages used: TRUPACT II's, Half PACTS, TRUPACT III's, and RH-72B's. Preserves transportation readiness and capability for inter-site shipments. 	<ul style="list-style-type: none"> Decrease reflects support for recovery activities.

Safeguards and Security (PBS: CB-0020)

Overview

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

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 and ensures the security of disposed sensitive wastes.

Safeguards and Security (PBS: CB-0020)

Activities and Explanation of Changes

FY 2015 Enacted	FY 2016 Request	Explanation of Changes FY 2016 vs FY 2015
\$4,455	\$4,860	+\$405
<ul style="list-style-type: none"> • Provide site safeguards and security services for protection program management, emergency response, physical security, information protection, Protective Force, Personnel Security, Cyber Security and Nuclear Material Control and Accountability supporting site cleanup mission priorities and protecting government equipment, materials, information, and the site workforce. • Implement enhanced security posture to support receipt of transuranic waste from Savannah River Site's surplus plutonium disposition project. 	<ul style="list-style-type: none"> • Provide site safeguards and security services for protection program management, emergency response, physical security, information protection, Protective Force, Personnel Security, Cyber Security and Nuclear Material Control and Accountability supporting site cleanup mission priorities and protecting government equipment, materials, information, and the site workforce. • Provide enhanced security posture to support receipt of transuranic waste from Savannah River Site's surplus plutonium disposition project. 	<ul style="list-style-type: none"> • Increase supports improvements in cybersecurity.

**Carlsbad
Capital Summary (\$K)**

Total	Prior Years	FY 2014 Enacted	FY 2014 Current	FY 2015 Enacted	FY 2016 Request	FY 2016 vs FY 2015
Capital Operating Expenses Summary (including (Major Items of Equipment (MIE))						
Capital Equipment > \$500K (including MIE)	0	0	0	0	0	0
Plant Projects (GPP and IGPP) (<\$10M)	0	0	0	0	494	-494
Total, Capital Operating Expenses	0	0	0	0	494	-494
Capital Equipment > \$500K (including MIE)						
	0	0	0	0	0	0
Total, Capital Equipment (including MIE)	0	0	0	0	494	-494
Plant Projects (GPP and IGPP) (Total Estimated Cost (TEC) <\$10M)						
<u>Waste Isolation Pilot Plant</u>						
Building-452 Cooling System Installation	0	0	0	0	250	-250
140/25T RH Crane Upgrades	0	0	0	0	244	-244
Total, Waste Isolation Pilot Plant	0	0	0	0	494	-494
Total, Plant Projects (GPP and IGPP) (Total Estimated (TEC) <\$10M)	0	0	0	0	494	-494
Total, Capital Summary	0	0	0	0	494	-494

Note: These amounts are draft and will be updated as part of the recovery efforts that are currently underway at the Waste Isolation Pilot Plant in Carlsbad, New Mexico.

**Carlsbad
Construction Summary (\$K)**

Total	Prior Years	FY 2014 Enacted	FY 2014 Current	FY 2015 Enacted	FY 2016 Request	FY 2016 vs FY 2015	
15-D-411, Safety Significant Confinement Ventilation System (WIPP) (CB-0080)							
Total Estimate Cost (TEC)	TBD	0	0	0	12,000	23,218	+11,218
Other Project Costs (OPC)	TBD	0	0	0	5,000	0	-5,000
Total Project Cost (TPC) 15-D-411	TBD	0	0	0	17,000	23,218	+6,218
15-D-412, Exhaust Shaft (WIPP) (CB-0080)							
Total Estimate Cost (TEC)	TBD	0	0	0	4,000	7,500	+3,500
Other Project Costs (OPC)	TBD	0	1,000	1,000	1,000	0	-1,000
Total Project Cost (TPC) 15-D-412	TBD	0	1,000	1,000	5,000	7,500	+2,500

**15-D-411, Safety Significant Confinement Ventilation System
Waste Isolation Pilot Plant, Carlsbad, New Mexico
Project is for Design and Construction**

1. Significant Changes and Summary

Significant Changes

Fiscal Year (FY) 2015 funding was provided by Congress to address emerging needs for Waste Isolation Pilot Plant recovery. Therefore, this does not include a new start for the budget year.

Summary

This project will design and construct a new ventilation system for the Waste Isolation Pilot Plant underground repository. This project provides the entire surface and subsurface equipment and infrastructure for the underground ventilation system. The new ventilation system will connect to and augments the existing ventilation system.

A Federal Project Director has been assigned to this project. Due to the priority nature of these projects, in response to unanticipated events at the Waste Isolation Pilot Plant, a plan for appropriate Federal Project Director certification is required and under development.

2. Critical Milestone History

(fiscal quarter or date)

	Conceptual Design Complete	CD-1	CD-2	Final Design Complete	CD-3	D&D Complete	CD-4
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FY 2016	10/22/2014	3QFY 2015	3QFY 2015	1QFY 2016	4QFY 2016	TBD	N/A	TBD
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- CD-0** – Approve Mission Need for a construction project with a conceptual scope and cost range
- Conceptual Design Complete** – Actual date the conceptual design was completed
- CD-1** – Approve Design Scope and Project Cost and Schedule Ranges
- CD-2** – Approve Project Performance Baseline
- Final Design Complete** – Estimated date the project design will be completed
- CD-3** – Approve Start of Construction
- D&D Complete** –Completion of D&D work (see Section 9)
- CD-4** – Approve Start of Operations or Project Closeout
- PB** – Indicates the Performance Baseline

	<i>CD-3A</i>
FY 2016	4QFY 2016

Project Cost History

(dollars in thousands)

TEC, Design	TEC, Construction	TEC, Total	OPC Except D&D	OPC, D&D	OPC, Total	TPC
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FY 2016 ^a	TBD	TBD	TBD	TBD	N/A	TBD	TBD
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No construction, excluding for approved long lead procurement, will be performed until the project performance baseline has been validated and CD-3 has been approved.

4. Project Scope and Justification

Scope

Design and construct a new ventilation system for the Waste Isolation Pilot Plant underground repository to replace contaminated underground ventilation system components currently in place. This project will design and construct a new ventilation system for the Waste Isolation Pilot Plant underground repository, including High Efficiency Particulate Air (HEPA) filters and fans, ductwork and dampers, diesel generator, exhaust stack, exhaust filter buildings, filter banks, and site support utilities. This project provides the entire surface infrastructure and equipment for the underground ventilation system. The new ventilation system will connect to and augments the existing ventilation system.

Justification

In February 2014, the Waste Isolation Pilot Plant experienced two separate events: a vehicle fire underground and a radiological release. As a result, the nation's only geologic repository has suspended operations, leading to impacts to ongoing transuranic waste disposition efforts across the DOE complex, thereby impacting enforceable regulatory commitments. In addition, the radiological release has led to the contamination of portions of the Waste Isolation Pilot Plant underground. The existing Waste Isolation Pilot Plant underground ventilation system of which the surface ventilation infrastructure is a component - is inadequate to support operations of both "clean" and contaminated underground areas. The underground ventilation system serves the Waste Isolation Pilot Plant underground by providing acceptable working conditions, in a life-sustaining environment, during normal operations. The underground ventilation system serves as a first line of defense in the event of a waste handling accident by providing a single pass, direct flow of air through the underground facility to a series of high efficiency particulate air filtration units. In the event of breached waste containers, the underground ventilation system assists in the confinement of released material.

Failure to provide safe habitual standards for the worker and meet surface environmental protection needs will delay resumption of Waste Isolation Pilot Plant normal operations and compromise the EM clean-up mission. The underground ventilation system is paramount to providing safe underground working conditions.

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

^a The FY 2015 Omnibus was \$12M in construction for this project in FY 2015.

5. Financial Schedule

(dollars in thousands)

	Appropriations ^a	Obligations	Costs
Total Estimated Cost (TEC)			
Design			
FY 2015 ^a	12,000	12,000	12,000
FY 2016	6,000	6,000	6,000
Outyears	TBD	TBD	TBD
Total, Design	TBD	TBD	TBD
Construction			
FY 2015	0	0	0
FY 2016 ^b	17,218	17,218	17,218
Outyears	TBD	TBD	TBD
Total, Construction	TBD	TBD	TBD
TEC			
FY 2015	12,000	12,000	12,000
FY 2016	23,218	23,218	23,218
Outyears	TBD	TBD	TBD
Total, TEC	TBD	TBD	TBD
Other Project Cost (OPC)			
OPC			
FY 2015	5,000	5,000	5,000
FY 2016	0	0	0
Outyears	TBD	TBD	TBD
Total, OPC	TBD	TBD	TBD
Total Project Cost (TPC)			
FY 2015	17,000	17,000	17,000
FY 2016	23,218	23,218	23,218
Outyears	TBD	TBD	TBD
Total, TPC	TBD	TBD	TBD

^a The FY 2015 Omnibus was \$12M in construction for this project in FY 2015.

6. Details of Project Cost Estimate

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design			
Design	TBD	N/A	N/A
Contingency	TBD	N/A	N/A
Total, Design	TBD	N/A	N/A
Construction			
Site Work	TBD	N/A	N/A
Long-lead Equipment	TBD	N/A	N/A
Construction	TBD	N/A	N/A
Contingency	TBD	N/A	N/A
Total, Construction	TBD	N/A	N/A
Total, TEC	TBD	N/A	N/A
Contingency, TEC	TBD	N/A	N/A
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning	TBD	N/A	N/A
Conceptual Design	TBD	N/A	N/A
MA-60 Reviews	TBD	N/A	N/A
Total, OPC except D&D	TBD	N/A	N/A
Total, OPC	TBD	N/A	N/A
Total, TPC	TBD	N/A	N/A
Total, Contingency	TBD	N/A	N/A

7. Schedule of Appropriation Requests

(dollars in thousands)

Request	Prior Years	FY 2015	FY 2016	Out Years	Total	
FY 2016 ^a	TEC	0	12,000	23,218	TBD	TBD
	OPC	0	5,000	0	TBD	TBD
	TPC	0	17,000	23,218	TBD	TBD

8. Related Operations and Maintenance Funding Requirements

A performance baseline has not been established.

Start of Operation or Beneficial Occupancy (fiscal quarter or date)	TBD
Expected Useful Life (number of years)	32
Expected Future Start of decontamination and decommissioning 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
Operations	TBD	TBD	TBD	TBD
Utilities	TBD	TBD	TBD	TBD
<u>Maintenance & Repair</u>	TBD	TBD	TBD	TBD
Total	TBD	TBD	TBD	TBD

9. D&D Information

This project will design and construct a new ventilation system for the Waste Isolation Pilot Plant underground repository. The new ventilation system will connect to and augment the existing ventilation system. The existing facilities will not undergo decontamination and decommissioning as part of this project. There is no cost estimated for decontamination and decommissioning in this construction project.

The new area being constructed in this project is not replacing existing facilities.

^a The FY 2015 Omnibus was \$12M in construction for this project in FY 2015.

10. Acquisition Approach

The acquisition approach is to use the existing cost-plus incentive management and operations contract with Nuclear Waste Partnership LLC. Additionally, the management and operations contractor will establish one or more firm-fixed-price contracts for Title I, Title II and Title III services through a competitive bid process.

**15-D-412, Exhaust Shaft
Waste Isolation Pilot Plant, Carlsbad, New Mexico
Project is for Design and Construction**

1. Significant Changes and Summary

Significant Changes

Fiscal Year (FY) 2015 funding was provided by Congress to address emerging needs for Waste Isolation Pilot Plant recovery. Therefore, this does not include a new start for the budget year.

Summary

This project will design and mine a new 2,150 foot vertical by 14 foot diameter exhaust shaft and two new 13 foot diameter horizontal drifts to the Waste Isolation Pilot Plant repository underground to support a new underground ventilation system.

A Federal Project Director has been assigned to this project, is certified at the appropriate level, and has approved this Construction Project Data Sheet.

2. Critical Milestone History

(fiscal quarter or date)

	Conceptual Design Complete	CD-1	CD-2	Final Design Complete	CD-3	D&D Complete	CD-4
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FY 2016	10/22/2014	3QFY 2015	3QFY 2015	1QFY 2016	4QFY 2016	TBD	N/A	TBD
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- CD-0** – Approve Mission Need for a construction project with a conceptual scope and cost range
- Conceptual Design Complete** – Actual date the conceptual design was completed
- CD-1** – Approve Design Scope and Project Cost and Schedule Ranges
- CD-2** – Approve Project Performance Baseline
- Final Design Complete** – Estimated date the project design will be completed
- CD-3** – Approve Start of Construction
- D&D Complete** – Completion of D&D work (see Section 9)
- CD-4** – Approve Start of Operations or Project Closeout
- PB** – Indicates the Performance Baseline

3. Project Cost History

(dollars in thousands)

	TEC, Design	TEC, Construction	TEC, Total	OPC Except D&D	OPC, D&D	OPC, Total	TPC
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FY 2016 ^a	TBD	TBD	TBD	TBD	N/A	TBD	TBD
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No construction will be performed until the project performance baseline has been validated and CD-3 has been approved.

4. Project Scope and Justification

Scope

Design and construct a new exhaust shaft to replace the contaminated exhaust shaft currently in place. The new exhaust shaft will augment the existing ventilation system.

Justification

In February 2014, the Waste Isolation Pilot Plant experienced two separate events: a vehicle fire underground and a radiological release. As a result, the nation's only geologic repository has suspended operations, leading to impacts to ongoing transuranic waste disposition efforts across the DOE complex, thereby impacting enforceable regulatory commitments. In addition, the radiological release has led to the contamination of portions of the Waste Isolation Pilot Plant underground. The existing Waste Isolation Pilot Plant exhaust shaft is contaminated and is inadequate to support operations of both "clean" and contaminated underground areas. The underground ventilation system serves the Waste Isolation Pilot Plant underground by providing acceptable working conditions, in a life-sustaining environment, during normal operations. The underground ventilation system serves as a first line of defense in the event of a waste handling accident by providing a single pass, direct flow of air through the underground facility to a series of high efficiency particulate air filtration units. In the event of breached waste containers, the underground ventilation system assists in the confinement of released material.

Failure to provide safe habitual standards for the worker and meet surface environmental protection needs will delay resumption of Waste Isolation Pilot Plant normal operations and compromise the EM clean-up mission. The underground ventilation system is paramount to providing safe underground working conditions.

This project will be conducted in accordance with the project management requirements in DOE O 413.3B, *Program and Project Management for the Acquisition of Capital Assets*.

^a The FY 2015 Omnibus was \$4M in construction in FY 2015.

5. Financial Schedule

(dollars in thousands)

	Appropriations ^a	Obligations	Costs
Total Estimated Cost (TEC)			
Design			
FY 2015 ^a	4,000	4,000	4,000
FY 2016	1,000	1,000	1,000
Outyears	TBD	TBD	TBD
Total, Design	TBD	TBD	TBD
Construction			
FY 2015	4,000	0	0
FY 2016	7,000	6,500	6,500
Outyears	TBD	TBD	TBD
Total, Construction	TBD	TBD	TBD
TEC			
FY 2015	4,000	4,000	4,000
FY 2016	7,500	7,500	7,500
Outyears	TBD	TBD	TBD
Total, TEC	TBD	TBD	TBD
OPC			
FY 2014	1,000	1,000	1,000
FY 2015	1,000	1,000	1,000
FY 2016	0	0	0
Outyears	TBD	TBD	TBD
Total, OPC	TBD	TBD	TBD
Total Project Cost (TPC)			
FY 2014	1,000	1,000	1,000
FY 2015	5,000	5,000	5,000
FY 2016	7,500	7,500	7,500
Outyears	TBD	TBD	TBD
Total, TPC	TBD	TBD	TBD

^a The FY 2015 Omnibus was \$4M in construction for this project in FY 2015.

6. Details of Project Cost Estimate

(dollars in thousands)

Current Total Estimate	Previous Total Estimate	Original Validated Baseline
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Total Estimated Cost (TEC)

Design

Design

TBD

N/A

N/A

Contingency

TBD

N/A

N/A

Total, Design	TBD	N/A	N/A
Construction			
Construction	TBD	N/A	N/A
Contingency	TBD	N/A	N/A
Total, Construction	TBD	N/A	N/A
Total, TEC	TBD	N/A	N/A
Contingency, TEC	TBD	N/A	N/A
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning	TBD	N/A	N/A
Conceptual Design	TBD	N/A	N/A
MA-60 Reviews	TBD	N/A	N/A
Total, OPC except D&D	TBD	N/A	N/A
Total, OPC	TBD	N/A	N/A
Total, TPC	TBD	N/A	N/A
Contingency, TPC	TBD	N/A	N/A

7. Schedule of Appropriation Requests
(\$K)

Request	Prior Years	FY 2015	FY 2016	Out Years	Total	
FY 2016 ^a	TEC	0	4,000	7,500	TBD	TBD
	OPC	1,000	1,000	0	TBD	TBD
	TPC	1,000	5,000	7,500	TBD	TBD

8. Related Operations and Maintenance Funding Requirements

A performance baseline has not been established.

Start of Operation or Beneficial Occupancy (fiscal quarter or date)	TBD
Expected Useful Life (number of years)	32
Expected Future Start of decontamination and decommissioning of this capital asset (fiscal quarter)	TBD

(Related Funding requirements)

(dollars in thousands)

Annual Costs	Life Cycle Costs
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	Current Total Estimate	Previous Total Estimate	Current Total Estimate	Previous Total Estimate
Operations	TBD	TBD	TBD	TBD
Utilities	TBD	TBD	TBD	TBD
<u>Maintenance & Repair</u>	TBD	TBD	TBD	TBD
Total	TBD	TBD	TBD	TBD

9. D&D Information

This project will design and construct a new 2,150 foot vertical by 14 foot diameter exhaust shaft to the Waste Isolation Pilot Plant repository. There is no cost estimated for decontamination and decommissioning in this construction project.

The new area being constructed in this project is not replacing existing facilities.

10. Acquisition Approach

The acquisition approach is to use the existing cost-plus incentive management and operations contract with Nuclear Waste Partnership LLC. Additionally, the management and operations contractor will establish a firm-fixed-price contract for Title I, Title II and Title III services through a competitive bid process.

^a The FY 2015 Omnibus was \$4M in construction for this project in FY 2015.

Idaho

Overview

The Idaho Site supports the Department's Strategic Plan to continue cleanup of radioactive and chemical waste resulting from the Manhattan Project and Cold War activities. The Idaho Cleanup Project is responsible for the treatment, storage and disposition of a variety of radioactive and hazardous waste streams, removal and disposition of targeted buried waste, protection of the Snake River Plain Aquifer, removal or deactivation of unneeded facilities, and the removal of DOE's inventory of spent (used) nuclear fuel and high level waste from Idaho.

The Idaho Site has achieved significant risk reduction in treating challenging radioactive waste, decontaminating and decommissioning contaminated excess facilities, remediating contaminated soils, and transferring spent nuclear fuel from wet storage to dry storage. Near-term remaining work includes continued Subsurface Disposal Area waste exhumation, processing of stored legacy remote-handled and contact-handled transuranic waste, closure of the tank farm and placement of all nuclear materials in safe storage ready for disposal.

Longer-term work scope will include any remaining legacy spent (used) nuclear fuel not acceptable for the Office of Nuclear Energy's missions, waste calcine disposition, decontamination and decommissioning of remaining excess facilities, and completing Comprehensive Environmental Response, Compensation and Liability Act Record of Decision cleanup requirements, including Test Area North groundwater remediation, completion of buried waste exhumations, and final caps.

Direct maintenance and repair at the Idaho National Laboratory is estimated to be \$23,177,000.

Highlights of the FY 2016 Budget Request

The funding request continues progress in processing, characterizing, and packaging stored contact-handled and remote-handled transuranic waste via the Advanced Mixed Waste Treatment Project. The remaining stored legacy waste presents unique technical and safety challenges, such as retrieval of contact-handled transuranic waste in their original decades' old deteriorated containers, which requires special repackaging and other precautionary procedures to protect workers.

The request continues progress toward closing the tank farm, including continuing treatment of sodium bearing waste in 2016. Sodium bearing waste treatment has taken several years longer than originally planned due to start-up challenges with the first-in-kind Integrated Waste Treatment Unit. (An overpressure event occurred at the liquid waste treatment facility in 2012 that delayed start-up operations due to plant redesign activities. Additional delays occurred in FY 2014 and FY 2015 due to mechanical equipment issues that arose during waste simulants runs during plant shakedown.)

The request continues progress in completing buried waste exhumation under the Accelerated Retrieval Project. Seven out of a total of nine retrieval areas have been completed, and the funding request will continue exhumations at the eighth retrieval area, which is the largest retrieval area under the project. The funding request also supports planning activities for the receipt of offsite spent (used) nuclear fuel from foreign and domestic research reactors (following completion of sodium bearing waste treatment operations) and supports increased fuel transfers from wet to dry storage.

Within the FY 2016 Budget request, EM supports the Departmental crosscut for Subsurface Engineering at \$8,000,000, \$3,000,000 of which is included within funding for Idaho tank waste disposition. The goal of the Subsurface Engineering crosscut includes understanding geochemical and geophysical responses in natural and engineered subsurface environments; improving the safety and cost-effectiveness of drilling; developing and maintaining specific subsurface conditions in challenging environments; and advancing the understanding of multi-scale complexities in the subsurface over long time scales.

This crosscut funding supports plans for a deep borehole field test, led by the Department’s Office of Nuclear Energy. It also supports Office of Environmental Management investigation of potential candidate wastes and waste forms suitable for borehole disposal.

FY 2016 Crosscuts (\$K)

Subsurface Engineering

Idaho

3,000

FY 2015 - 2016 Key Milestones/Outlook

- (December 2014) Maintain a 2,000 cubic meter Running Average of Legacy Transuranic Waste Over Three Years Shipped Out of Idaho
- (December 2015) Maintain a 2,000 cubic meter Running Average of Legacy Transuranic Waste Over Three Years Shipped Out of Idaho
- (January 2016) Submit Final 2015 Five Year Review to Environmental Protection Agency-Federal Facility Agreement/Colorado

Regulatory Framework

There are two primary regulators of the Idaho Site: the United States Environmental Protection Agency, and the State of Idaho Department of Environmental Quality. The United States Nuclear Regulatory Commission monitors DOE activities related to radioactive liquid waste tank stabilization and disposition. It also licenses the Independent Spent Fuel Storage Installation containing Three Mile Island fuel debris and some Fort St. Vrain spent (used) nuclear fuel. Five primary compliance agreements, amendments and consent orders executed between 1991 and 2000 govern cleanup work at the Idaho National Laboratory Site. Those five 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 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 ten 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 liquid 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 the Idaho Site by January 1, 2035, and treatment of liquid radioactive waste by December 31, 2012. An overpressure event occurred with the liquid waste processing facility in 2012, which resulted in a revised completion date of December 31, 2014, in the Site Treatment Plan. This milestone was

also missed, which resulted in the Idaho Department of Environmental Quality issuing DOE a Notice of Violation with associated fines on January 6, 2015. Discussions with the State are ongoing to develop a revised schedule. In addition, the State previously suspended the receipt of offsite spent nuclear fuel for storage at the Idaho Site until the remaining sodium bearing waste is treated.

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

Section 3116 of the Ronald W. Reagan National Defense Authorization Act of FY 2005 (Public Law 108-375): The Federal Facility Agreement defines the enforceable commitments for completing the closure of non-compliant radioactive waste 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 FY 2005 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.

Contractual Framework

Program planning and management at the Idaho Cleanup Project is conducted through the issuance and execution of contracts to large and small businesses. Idaho develops near-term and long-term planning approaches in order to develop contract strategies and program/project plans at a more detailed level. Selected contractors then execute these plans to complete cleanup on schedule. The existing cleanup contracts for the Idaho Site expire on September 30, 2015. DOE is implementing a master acquisition plan to award and fund new contracts for post FY 2015 cleanup activities.

Strategic Management

The Idaho site will identify disposal pathways and schedules for liquid sodium bearing waste, tank farm closure, calcined waste, and spent (used) nuclear fuel to meet key Idaho National Laboratory commitments.

The following factors present the strongest impacts to the overall achievement of the program's strategic goal:

- Availability of offsite disposal facilities and shipping assets (containers, tractors, trailers and drivers, and shipping schedules) for legacy radioactive waste.
- Uncertainties in potential waste certification procedural changes in response to ongoing Waste Isolation Pilot Plant recovery activities. The Idaho Site will continue to process stored legacy transuranic waste for offsite disposal at the Waste Isolation Pilot Plant and will continue to prioritize offsite shipment of mixed low-level waste until the Waste Isolation Pilot Plant resumes disposal operations.
- Start-up challenges and associated delays in treating sodium bearing waste at the first-in-kind Integrated Waste Treatment Unit.
- Availability of spent (used) nuclear fuel data and inter-site coordination for foreign and domestic research reactor receipts.
- Off-site disposition of the high level waste and spent (used) nuclear fuel.

Idaho

Funding (\$K)

	FY 2014 Enacted	FY 2014 Current	FY 2015 Enacted	FY 2016 Request	FY 2016 vs FY 2015
Defense Environmental Cleanup					
Idaho National Laboratory					
Idaho Cleanup and Waste Disposition					
ID-0012B-D / SNF Stabilization and Disposition-2012 (Defense)	7,450	7,450	12,400	17,353	+4,953
ID-0013 / Solid Waste Stabilization and Disposition	212,980	212,980	181,800	178,334	-3,466
ID-0014B / Radioactive Liquid Tank Waste Stabilization and Disposition-2012	106,600	108,372	107,650	72,966	-34,684
ID-0030B / Soil and Water Remediation-2012	56,270	54,498	75,443	89,130	+13,687
Subtotal, Idaho Cleanup and Waste Disposition	383,300	383,300	377,293	357,783	-19,510
Idaho Community and Regulatory Support					
ID-0100 / Idaho Community and Regulatory Support	3,700	3,700	2,910	3,000	+90
Total, Idaho National Laboratory	387,000	387,000	380,203	360,783	-19,420
Non-Defense Environmental Cleanup					
Small Sites					
Idaho National Laboratory					
ID-0012B-N / SNF Stabilization and Disposition-2012 (Non-Defense)	4,993	6,593	24,900	5,919	-18,981
Total, Idaho	391,993	393,593	405,103	366,702	-38,401

Idaho Explanation of Major Changes (\$K)

FY 2016 vs FY 2015

Defense Environmental Cleanup

Idaho National Laboratory

Idaho Cleanup and Waste Disposition

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

- The increase reflects planning for resumption of offsite fuel receipts and increased transfers of spent (used) nuclear fuel from wet storage to dry storage. +4,953

ID-0013 / Solid Waste Stabilization and Disposition

- The funding decrease reflects reduced quantities of mixed low-level waste treatment and offsite disposal. -3,466

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

- The decrease reflects overall reduction in tank waste activities. -34,684

ID-0030B / Soil and Water Remediation-2012

- The increase supports construction planning activities at Accelerated Retrieval Project IX, which is the final Accelerated Retrieval Project facility to be constructed. +13,687

Idaho Community and Regulatory Support

ID-0100 / Idaho Community and Regulatory Support

- The funding increase supports groundwater monitoring activities, stakeholder outreach, and regulatory support. +90

Non-Defense Environmental Cleanup

Small Sites

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

- The decrease reflects planned completion of facility upgrades at Fort St. Vrain using funds provided in FY 2015. -18,981

Total, Idaho	-38,401
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SNF Stabilization and Disposition-2012 (Defense) (PBS: ID-0012B-D)

Overview

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

This project includes safe and secure storage of legacy spent (used) nuclear fuel and managing the receipt of off-site spent (used) nuclear fuel shipments. EM currently manages and stores approximately 262 metric tons of spent (used) nuclear fuel at the Idaho Site and in Colorado. The EM plan includes the receipt of approximately 22 metric tons of spent nuclear fuel from off-site locations, including Foreign and Domestic Research Reactor spent (used) nuclear fuel from FY 2005 through FY 2027.

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

Activities and Explanation of Changes

FY 2015 Enacted	FY 2016 Request	Explanation of Changes FY 2016 vs FY 2015
\$12,400	\$17,353	+\$4,953
<ul style="list-style-type: none"> • Maintain all dry spent (used) nuclear fuel storage facilities. • Maintain the Chemical Processing Plant building-666 and 603 with accompanying spent (used) nuclear fuel. • Retrieve EBR II fuel from storage for transfer to the Materials and Fuels Complex. • Conduct scientific applied research and technology development activities to assure safe extended storage of spent (used) nuclear fuel. • Receive and store up to 15 shipments of Advanced Test Reactor spent (used) nuclear fuel. • Replace resin bed in Chemical Processing Plant building-666. 	<ul style="list-style-type: none"> • Maintain all dry spent (used) nuclear fuel storage facilities. • Maintain the Chemical Processing Plant building-666 and 603 with accompanying spent (used) nuclear fuel. • Retrieve EBR II fuel (20 shipments) from storage for transfer to the Materials and Fuels Complex. • Conduct scientific applied research and technology development activities to assure safe extended storage of spent (used) nuclear fuel and conduct planning and preliminary design for future disposition. • Receive and store up to 15 shipments of Advanced Test Reactor spent (used) nuclear fuel. • Plan for and resume receipt of foreign and domestic research reactor spent (used) nuclear fuel from off-site. 	<ul style="list-style-type: none"> • The increase reflects planning for resumption of offsite fuel receipts and increased transfers of spent (used) nuclear fuel from wet storage to dry storage.

Solid Waste Stabilization and Disposition (PBS: ID-0013)

Overview

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 active operations at the Idaho Site. Completion of these activities is necessary for reducing the footprint and completing cleanup of the site.

In FY 2016, processing of legacy transuranic waste will continue, supporting certification of waste for disposal. The inventory of processed and certified transuranic waste will be safely stored at the Idaho Site pending the completion of recovery activities underway at the Waste Isolation Pilot Plant and resumption of waste emplacement operations and receipt of off-site shipments.

Solid Waste Stabilization and Disposition (PBS: ID-0013)

Activities and Explanation of Changes

FY 2015 Enacted	FY 2016 Request	Explanation of Changes FY 2016 vs FY 2015
\$181,800	\$178,334	-\$3,466
<ul style="list-style-type: none"> Provide for site-wide environmental compliance. Maintain and operate 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 and Site Treatment Plan by repackaging and characterizing remote-handled transuranic waste at the Idaho Nuclear Technology and Engineering Center and contact-handled transuranic waste at the Advanced Mixed Waste Treatment Project in preparation for 	<ul style="list-style-type: none"> Provide for site-wide environmental compliance. Maintain and operate 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 and Site Treatment Plan by repackaging and characterizing remote-handled transuranic waste at the Idaho Nuclear Technology and Engineering Center and contact-handled transuranic waste at the Advanced Mixed Waste Treatment Project in preparation for 	<ul style="list-style-type: none"> The funding decrease reflects reduced quantities of mixed low-level waste treatment and offsite disposal.

shipment to the Waste Isolation Pilot Plant.

- Prepare approximately 4,500 cubic meters of contact-handled transuranic waste for shipment to offsite disposal facilities.
- Perform treatment of sodium contaminated remote-handled transuranic waste.
- Maintain capabilities to retrieve, repackage, and characterize contact-handled transuranic waste from other DOE sites and ship offsite within one year timeframe.
- Treat and dispose mixed low-level and low-level waste offsite.
- Provide for increased storage of processed and certified transuranic waste pending the resumption of operations at and shipments to the Waste Isolation Pilot Plant.
- Restart sludge drum processing.

shipment to the Waste Isolation Pilot Plant.

- Process approximately 4,500 cubic meters of contact-handled transuranic waste to prepare it for disposal at offsite facilities.
- Complete treatment of sodium contaminated remote-handled transuranic waste.
- Maintain capabilities to retrieve, repackage, and characterize contact-handled transuranic waste from other DOE sites and ship offsite within one year timeframe.
- Treat and dispose mixed low-level and low-level waste offsite.
- Provide for increased storage of processed and certified transuranic waste pending the resumption of operations at and shipments to the Waste Isolation Pilot Plant.

Radioactive Liquid Tank Waste Stabilization and Disposition-2012 (PBS: ID-0014B)

Overview

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

The overall objectives of this project are to treat and dispose of the sodium-bearing tank waste; close the tank farm tanks, associated piping and infrastructure; and operate and maintain Idaho Nuclear Technology and Engineering Center. This project also includes activities to support the preparation of stored high-level waste calcine for final disposition. Completion of this project will close the last four high-level liquid waste tanks and cap the tank farm area leading to the reduction of the most significant environmental, safety and health threat.

Radioactive Liquid Tank Waste Stabilization and Disposition-2012 (PBS: ID-0014B)

Activities and Explanation of Changes

FY 2015 Enacted	FY 2016 Request	Explanation of Changes FY 2016 vs FY 2015
\$107,650	\$72,966	-\$34,684
<ul style="list-style-type: none"> Conduct sodium bearing waste treatment operations. Develop the regulatory path forward for disposal of the sodium bearing waste treatment product. Maintain tank farm and systems necessary for safe delivery of sodium bearing waste until treatment is complete. Continue providing acceptable Idaho Nuclear Technology and Engineering Center utilities, maintenance and operations for the process waste system, support laboratories, and existing process facilities. 	<ul style="list-style-type: none"> Continue treatment of liquid sodium bearing waste. Prepare for initiation of tank cleaning activities supporting Resource Conservation and Recovery Act closure of the final four high-level waste tanks. Develop and further the regulatory path forward for disposal of the sodium bearing waste treatment product. Maintain tank farm and systems necessary for safe delivery of sodium bearing waste until treatment is complete. Continue providing acceptable Idaho Nuclear Technology and Engineering Center utilities, maintenance and operations for the process waste system, support laboratories, and existing process facilities. Continue safe storage and management of calcine. 	<ul style="list-style-type: none"> The decrease reflects overall reduction in tank waste activities.

Soil and Water Remediation (PBS: ID-0030B)

Overview

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

The objective of this project is remediation of contaminated soil and groundwater and closure of legacy Comprehensive Environmental Response, Compensation, and Liability Act sites at the Idaho National Laboratory. Voluntary Consent Order scope also contributes to reduction of risk to the Snake River Plain Aquifer. Completion of this project will contribute to reducing the footprint and the completion of the Idaho Cleanup Project.

Soil and Water Remediation-2012 (PBS: ID-0030B)

Activities and Explanation of Changes

FY 2015 Enacted	FY 2016 Request	Explanation of Changes FY 2016 vs FY 2015
\$75,443	\$89,130	+\$13,687
<ul style="list-style-type: none"> • Provide 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 exhumation of targeted buried waste at the Accelerated Retrieval Project VIII facility. • Characterize, package, certify and temporarily store retrieved Waste Area Group 7 buried targeted waste on site pending the resumption of operations at and shipments to the Waste Isolation Pilot Plant. • Maintain the remedies at Waste Area Group 2 (Test Reactor Area); Waste Area Group 4 (Central Facilities Area); Waste Area Group 5 (Power Burst Facility/Auxiliary Reactor Area); and Waste Area Group 6 (Experimental Breeder Reactor/BORAX). • Implement the Comprehensive Environmental Response, Compensation, and Liability Act Record 	<ul style="list-style-type: none"> • Provide 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 exhumation of targeted buried waste at the Accelerated Retrieval Project VIII facility and conduct planning and infrastructure activities for exhumations at Accelerated Retrieval Project IX retrieval area. • Characterize, package, certify, and temporarily store exhumed waste on site pending the resumption of operations at and shipments to the Waste Isolation Pilot Plant. • Maintain the remedies at Waste Area Group 2 (Test Reactor Area); Waste Area Group 4 (Central Facilities Area); Waste Area Group 5 (Power Burst Facility/Auxiliary Reactor Area); and Waste Area Group 6 (Experimental Breeder Reactor/BORAX). 	<ul style="list-style-type: none"> • The increase supports construction planning activities at Accelerated Retrieval Project IX, which is the final Accelerated Retrieval Project facility to be constructed.

- of Decision for the Waste Area Group 3 (Operable Unit 3-14) (Idaho Nuclear Technology and Engineering Center) tank farm soils and groundwater.
- Implement the Comprehensive Environmental Response, Compensation, and Liability Act Record of Decision for Waste Area Group 1 (Operable Unit 1-07B) TAN Groundwater.
 - Implement the Comprehensive Environmental Response, Compensation, and Liability Act Record of Decision for Waste Area Group 10 (Operable Unit 10-08) site wide ground water, miscellaneous sites, and future sites.
 - Implement the Comprehensive Environmental Response, Compensation, and Liability Act Record of Decision for Waste Area Group 10 (Operable unit 10-04) unexploded ordinance.
 - Maintain Radioactive Waste Management Complex infrastructure.
 - Maintain Idaho Comprehensive Environmental Response, Compensation, and Liability Act Disposal Facility operations.
 - Provide for site-wide environmental compliance.
- Implement 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.
 - Implement the Comprehensive Environmental Response, Compensation, and Liability Act Record of Decision for Waste Area Group 1 (Operable Unit 1-07B) TAN Groundwater.
 - Implement the Comprehensive Environmental Response, Compensation, and Liability Act Record of Decision for Waste Area Group 10 (Operable Unit 10-08) site wide ground water, miscellaneous sites, and future sites.
 - Implement the Comprehensive Environmental Response, Compensation, and Liability Act Record of Decision for Waste Area Group 10 (Operable unit 10-04) unexploded ordinance.
 - Maintain Radioactive Waste Management Complex infrastructure.
 - Maintain Idaho Comprehensive Environmental Response, Compensation, and Liability Act Disposal Facility operations.
 - Provide for site-wide environmental compliance.
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Idaho Community and Regulatory Support (PBS: ID-0100)

Overview

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

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

- 1) State of Idaho Department of Environmental Quality (Resource Conservation and Recovery Act compliance, and Air Quality Permitting Fees-Federal Facility Agreement/Consent Order) and Environmental Protection Agency support.
- 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.

Idaho Community and Regulatory Support (PBS: ID-0100)

Activities and Explanation of Changes

FY 2015 Enacted	FY 2016 Request	Explanation of Changes FY 2016 vs FY 2015
\$2,910	\$3,000	+\$90
<ul style="list-style-type: none"> • Continue 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. 	<ul style="list-style-type: none"> • Continue 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. 	<ul style="list-style-type: none"> • The funding increase supports groundwater monitoring activities, stakeholder outreach, and regulatory support.

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

Overview

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

The purpose of this project is to maintain and operate the Nuclear Regulatory Commission-licensed Independent Spent (Used) Fuel Storage Installation in accordance with license basis documents. This includes the management of approximately 15 metric tons of spent (used) nuclear fuel presently stored at Fort St. Vrain in Colorado and approximately 82 metric tons of spent (used) nuclear fuel presently stored on-site in the Three Mile Island Independent Spent (Used) Nuclear Fuel Storage Installation and payment of licensing fees for the Idaho Spent (Used) Fuel Facility that is designed and licensed, but not yet built. This project includes the line item construction project (15-D-410, Ft. St. Vrain Security Upgrades) for which the Mission Need (Critical Decision-0) was provided in July 2014, to implement license requirements at the facility.

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

Activities and Explanation of Changes

FY 2015 Enacted	FY 2016 Request	Explanation of Changes FY 2016 vs FY 2015
\$24,900	\$5,919	-\$18,981
<ul style="list-style-type: none"> • Provide payments to the Nuclear Regulatory Commission to implement license and for licensing-related activities related to Fort St. Vrain, Three Mile Island-2 Spent (Used) Nuclear Fuel, and Idaho Spent Fuel Facility. • Implement facility upgrades required to provide security for Fort St. Vrain Spent (Used) Nuclear Fuel. • Continue to operate and monitor Fort St. Vrain and Three Mile Island-2 Spent (Used) Nuclear Fuel. • Implement Nuclear Regulatory Commission license renewal for Three Mile Island-2. 	<ul style="list-style-type: none"> • Provide payments to the Nuclear Regulatory Commission to implement license and for licensing-related activities related to Fort St. Vrain, Three Mile Island-2 Spent (Used) Nuclear Fuel, and Idaho Spent Fuel Facility. • Provide security for Fort St. Vrain Spent (Used) Nuclear Fuel. • Continue to operate and monitor Fort St. Vrain and Three Mile Island-2 Spent (Used) Nuclear Fuel. • Implement Nuclear Regulatory Commission license renewal for Three Mile Island-2. • Complete facility upgrades required to provide security for Fort St. Vrain Spent (Used) Nuclear Fuel. 	<ul style="list-style-type: none"> • The decrease reflects planned completion of facility upgrades at Fort St. Vrain using funds provided in FY 2015.

**Idaho
Construction Summary (\$K)**

Total	Prior Years	FY 2014 Enacted	FY 2014 Current	FY 2015 Enacted	FY 2016 Request	FY 2016 vs FY 2015
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15-D-410, Ft. St. Vrain Security Upgrades (Idaho) (ID-0012B-N)

Total Estimate Cost (TEC)	TBD	0	0	0	TBD	0	TBD
Other Project Costs (OPC)	TBD	0	0	0	TBD	0	TBD
Total Project Cost (TPC) 15-D-410**	20,000	0	0	0	20,000	0	-20,000

**Final Distribution of \$20 million included in the FY 2015 Omnibus for Ft. St. Vrain security upgrades, including amounts for line item and operations activities to be identified in FY 2015 project data sheet to be submitted to Congress under separate cover.

Oak Ridge

Overview

Oak Ridge was placed on the National Priority List in 1989. Cleanup of the Oak Ridge Reservation is being conducted under the Comprehensive Environmental Response and Liability Act of 1980.

The Oak Ridge EM Integrated Program Plan outlines the near term priorities and strategy to conduct the cleanup of the Oak Ridge Reservation. This Program Plan supports the Department's Strategic Plan and overall goals of the EM Program to continue cleanup of the Manhattan Project and Cold War legacy.

The EM Program in Oak Ridge is comprised of three portfolios based on geographic locations, located within the boundary of the City of Oak Ridge. One-half million people live within a thirty mile radius of the Oak Ridge Reservation. These three portfolios are surrounded and delineated by surface waters and/or groundwater that transport contaminants off-site from past federal operations:

- The East Tennessee Technology Park site occupies approximately 5,000 acres adjacent to the Clinch River. Approximately 2,200 of these acres are to be addressed under the Comprehensive Environmental Response and Liability Act. The remainder of the area has been shown to not be contaminated and no further Comprehensive Environmental Response and Liability Act investigations will be necessary. The site is a former gaseous diffusion plant that was shut down in 1984. It is currently being prepared to be transitioned to a private sector industrial park.
- The Oak Ridge National Laboratory covers 3,300 acres, and currently conducts multi-program and energy research activities. Historically, the Oak Ridge National Laboratory supported both the defense production operations and civilian energy research efforts. Manhattan Project and Cold War era legacies co-exist with modernized laboratory facilities.
- The Y-12 National Security Complex site is 811 acres that was once a uranium processing facility, and now dismantles nuclear weapons components and serves as one of the nation's storehouses for special nuclear materials. Manhattan Project and Cold War era legacies co-exist with revitalized national security facilities at Y-12 National Security Complex. The Environmental Management Waste Management Facility (a Comprehensive Environmental Response and Liability Act disposal facility supporting cleanup of all three sites) is also located at Y-12 National Security Complex.

The Oak Ridge EM Integrated Program Plan addresses the scope required to remediate the cold war nuclear weapons production legacy while protecting worker and public health and the environment. The priorities and sequencing of scope is done in accordance with the regulatory framework and milestones contained within the Oak Ridge Federal Facility Agreement and Site Treatment Plan with the U.S. Environmental Protection Agency and/or the State of Tennessee.

Direct maintenance and repair at the East Tennessee Technology Park is estimated to be \$10,868,000 in FY 2016.

Highlights of the FY 2016 Budget Request

The following represents the most significant near-term projects in the Oak Ridge Environmental Management Program FY 2016 Budget request:

- Maintains EM facilities in a safe, compliant and secure manner
- Operates EM waste management facilities such as on-site disposal facility, sanitary landfills, liquid, gaseous and waste operations at Oak Ridge National Laboratory
- Continues demolition of Buildings K-27 and K-31
- Continues direct shipment of Consolidated Edison Uranium Solidification Project material
- Continues contact and remote-handled debris processing at the Transuranic Waste Processing Facility
- Continues design for Mercury Treatment Facility at Y-12 National Security Complex
- Continues technology maturation of the Sludge Processing Facility Buildout project
- Continues development of Comprehensive Environmental Response, Compensation, and Liability Act documentation for the new On-Site Disposal Facility
- Continues study and development of Mercury characterization techniques and remediation technologies

The FY 2016 request includes funding for one line item construction projects, the Outfall 200 Mercury Treatment Facility (\$6,800,000).

- The mission of the Outfall 200 Mercury Treatment Facility is to construct a Water Treatment Facility to remove mercury from Upper East Fork Poplar Creek which leaves the site, and to prepare for the environmental cleanup of the Y-12 National Security Complex site. The \$6,300,000 supports design activities (Project Engineering and Design) and \$500,000 supports other project costs.

FY 2015 and FY 2016 Key Milestones/Outlook

- (September 2015) Complete preliminary design for the new Mercury Treatment Facility at Outfall 200
- (September 2016) Complete design for the new Mercury Treatment Facility at Outfall 200
- (September 2016) Complete processing of transuranic contact-handled debris
- (December 2016) Demolish K-31 gaseous diffusion building

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.
- 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 in the Site Treatment Plan to complete treatment of all Oak Ridge mixed low-level wastes with a known disposition path by 2012 (accomplished in 2011). This order established milestones for processing and shipment of transuranic wastes.
- 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.

Contractual Framework

Program planning and management at Oak Ridge is conducted through the issuance and execution of contracts to large and small businesses. Oak Ridge develops near- and long- term planning approaches in order to develop contract strategies and program/project plans at a more detailed level. Selected contractors then execute these plans to complete cleanup on schedule. The three major contracts for performing environmental management cleanup at Oak Ridge include:

- URS|CH2M Oak Ridge LLC contract for decontamination and decommissioning of surplus buildings, and legacy soil and groundwater remediation at the East Tennessee Technology Park (former uranium-enrichment gaseous diffusion plant), as well as, the surveillance and maintenance of excess facilities, operations of waste treatment facilities and water quality activities at Oak Ridge National Laboratory and Y-12 National Security Complex, covering the period 2011 - 2016, with an option to 2020.
- Wastren Advantage, Inc., a small business contract, for treatment, processing and disposition packaging of transuranic waste at the Transuranic Waste Processing Center. The cost plus award fee term contract has a base period of performance of January 2010 - January 2013. The option under the contract for performance from January 2013- January 2015 has been exercised. A Source Evaluation Board is currently underway with the expectation of awarding a new contract in 2015. A six month extension will be granted to the Wastren contract.
- Isotek Systems LLC contract to complete the disposition of Uranium-233 material. The Isotek contract is a cost plus fixed fee term contract for performance from October 2003 - June 2007. The Option periods through December 2014

have been exercised as a fixed price contract. There are two remaining options for processing and facility stabilization that run through August 2024. These options have not yet been exercised.

- An Architect-Engineering Services contract is being competed for the design phase of the Sludge Processing Facility Buildouts project. The contract scope will include technology maturation, design, and Title III support during the construction phase. The contract award is planned for FY 2015.

Strategic Management

The Oak Ridge cleanup strategies consist of near-term goals to pursue: (1) dispositioning the uranium-233 inventory currently stored at the Oak Ridge National Laboratory; (2) continuing to process transuranic debris; (3) designing and constructing a water treatment system at Y-12 National Security Complex to reduce mercury flux and prepare for future demolition and remedial actions; and (4) completing demolition of Buildings K-27 and K-31 at the East Tennessee Technology Park.

A key component to cleanup success in Oak Ridge is continued partnering with regulatory agencies and stakeholders. The Oak Ridge Federal Facility Agreement and the Site Treatment Plan were enacted among DOE, the Tennessee Department of Environment and Conservation and/or U.S. Environmental Protection Agency to promote cooperation. Milestones for completion of cleanup efforts are established and provide a mechanism for ensuring that Oak Ridge cleanup priorities are developed in collaboration with all stakeholders to reduce risk and protect public health and the environment. In addition, collaboration occurs on an annual basis with the Oak Ridge Reservation Site Specific Advisory Board and Oak Ridge area stakeholders to ensure that program priorities are reviewed, and as appropriate revised, to reflect community input.

The FY 2016 Request is maintaining the new control point within the Uranium Enrichment Decontamination and Decommissioning Fund Appropriation established in the FY 2015 Congressional submission in order to better manage requirements for Pension and Community and Regulatory activities. 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.

Oak Ridge

Funding (\$K)

FY 2014 Enacted	FY 2014 Current	FY 2015 Enacted	FY 2016 Request	FY 2016 vs FY 2015
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Defense Environmental Cleanup

Oak Ridge

OR Cleanup and Disposition

OR-0013B / Solid Waste Stabilization and Disposition-2012	83,220	83,220	136,130	60,500	-75,630
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OR Nuclear Facility D&D

OR-0041 / Nuclear Facility D&D-Y-12	39,837	40,328	44,066	41,800	-2,266
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OR-0042 / Nuclear Facility D&D-Oak Ridge National Laboratory	38,387	37,896	38,387	40,850	+2,463
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OR-0043 / Nuclear Facility D&D-East Tennessee Technology Park (Defense)	100	100	102	108	+6
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Subtotal, OR Nuclear Facility D&D	78,324	78,324	82,555	82,758	+203
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OR Reservation Community and Regulatory Support

OR-0100 / Oak Ridge Reservation Community & Regulatory Support (Defense)	4,365	4,365	4,365	4,400	+35
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OR Technology Development and Deployment

OR-TD-0100 / Technology Development Activities - Oak Ridge	4,091	3,960	0	2,800	+2,800
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U233 Disposition Program

OR-0011D / U233 Disposition Program	45,000	45,000	0	26,895	+26,895
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Total, Oak Ridge	215,000	214,869	223,050	177,353	-45,697
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Safeguards and Security

OR-0020 / Safeguards and Security	18,800	18,800	16,382	17,228	+846
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Total, Defense Environmental Cleanup	233,800	233,669	239,432	194,581	-44,851
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**Environmental Management/
Oak Ridge**

	FY 2014 Enacted	FY 2014 Current	FY 2015 Enacted	FY 2016 Request	FY 2016 vs FY 2015
Non-Defense Environmental Cleanup					
Small Sites					
Oak Ridge					
OR-0104 / Community and Regulatory (Non-Defense)	0	0	2,119	0	-2,119
Uranium Enrichment Decontamination and Decommissioning Fund					
Oak Ridge					
Oak Ridge					
OR-0040 / Nuclear Facility D&D-East Tennessee Technology Park (D&D Fund)	179,741	180,244	167,898	154,235	-13,663
Pension and Community and Regulatory Support					
Oak Ridge					
OR-0102 / East Tennessee Technology Park Contract/Post-Closure Liabilities/Administration	16,000	15,497	21,693	16,856	-4,837
Total, Uranium Enrichment Decontamination and Decommissioning Fund	195,741	195,741	189,591	171,091	-18,500
Total, Oak Ridge	429,541	429,410	431,142	365,672	-65,470

Oak Ridge Explanation of Major Changes (\$K)

FY 2016 vs FY 2015

Defense Environmental Cleanup

Oak Ridge

OR Cleanup and Disposition

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

- Decrease reflects reduced activities related to the Sludge Processing Facility Build out project and scope requirements for U233 are broken out in OR-0011D in FY 2016. -75,630

OR Nuclear Facility D&D

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

- Decrease reflects planned progress on the Outfall 200 Mercury Treatment Facility line item construction project. -2,266

OR-0042 / Nuclear Facility D&D-Oak Ridge National Laboratory

- Increase reflects additional funding requirements for waste management activities and surveillance and maintenance on aging systems and infrastructure upgrades for Environmental Management-owned facilities at the Oak Ridge National Laboratory. +2,463

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

- No significant change. +6

OR Reservation Community and Regulatory Support

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

- No significant change. +35

OR Technology Development and Deployment

OR-TD-0100 / Technology Development Activities - Oak Ridge

- Increase is for development of mercury characterization techniques and remediation technologies. +2,800

U233 Disposition Program

OR-0011D / U233 Disposition Program

- Increase due to inclusion of U233 Disposition funding within PBS OR-0013B that was funded in PBS OR-0011D in the FY 2015 Omnibus appropriations; FY 2016 request reflects planned progress toward completion of the U233 direct disposition campaign. +26,895

FY 2016 vs FY 2015

Safeguards and Security

OR-0020 / Safeguards and Security

- The increased funding supports improvements in cybersecurity. +846

Non-Defense Environmental Cleanup

Small Sites

OR-0104 / Community and Regulatory (Non-Defense)

- Reduction reflects planned progress on these activities. -2,119

Uranium Enrichment Decontamination and Decommissioning Fund

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

- Decrease reflects completion of the K-25 Building demolition project. -13,663

Pension and Community and Regulatory Support

OR-0102 / East Tennessee Technology Park Contract/Post-Closure Liabilities/Administration

- Decrease reflects reduced funding requirements for contractor post-retirement life, medical benefits, and pensions. -4,837

Total, Oak Ridge **-65,470**

Solid Waste Stabilization and Disposition (PBS: OR-0013B)

Overview

This PBS is within the Defense Environmental Cleanup appropriation.

This PBS funds the storage, characterization, and processing for the disposition of the Oak Ridge Reservation transuranic waste. Contact-handled transuranic debris processing was initiated in FY 2006 and processing of remote-handled transuranic debris began in FY 2008 at the Transuranic Waste Processing Center. In FY 2016, processing of legacy transuranic debris will continue, supporting certification of waste for disposal. The inventory of processed and certified transuranic waste will be safely stored at Oak Ridge pending the completion of recovery activities underway at the Waste Isolation Pilot Plant and resumption of waste emplacement operations and receipt of off-site shipments.

In addition, this PBS includes one line item construction project – 15-D-405, Sludge Processing Facility Buildouts. The Sludge Processing Facility Buildouts project will provide the facilities required to retrieve, process, ship, and disposition legacy remote-handled transuranic sludge and associated supernate tank waste currently in storage at Oak Ridge National Laboratory. In FY 2016, technology maturation activities will continue to support future regulatory commitments for facility construction and sludge processing.

This PBS also funds Resource Conservation and Recovery Act storage, 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 Y-12 National Security Complex sites.

Solid Waste Stabilization and Disposition-2012 (PBS: OR-0013B)

Activities and Explanation of Changes

FY 2015 Enacted	FY 2016 Request	Explanation of Changes FY 2016 vs FY 2015
\$136,130	\$60,500	-\$75,630
<ul style="list-style-type: none"> Continue to manage and store mixed low-level and transuranic waste in compliance with regulations. Maintain regulatory safety basis documents and permits and operate waste storage facilities at the East Tennessee Technology Park and the Oak Ridge National Laboratory. Continue transfers of transuranic waste to the Transuranic Waste Processing Facility located at the Oak Ridge National Laboratory. 	<ul style="list-style-type: none"> Continue to manage and store transuranic waste in compliance with regulations. Maintain regulatory and safety basis documents and permits and operate waste storage facilities at the Oak Ridge National Laboratory. Continue transfers of transuranic waste to the Transuranic Waste Processing Facility and continue processing and certification of transuranic debris waste to meet regulatory milestones. 	<ul style="list-style-type: none"> Decrease reflects reduced activities related to the Sludge Processing Facility Build out project and scope requirements for U233 are broken out in OR-0011D in FY 2016.

- Award new treatment, processing, and disposition contract and continue processing and disposal of contact-handled and remote-handled transuranic waste to meet regulatory milestones.
 - Treat and ship mixed low-level waste to off-site disposal.
 - Continue design and prepare for future construction of the Sludge Processing Facility Build-Out at the Transuranic Waste Processing Center (15-D-405) as progress toward Critical Decision 2.
 - Remove waste from a seeping reactor pool in Building 3042 at the Oak Ridge National Laboratory, dispose of the waste and stabilize the pool.
 - Complete processing of legacy contact-handled debris.
 - Treat and ship mixed low-level waste to off-site disposal.
 - Continue technology maturation for the Sludge Processing Facility Buildouts project using prior year funding.
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Nuclear Facility D&D-Y-12 (PBS: OR-0041)

Overview

This PBS is within the Defense Environmental Cleanup appropriation.

This PBS funds the cleanup at the Y-12 National Security Complex, which is a contributor of mercury to the Upper East Fork Poplar Creek that flows through the City of Oak Ridge. The near-term focus of work at Y-12 National Security Complex includes: designing and constructing a water treatment system to reduce mercury flux; surveillance and maintenance of current surplus facilities awaiting future decontamination and decommissioning; and groundwater and surface water monitoring to assess the effectiveness of completed cleanup actions that support future remediation decisions identified in Comprehensive Environmental Response and Liability Act Records of Decision.

Funds also support the cost-effective cleanup of the Oak Ridge Reservation through the operation of the Environmental Management Waste Management Facility (maximum capacity of 2,200,000 cubic yards) and the Oak Ridge Reservation Landfills for disposition of waste from all on-site DOE program offices. A total of \$18,000,000 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. A follow-on Environmental Management Waste Disposal Facility will be needed once the capacity of the existing on-site disposal facility is reached. Planning and preparation activities have been initiated to ensure a follow-on facility is in place when the existing facility is full.

This PBS also includes one Line Item Construction project; the Outfall 200 Mercury Treatment Facility. The Outfall 200 Mercury Treatment Facility will provide treatment of storm sewer water discharges through the Outfall 200 Mercury Treatment Facility for the removal of mercury. In FY 2016, design of the Outfall 200 Mercury Treatment Facility will continue to support start of construction.

Nuclear Facility D&D-Y-12 (PBS: OR-0041)

Activities and Explanation of Changes

FY 2015 Enacted	FY 2016 Request	Explanation of Changes FY 2016 vs FY 2015
\$44,066	\$41,800	-\$2,266
<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> Comply with all requirements for Environmental Management Waste Management Facility operations; groundwater and surface water monitoring; surveillance and maintenance of waste sites and inactive facilities; and preparation of an annual remediation effectiveness report. Operate Environmental Management Waste 	<ul style="list-style-type: none"> Decrease reflects planned progress on the Outfall 200 Mercury Treatment Facility line item construction project.

monitoring; surveillance and maintenance of waste sites and inactive facilities; and preparation of an annual remediation effectiveness report.

- Operate Environmental Management Waste Management Facility and other Oak Ridge Reservation Landfills to receive wastes from demolition and remedial activities in accordance with DOE Order requirements for groundwater and surface water monitoring, including Environmental Management Waste Management Facility waste acceptance criteria attainment activities.
- Complete preliminary design for the Outfall 200 Water Treatment Facility.
- Continue monitoring of off-site groundwater in accordance with regulatory agreements by sampling wells and surface water.
- Prepare Comprehensive Environmental Response, Compensation, and Liability Act Record of Decision and initiate planning activities for a new, on-site Comprehensive Environmental Response, Compensation, and Liability Act disposal cell.

Management Facility and other Oak Ridge Reservation Landfills to receive wastes from demolition and remedial activities.

- Continue design of the Outfall 200 Water Treatment Facility.
- Continue monitoring of off-site groundwater in accordance with regulatory agreements by sampling wells and surface water.
- Continue Comprehensive Environmental Response, Compensation, and Liability Act documentation and planning for the new Comprehensive Environmental Response, Compensation, and Liability Act On-Site Disposal Facility.

Nuclear Facility D&D-Oak Ridge National Laboratory (PBS: OR-0042)

Overview

This PBS is within the Defense Environmental Cleanup appropriation.

This PBS funds the cleanup of the Oak Ridge National Laboratory which includes operations and surveillance and maintenance of liquid, gaseous, and process waste operations systems in support of the Office of Environmental Management and Office of Science missions. This includes more than 200 inactive facilities (including several inactive research reactors and isotope production facilities), three contaminated groundwater plumes, contaminated surface water, and numerous areas of soil and sediment contamination awaiting future decontamination, decommissioning, and environmental remediation actions. The activities performed under this PBS will ensure worker safety and mitigate the potential for contaminant release and continue environmental monitoring of surface and groundwater systems to support future remediation decisions identified in the Comprehensive Environmental Response and Liability Act Records of Decision.

Nuclear Facility D&D-Oak Ridge National Laboratory (PBS: OR-0042)

Activities and Explanation of Changes

FY 2015 Enacted	FY 2016 Request	Explanation of Changes FY 2016 vs FY 2015
\$38,387	\$40,850	+\$2,463
<ul style="list-style-type: none"> • Monitor groundwater and surface water in accordance with the Melton Valley and Bethel Valley Comprehensive Environmental Response Compensation and Liability Act Records of Decision. • 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. 	<ul style="list-style-type: none"> • Maintain liquid, gaseous and process waste operations systems in support of the Office of Science and Environmental Management missions. • Monitor groundwater and surface water in accordance with the Melton Valley and Bethel Valley Comprehensive Environmental Response and Liability Act Records of Decision. • Perform surveillance and maintenance required by the Melton Valley Comprehensive Environmental Response and Liability Act Record of Decision and for inactive facilities and reactors at the Oak Ridge National Laboratory. 	<ul style="list-style-type: none"> • Increase reflects additional funding requirements for waste management activities and surveillance and maintenance on aging systems and infrastructure upgrades for Environmental Management-owned facilities at the Oak Ridge National Laboratory.

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

Overview

This PBS is within the Defense Environmental Cleanup appropriation.

This PBS, in combination with PBS OR-0040, Nuclear Facility Decontamination and Decommissioning East Tennessee Technology Park (Uranium Enrichment Decontamination and Decommissioning Fund) will accomplish the closure of East Tennessee Technology Park which will result in a significant reduction in the Department’s liability. This PBS funds decontamination, decommissioning, and demolition for the East Tennessee Technology Park facilities that were not involved in the gaseous diffusion process to enrich uranium.

This PBS also provides for the surveillance and maintenance required to maintain the Centrifuge facilities in accordance with safety basis documents while they await decontamination and decommissioning.

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

Activities and Explanation of Changes

FY 2015 Enacted	FY 2016 Request	Explanation of Changes FY 2016 vs FY 2015
\$102	\$108	+\$6
<ul style="list-style-type: none"> Perform surveillance and maintenance of the Centrifuge Facilities complex, to maintain it in a safe and secure condition in accordance with DOE orders. 	<ul style="list-style-type: none"> Perform surveillance and maintenance of the Centrifuge Facilities complex, to maintain it in a safe and secure condition in accordance with DOE Orders. 	<ul style="list-style-type: none"> No significant change.

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

Overview

This PBS is within the Defense Environmental Cleanup appropriation.

This PBS funds a Tennessee non-regulatory Agreement-In-Principle grant, the Tennessee regulatory Federal Facility Agreement grant and the activities of the Oak Ridge Site Specific Advisory Board. The Agreement-In-Principle grant supports the Tennessee Department of Environment and Conservation's independent oversight and monitoring of DOE activities taking place both on-site and off-site associated with the Oak Ridge DOE programs. The Federal Facility Agreement regulatory grant provides funding for regulatory requirements of cleanup activities under the interagency Federal Facility Agreement under Comprehensive Environmental Response and Liability Act. The support for the Site Specific Advisory Board is chartered under the Federal Advisory Committee Act.

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

Activities and Explanation of Changes

FY 2015 Enacted	FY 2016 Request	Explanation of Changes FY 2016 vs FY 2015
\$4,365	\$4,400	+\$35
<ul style="list-style-type: none"> 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 support activities; and emergency management exercises. Continue activities by the Site Specific Advisory Board sponsored by DOE-EM to assist in public participation activities and outreach assistance. 	<ul style="list-style-type: none"> 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; oversight of DOE facility surveillance walkthroughs; Federal Facility Agreement support activities; and emergency management exercises. Continue activities by the Site Specific Advisory Board sponsored by DOE-EM to assist in public participation activities and outreach assistance. 	<ul style="list-style-type: none"> No significant change.

U233 Disposition Program (PBS: OR-0011D)

Overview

This PBS is within the Defense Environmental Cleanup appropriation.

Oak Ridge maintains the DOE inventory of uranium-233 which is currently stored in Building 3019 at the Oak Ridge National Laboratory. Uranium-233 is a special nuclear material which requires strict safeguards and security controls to protect against access. The Defense Nuclear Facilities Safety Board issued Recommendation 97-1, *Safe Storage of Uranium-233*, which identified concerns related to long-term storage of the inventory in Building 3019. Disposing of the uranium-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 inventory.

The current strategy consists of the direct disposition of Consolidated Edison Uranium Solidification Project material, which represents about half of the containers in the inventory, and dissolution, down-blending, and solidification of the remainder of the inventory in Building 2026. Initiation of direct disposal of the Consolidated Edison Uranium Solidification Project material is pending resolution of stakeholder concerns. If stakeholder concerns are satisfied, Oak Ridge will execute off-site disposal of the Consolidated Edison Uranium Solidification Project material. If Consolidated Edison Uranium Solidification Project disposition continues to be delayed, the project intends to perform activities in support of preparing Building 2026 for processing of the material from Building 3019 that cannot be directly dispositioned.

U233 Disposition Program (PBS: OR-0011D)

Activities and Explanation of Changes

FY 2015 Enacted	FY 2016 Request	Explanation of Changes FY 2016 vs FY 2015
0	\$26,895	+\$26,895
<ul style="list-style-type: none"> • Per FY 2015 Omnibus enactment, funding for this project is included within PBS OR-0013. The FY 2015 funding for the U233 disposition project is \$41,600,000. • Continue required surveillance and maintenance and other activities at Building 3019 to maintain a safe and secure condition. • Continue Uranium-233 disposition activities in support of Consolidated Edison Uranium Solidification Project material direct disposition from Building 3019 inventory to offsite disposal. • Perform activities, such as modifying hot cells and 	<ul style="list-style-type: none"> • Continue required surveillance and maintenance and other activities at Building 3019 to maintain a safe and secure condition. • Continue direct disposition of Consolidated Edison Uranium Solidification Project material from the Building 3019 inventory to offsite disposal. 	<ul style="list-style-type: none"> • Increase due to inclusion of U233 Disposition funding within PBS OR-0013B that was funded in PBS OR-0011D in the FY 2015 Omnibus appropriations; FY 2016 request reflects planned progress toward completion of the U233 direct disposition campaign.

readiness reviews, in support of preparing Building 2026 for dissolution and down-blending of material from Building 3019 that cannot be directly dispositioned.

Safeguards and Security (PBS: OR-0020)

Overview

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

The Oak Ridge Environmental Management Safeguards and Security Program provides stable, reliable security services to support the site’s cleanup program. These funds also implement Homeland Security Presidential Directive-12 identification credentials for all employees to sustain a reliable, cleared workforce.

Safeguards and Security (PBS: OR-0020)

Activities and Explanation of Changes

FY 2015 Enacted	FY 2016 Request	Explanation of Changes FY 2016 vs FY 2015
\$16,382	\$17,228	+\$846
<ul style="list-style-type: none"> • Provide safeguard and security services for the following major facilities: K-27, K-1037, Centrifuge Facilities, Classified Burial Grounds, Environmental Management Waste Management Facility, Transuranic Waste Processing Facility, and the overall East Tennessee Technology Park will be applied in the areas of: protection program management, emergency response, Physical Security, information protection, Protective Force, Personnel Security, Cyber Security and Nuclear Material Control and Accountability. • Site security services will be applied using a graded, risk-based management approach supporting site cleanup mission priorities and protecting government equipment, materials, information, and the site workforce. 	<ul style="list-style-type: none"> • Provide safeguard and security services for the following major facilities: K-27, K-1037, Centrifuge Facilities, Classified Burial Grounds, Environmental Management Waste Management Facility, Transuranic Waste Processing Facility, and the overall East Tennessee Technology Park will be applied in the areas of: protection program management, emergency response, Physical Security, information protection, Protective Force, Personnel Security, Cyber Security and Nuclear Material Control and Accountability. • Site security services will be applied using a graded, risk-based management approach supporting site cleanup mission priorities and protecting government equipment, materials, information, and the site workforce. 	<ul style="list-style-type: none"> • The increased funding supports improvements in cybersecurity.

Technology Development Activities (PBS: OR-TD-0100)

Overview

This PBS is within the Defense Environmental Cleanup appropriation.

The Technology Development and Deployment program focuses on resolving technical challenges through the application of science and innovation to develop practical solutions for environmental cleanup in response to the highest priority needs of the Office of Environmental Management sites. The goal is to improve the technical maturity of current baseline technologies, to develop cost-effective alternative technologies, and to improve or to provide the next-generation technologies for insertion into program activities. EM is enhancing its technology development and deployment efforts with a coordinated two-prong approach where select projects will be managed at Headquarters while others will be managed at the field sites:

- Longer-term activities with low technology readiness levels (higher development risks) are managed at Headquarters; and
- Shorter-term activities with higher technology readiness levels are managed at the sites where the technology will result in direct mission-related benefits.

The largest environmental risks on the Department of Energy Oak Ridge Reservation stem from ongoing offsite release of mercury from the Y-12 National Security Complex. Downstream bioaccumulation of mercury in fish adds additional risk to the public as well as the potential for mercury to migrate into and through other media such as groundwater which poses challenges to environmental remediation and management. To protect human health and the environment, the Department of Energy is initiating a series of early actions that can be taken pending demolition of the former mercury process buildings. The challenges associated with the remediation of mercury in soil and water is unique across the complex in both scale and complexity. Current mercury discharges from the Y-12 National Security Complex exceed regulatory standards. Early actions are required in order to address mercury sources; characterize areas that are accessible pending building demolition; and treat surface water to meet regulatory standards at the site boundary. The goal of this technology development and deployment investment is to reduce the overall remediation scope, schedule, and cost through improved understanding of mercury transport through the environmental media; and to develop characterization, removal, and waste treatment/disposition techniques.

Technology Development Activities - Oak Ridge (PBS: OR-TD-0100)

Activities and Explanation of Changes

FY 2015 Enacted	FY 2016 Request	Explanation of Changes FY 2016 vs FY 2015
0	\$2,800	+\$2,800

The following activities will be performed using prior year funding:

- Plan, develop, evaluate, and demonstrate mercury characterization techniques and remediation technologies.
 - Begin comparative testing and demonstration of multiple technologies to solidify/stabilize or otherwise treat mercury debris, to be performed in conjunction with the Applied Field Research Initiative for Remediation of Mercury and Industrial Contaminants at Oak Ridge National Laboratory.
 - Build upon characterization and mercury flux assessments, along with improved conceptual models, to refine understanding and numerical models of reactive fate and transport of mercury (to be performed in conjunction with the Applied Field Research Initiative for Remediation of Mercury and Industrial Contaminants and EM's Advanced Simulation Capability for Environmental Management program).
 - Plan, develop, evaluate, and demonstrate Mercury characterization techniques and remediation technologies.
 - Begin comparative testing and demonstration of different technologies to solidify/stabilize or otherwise treat mercury debris.
 - Build upon characterization and mercury flux assessments, along with improved conceptual models, to refine understanding and numerical models of reactive fate and transport of mercury.
 - Increase is for development of mercury characterization techniques and remediation technologies.
-

Community and Regulatory (Non-Defense) (PBS: OR-0104)

Overview

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

This PBS funds activities which support preserving the historical significance of the former K-25 site. The K-25 Building was once the largest facility in the world, over 44 acres under roof, and was a significant part of the Manhattan Project.

Community and Regulatory (Non-Defense) (PBS: OR-0104)

Activities and Explanation of Changes

FY 2015 Enacted	FY 2016 Request	Explanation of Changes FY 2016 vs FY 2015
\$2,119	0	-\$2,119
<ul style="list-style-type: none"> • Complete development of the Virtual Museum. • Complete K-25 facility slab feasibility study. 	<ul style="list-style-type: none"> • No activity planned. 	<ul style="list-style-type: none"> • Reduction reflects planned progress on these activities.

Nuclear Facility D&D-East Tennessee Technology Park (D&D Fund) (PBS: OR-0040)

Overview

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

This PBS funds decontamination and decommissioning 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 acres at the site contain potential contamination, including known groundwater contaminant plumes from former burial grounds and contaminated soils. The decommissioning and demolition of the former K-25 Gaseous Diffusion Process Building was completed ahead of schedule in this PBS in Fiscal Year 2014. The contractor incentive fee for early completion will be funded in Fiscal Year 2016 within this PBS. Currently K-31 demolition and K-27 deactivation and demolition are the top priorities. Demolition of both facilities would result in a large footprint reduction. The scope of the K-31 Building demolition is to demolish the building structures, and appropriately characterize, package and transport associated wastes. K-27 Building is a high priority due to worker safety concerns stemming from the continued deteriorating condition of the building. The scope of the K-27 Building subproject is to abate the hazardous materials; remove the high-risk process equipment; demolish the building structures; and appropriately characterize, package, transport and dispose of all the associated wastes. The scope of this PBS also includes: remedial actions (including planning, removal actions, and development of Comprehensive Environmental Response and Liability Act documentation); the decontamination and decommissioning of other facilities (including planning, deactivation of utilities, asbestos and other hazardous material abatement, equipment dismantlement and disposal, structure demolition and waste disposition); site infrastructure services including fire protection; utility services; environmental, safety, and health programs; real property management; and capital improvements and repairs.

The end-state of the majority of the site will be appropriate for commercial reuse.

Nuclear Facility D&D-East Tennessee Technology Park (D&D Fund) (PBS: OR-0040)

Activities and Explanation of Changes

FY 2015 Enacted	FY 2016 Request	Explanation of Changes FY 2016 vs FY 2015
\$167,898	\$154,235	-\$13,663
<ul style="list-style-type: none"> Maintain East Tennessee Technology Park in a safe and secure condition. Conduct base operations activities at the East Tennessee Technology Park to provide infrastructure and support to cleanup projects. Continue Building K-27 deactivation activities. Perform pre-demolition/demolition activities on selected remaining facilities, including the former K-31 gaseous diffusion plant facility. 	<ul style="list-style-type: none"> Maintain East Tennessee Technology Park in a safe and secure condition. Conduct base operations activities at the East Tennessee Technology Park to provide infrastructure and support to cleanup projects. Continue K-27 Building deactivation activities. Continue K-31 Building demolition and waste disposal activities. Perform pre-demolition/demolition activities on 	<ul style="list-style-type: none"> Decrease reflects completion of the K-25 Building demolition project.

selected remaining facilities.

East Tennessee Technology Park Contract/Post-Closure Liabilities/Administration (PBS: OR-0102)

Overview

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

This PBS funds ongoing, 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.

East Tennessee Technology Park Contract/Post-Closure Liabilities/Administration (PBS: OR-0102)

Activities and Explanation of Changes

FY 2015 Enacted	FY 2016 Request	Explanation of Changes FY 2016 vs FY 2015
\$21,693	\$16,856	-\$4,837
<ul style="list-style-type: none"> Continue funding of contractor liabilities associated with post-retirement life, medical benefits and pensions. 	<ul style="list-style-type: none"> Continue funding of contractor liabilities associated with post-retirement life, medical benefits and pensions. 	<ul style="list-style-type: none"> Decrease reflects reduced funding requirements for contractor post-retirement life, medical benefits, and pensions.

**Oak Ridge
Capital Summary (\$K)**

Total	Prior Years	FY 2014 Enacted	FY 2014 Current	FY 2015 Enacted	FY 2016 Request	FY 2016 vs FY 2015
Capital Operating Expenses Summary (including (Major Items of Equipment (MIE))						
Capital Equipment > \$500K (including MIE)	0	0	0	0	0	0
Plant Projects (GPP and IGPP) (<\$10M)	0	0	2,916	2,916	0	0
Total, Capital Operating Expenses	0	0	2,916	2,916	0	0
Capital Equipment > \$500K (including MIE)						
	0	0	0	0	0	0
Total, Capital Equipment (including MIE)	0	0	2,916	2,916	0	0
Plant Projects (GPP and IGPP) (Total Estimated Cost (TEC) <\$10M)						
<u>Oak Ridge</u>						
SWSA 5	0	0	2,916	2,916	0	0
Total, Oak Ridge	0	0	2,916	2,916	0	0
Total, Plant Projects (GPP and IGPP) (Total Estimated (TEC) <\$10M)	0	0	2,916	2,916	0	0
Total, Capital Summary	0	0	2,916	2,916	0	0

**Oak Ridge
Construction Summary (\$K)**

Total	Prior Years	FY 2014 Enacted	FY 2014 Current	FY 2015 Enacted	FY 2016 Request	FY 2016 vs FY 2015 Enacted
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14-D-403, Outfall 200 Mercury Treatment Facility, OR (OR-0041)

Total Estimate Cost (TEC)	TBD	0	4,608	4,608	9,400	6,800	-2,600
Other Project Costs (OPC)	TBD	0	5,200	5,200	2,800	500	-2,300
Total Project Cost (TPC) 15-D-403	TBD	0	9,808	9,808	12,200	7,300	-4,900

Sludge Build Out, OR (OR-0013B)

Oak Ridge Solid Waste (OR-0013B)							
Total Estimate Cost (TEC)	TBD	0	0	0	0	0	0
Other Project Costs (OPC)	TBD	15,605	7,000	7,000	0	0	0
Subtotal, Sludge Build Out, OR-0013B	TBD	15,605	7,000	7,000	0	0	0

15-D-405, Sludge Build Out, OR (OR-0013B)

Total Estimate Cost (TEC)	TBD	0	0	0	4,200	0	-4,200
Other Project Costs (OPC)	TBD	0	0	0	8,900	0	-8,900
Subtotal, 15-D-405, Sludge Build Out, OR (OR-0013B)	TBD	0	0	0	13,100	0	-13,100
Total Project Cost (TPC) 15-D-405	TBD	15,605	7,000	7,000	13,100	0	-13,100

14-D-403
Outfall 200 Mercury Treatment Facility
Y-12 National Security Complex, Oak Ridge Tennessee
Project is for Design and Construction

1. Summary and Significant Changes

Significant Changes:

This Project Data Sheet is an update of the FY 2015 President’s Budget Request Data Sheet.

Critical Decision-0, Approval of Mission Need, was approved on March 17, 2014.

Summary:

The most recent DOE O 413.3B approved Critical Decision is CD-0 that was approved by the Acquisition Executive in March 2014. Critical Decision-1 approval for this project is anticipated during the second quarter of FY 2015.

A Total Project Cost for the project will be determined as the design matures and upon final baseline validation and approval at Critical Decision-2.

A Federal Project Director has been assigned to the project and has approved this data sheet. The Federal Project Director is currently certified at Level II. The Federal Project Director is pursuing Level III certification approval in Fiscal Year 2015.

This project will design and construct a Mercury Treatment Facility at Outfall 200 having a total footprint of approximately 30,000 square feet. The treatment facility will consist of outdoor tanks, piping, and transfer and treatment equipment along with an approximately 15,000 square foot metal building to house weather-sensitive equipment and controls. The facility will include a building, road and utility relocations, foundations, parking, and fencing. The facility will accomplish mercury removal through a combination of unit operations, including grit removal, chemical precipitation, clarification and media filtration.

The Total Estimated Cost funds being requested in Fiscal Year 2016 will be used to continue development of the preliminary design.

2. Critical Milestone History

Request	CD-0	Conceptual Design Complete	CD-1	CD-2	Final Design Complete	CD-3	D&D Complete	CD-4
FY 2015	2Q FY2014 ^a	N/A	2Q FY 2015	4Q FY2017	1Q FY2017	TBD	N/A	TBD
FY 2016	3/17/2014 ^a	1Q FY2015	2Q FY 2015	TBD	TBD	TBD	N/A	TBD

^a Critical Decision-0 approval issued on 7/20/2007 for the aggregate cleanup of the Y-12 National Security Site. Conceptual Design activities for this project were not initiated until FY 2012. An updated, project-specific Critical Decision-0 was approved on March 17, 2014.

CD-0 – Approve Mission Need for a construction project with a conceptual scope and cost range

Conceptual Design Complete – Actual date the conceptual design was completed (if applicable)

CD-1 – Approve Design Scope and Project Cost and Schedule Ranges

CD-2 – Approve Project Performance Baseline

Final Design Complete – Estimated/Actual date the project design will be/was complete(d)

CD-3 – Approve Start of Construction

D&D Complete – Completion of D&D work (see Section 9)

CD-4 – Approve Start of Operations or Project Closeout

PB – Indicates the Performance Baseline

3. Project Cost History

	TEC, Design	TEC, Construction	TEC, Total	OPC, Except D&D	OPC, D&D	OPC, Total	TPC
FY 2015	34,500	TBD	TBD	TBD	0	TBD	TBD
FY 2016	34,500	TBD	TBD	TBD	0	TBD	TBD

4. Project Scope and Justification

Scope

The scope of this project is to design and construct a Mercury Treatment Facility at Outfall 200 having a footprint of approximately 30,000 square feet. The treatment facility will consist of outdoor tanks, piping, and transfer and treatment equipment along with an approximately 15,000 square foot metal building to house weather-sensitive equipment and controls and office areas. In addition to this, construction will include road and utility relocations, foundations, parking, and fencing. The Outfall 200 Mercury Treatment Facility will be constructed near the head waters of Upper East Fork Poplar Creek, at the Y-12 National Security Complex in Oak Ridge, TN, as a Comprehensive Environmental Response, Compensation, and Liability Act of 1980 interim remedial action. The facility will provide treatment of storm sewer water discharges through Outfall 200, for the removal of mercury. The facility will accomplish mercury removal through a combination of unit operations, including grit removal, chemical precipitation, clarification and media filtration.

The Comprehensive Environmental Response, Compensation, and Liability Act and DOE O 413.3B CD-1 process to support design and construction of the facility is ongoing.

Justification

Historical missions at the Y-12 National Security Complex resulted in the release of mercury to the environment. Residual mercury in the 60-year-old, deteriorating storm drain infrastructure, infiltrating groundwater and sediment-bound mercury are remobilized and transported through the storm drain network to Outfall 200 into the Upper East Fork Poplar Creek. Currently, this is the largest environmental risk on the U.S. Department of Energy Oak Ridge Reservation. The primary pathway of concern is surface water because the Upper East Fork Poplar Creek flows directly from the Y-12 complex into the city of Oak Ridge. Over the past two decades, DOE has implemented a series of projects that have reduced the concentrations of mercury measured at the site boundary at Station 17, the Y-12 National Pollutant Discharge Elimination System permit compliance point. Despite the success of these actions, an unknown volume of mercury remains in the soils beneath and adjacent to the buildings, storm sewers, and process pipelines, which continues to be released to the storm sewer system. Design and construction of a water treatment system at Outfall 200 is expected to mitigate the current downstream migration of mercury, as well as potential future changes in mercury flux characteristics.

The project is being conducted in accordance with the project management requirements in DOE O 413.3B, Program and Project Management for the Acquisition of Capital Assets.

5. Financial Schedule

	(dollars in thousands)		
	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
Design			
FY 2014	N/A	N/A	0
FY 2015	N/A	N/A	9,000
FY 2016	N/A	N/A	9,500
Outyears	N/A	N/A	TBD
Total, Design	TBD	TBD	TBD
Construction			
Outyears	N/A	N/A	N/A
Total, Construction	TBD	TBD	TBD
TEC			
FY 2014	4,608	4,608	0
FY 2015	9,400	9,400	9,000
FY 2016	6,800	6,800	9,500
Outyears	TBD	TBD	TBD
Total TEC	TBD	TBD	TBD
Other Project Cost (OPC)			
OPC except D&D			
FY 2012	2,300	2,300	2,300 ^a
FY 2013	3,300	3,300	3,300 ^b
FY 2014	5,200	5,200	2,200
FY 2015	2,800	2,800	5,800
FY 2016	500	500	500
Outyears	TBD	TBD	TBD
Total, OPC except D&D	TBD	TBD	TBD
OPC			
FY 2012	2,300	2,300	2,300 ^a
FY 2013	3,300	3,300	3,300 ^b
FY 2014	5,200	5,200	2,200
FY 2015	2,800	2,800	5,800
FY 2016	500	500	500
Outyears	TBD	TBD	TBD
Total, OPC	TBD	TBD	TBD
Total Project Cost (TPC)			
FY 2012	2,300	2,300	2,300 ^a
FY 2013	3,300	3,300	3,300 ^b
FY 2014	5,200	5,200	2,200
FY 2015	2,800	2,800	14,800
FY 2016	7,300	7,300	10,000
Outyears	TBD	TBD	TBD
Total, TPC	TBD	TBD	TBD

^a FY 2012 cost of \$2,300 is funded by Recovery Act appropriations.

^b FY 2013 cost of \$2,900 is funded by Recovery Act appropriations.

6. Details of Project Cost Estimate

(dollars in thousands)

	Current Total Estimate ^a	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design			
Design	TBD	21,600	N/A
Title III	TBD	10,200	N/A
Contingency	TBD	2,700	N/A
Total Design	TBD	34,500	N/A
Construction			
Construction	TBD	TBD	N/A
Contingency	TBD	TBD	N/A
Total Construction	TBD	TBD	N/A
Total, TEC	TBD	TBD	N/A
Contingency, TEC	TBD	TBD	N/A
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Design	8,000	8,000	N/A
Start-Up	TBD	TBD	N/A
Contingency	TBD	TBD	N/A
Other OPC	TBD	TBD	N/A
Total, OPC except D&D	TBD	TBD	N/A
Total, OPC	TBD	TBD	N/A
Contingency, OPC	TBD	TBD	N/A
Total, TPC	TBD	TBD	N/A
Total, Contingency	TBD	TBD	N/A

7. Schedule of Appropriation Requests

Request		Prior				Total
		Years	FY 2015	FY 2016	Outyears	
FY 2015 Request	TEC	4,600	9,400	TBD	TBD	TBD
	OPC	12,600	1,000	TBD	TBD	TBD
	TPC	16,600	10,400	TBD	TBD	TBD
FY 2016 Request ^a	TEC	4,608	9,400	6,800	TBD	TBD
	OPC	10,800	2,800	500	TBD	TBD

	TPC	15,408	12,200	7,300	TBD	TBD
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8. Related Operations and Maintenance Funding Requirements

Start of Operation or Beneficial Occupancy (fiscal quarter or date)	TBD
Expected Useful Life (number of years)	30
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
Operations	6,000	6,000	180,000	180,000
Utilities	0	0	0	0
Maintenance	0	0	0	0
Total, Operations & Maintenance	6,000	6,000	180,000	180,000

9. D&D Information

The new area being constructed in this project is not replacing existing facilities.

Area	Square Feet
New area being constructed by this project at Y-12 National Security Complex	15,000
Area of D&D in this project at Y-12 National Security Complex	0
Area at Y-12 National Security Complex to be transferred, sold, and/or D&D outside the project including area previously "banked"	0
Area of D&D in this project at other sites	0
Area at other sites to be transferred, sold, and/or D&D outside the project including area previously "banked"	15,000
Total area eliminated	15,000

The one-for-one replacement requirement is met by using previously "banked" square footage from demolished facilities at the East Tennessee Technology Park, Oak Ridge, Tennessee.

10. Acquisition Approach

Awarded contract to URS/CH2M Oak Ridge, LLC (UCOR) on April 29, 2011. This contract includes the design of the Outfall 200 Mercury Treatment Facility and support for DOE Order 413.3B Critical Decision approval through Critical Decision-2/3. The contract is a cost plus award fee with performance based incentives.

This Project Data Sheet assumes the design contractor will provide the Title III support during the construction phase and, therefore, Title III Costs are Project Engineering and Design.

An Acquisition Strategy is being developed for the construction phase of the project to support Critical Decision-1 approval.

Paducah

Overview

The Paducah Site will support the Department's Strategic Plan to position the Department of Energy to meet the challenges of the 21st century and the nation's Manhattan Project and Cold War legacy responsibilities. The overall cleanup strategy at Paducah will take near-term actions to control or eliminate ongoing sources of contamination along with continued investigation of other potential sources.

Paducah will operate the uranium hexafluoride conversion facility. DOE anticipates the depleted uranium hexafluoride conversion operations will continue approximately thirty years.

To complete cleanup, Paducah will maintain a safe, secure, and compliant posture; support high priority groundwater remediation; deactivate and decommission excess facilities; disposition mixed and low-level waste; and reduce DOE's liabilities through involvement with local community stakeholders.

Direct maintenance and repair of the remediation related infrastructure at the Paducah Gaseous Diffusion Plant is estimated to be \$54,629,000 in FY 2016.

Highlights of the FY 2016 Budget Request

This FY 2016 budget request supports activities to further stabilize the gaseous diffusion plant that is being returned to DOE from United States Enrichment Corporation in 2015 to an inactive status, including facility modifications, surveillance and maintenance, and actions to remove hazardous materials.

FY 2015 and FY 2016 Key Milestones/Outlook

- (January 2015) Issue Burial Grounds Solid Waste Management Unit 4 Remedial Investigation Report Addendum to Regulators
- (January 2015) Issue Onsite Waste Disposal Facility Remedial Design Work Plan D1 to Regulators
- (February 2015) Issue Southwest Plume SWMUs 211A and 211B D1 Remedial Design Report
- (February 2015) Issue Southwest Plume C-720 Remedial Design Report D1 to Regulators
- (March 2015) Issue Southwest Plume SWMUs 211A and 211B D1 Remedial Action Work Plan
- (March 2015) Issue Southwest Plume C-720 Remedial Action Work Plan D1 to Regulators
- (June 2015) Issue Burial Grounds Solid Waste Management Unit 5 and 6 Remedial Action Work Plan to Environmental Protection Agency/Kentucky (D1)
- (August 2015) Issue Burial Grounds Solid Waste Management Unit 4 Feasibility Study Report D1 to Regulators
- (December 2015) Issue Waste Disposal Record of Decision
- (January 2016) Issue Burial Grounds Solid Waste Management Units 5 and 6 Remedial Design Report D1 to Regulators
- (February 2016) Issue Burial Grounds Solid Waste Management Unit 5 and 6 Remedial Action Work Plan D1 to Regulators
- (July 2016) Issue Burial Grounds Solid Waste Management Unit 4 Remedial Investigation Report Addendum to Regulators
- (July 2016) Issue Burial grounds Solid Waste Management Unit 4 Remedial Investigation Addendum D1 to Regulators
- (August 2016) Burial Grounds Solid Waste Management Units 5 and 6 Field Start.

Regulatory Framework

In May 1994, the Paducah site was placed on the United States 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 United States 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 United States 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, 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.

Contractual Framework

Program planning and management at Paducah is conducted through the issuance and execution of contracts to large and small businesses. Paducah develops near-term and long-term planning approaches in order to develop contract strategies and program/project plans at a more detailed level. Selected contractors then execute these plans to complete cleanup on schedule. Current contracts at Paducah include:

- Babcock and Wilcox Conversion Services contract for treatment and disposition of depleted uranium hexafluoride, covering the period from 1/03/11 - 1/1/16. Competitive procurement for a replacement contract is ongoing.
- LATA Kentucky contract for decontamination and decommissioning of surplus buildings and legacy soil and groundwater remediation, covering the period 7/22/10 - 7/25/15. The contractor is a small business.
- Swift and Staley contract for site support services covering the period 3/16/10 - 3/15/15. The contractor is a small business. Competitive procurement for a replacement contract is ongoing.
- Fluor Federal for deactivation of the Gaseous Diffusion Plant covering a period from 7/22/14 – 7/22/17.

Strategic Management

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. In addition, Paducah will operate a depleted uranium hexafluoride conversion facility. DOE anticipates the depleted uranium hexafluoride conversion operations to continue for approximately thirty years.

The factors that could have significant impact on individual projects and may impact the overall cleanup scope, schedule, and costs are identified below:

- DOE does not have a regulatory agreement on final 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 are ongoing. Until Records of Decision are agreed upon, a high degree of project uncertainty exists. For example, current planning 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 timing and 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.

The FY 2016 Request is maintaining the new control point within the Uranium Enrichment Decontamination and Decommissioning Fund Appropriation established in the FY 2015 Congressional submission in order to better manage requirements for Pension and Community and Regulatory activities.

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.

Paducah Project Office

Funding (\$K)

	FY 2014 Enacted	FY 2014 Current	FY 2015 Enacted	FY 2016 Request	FY 2016 vs FY 2015
Defense Environmental Cleanup					
Safeguards and Security					
PA-0020 / Safeguards and Security	12,434	12,434	7,297	8,216	+919
Non-Defense Environmental Cleanup					
Gaseous Diffusion Plants					
Paducah Gaseous Diffusion Plant					
PA-0011 / NM Stabilization and Disposition-Paducah Uranium Facilities Management	1,369	1,369	1,369	1,369	0
PA-0011X / NM Stabilization and Disposition-Depleted Uranium Hexafluoride Conversion	45,501	45,492	51,517	51,517	0
Subtotal, Paducah Gaseous Diffusion Plant	46,870	46,861	52,886	52,886	0
Uranium Enrichment Decontamination and Decommissioning Fund					
Paducah					
Paducah Gaseous Diffusion Plant					
PA-0040 / Nuclear Facility D&D-Paducah	262,057	260,495	207,215	168,652	-38,563
Pension and Community and Regulatory Support					
Paducah Gaseous Diffusion Plant					
PA-0102 / Paducah Contract/Post-Closure Liabilities/Administration	1,438	3,000	650	650	0
PA-0103 / Paducah Community and Regulatory Support	1,725	1,725	1,725	1,725	0
Subtotal, Paducah Gaseous Diffusion Plant	3,163	4,725	2,375	2,375	0
Total, Uranium Enrichment Decontamination and Decommissioning Fund	265,220	265,220	209,590	171,027	-38,563
Environmental Management/ Paducah	173				

FY 2014 Enacted	FY 2014 Current	FY 2015 Enacted	FY 2016 Request	FY 2016 vs FY 2015
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Total, Paducah

324,524	324,515	269,773	232,129	-37,644
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Paducah Project Office Explanation of Major Changes (\$K)

FY 2016 vs FY 2015

Defense Environmental Cleanup	
Safeguards and Security	
PA-0020 / Safeguards and Security	
• Increased funding supports improvements in cybersecurity.	+919
Uranium Enrichment Decontamination and Decommissioning Fund	
Paducah	
Paducah Gaseous Diffusion Plant	
PA-0040 / Nuclear Facility D&D-Paducah	
• Decrease reflects placing the gaseous diffusion plant in a steady state maintenance mode.	-38,563
<hr/> Total, Paducah <hr/>	-37,644

Safeguards and Security (PBS: PA-0020)

Overview

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

The safeguards and security program at the Paducah Gaseous Diffusion Plant provides security services to protect nuclear materials, sensitive uranium enrichment technology, equipment, and facilities. This program includes maintaining a security guard force to protect nuclear materials and classified technology/information and complying with cyber security requirements necessary to protect DOE information. The safeguards and security program also supports the Paducah remediation and cleanup programs.

Upon return of the Gaseous Diffusion Plant to DOE, DOE will become responsible for providing security operations necessary to protect the respective site’s national security interests and government property. Safeguard and security activities include protective forces, protection of restricted data associated with gaseous diffusion technology and legacy nuclear weapons components, special nuclear material, official use only information, unclassified controlled nuclear information, export controlled information, and high risk government property. This risk-based site security is in keeping with the evolving EM mission at Paducah.

Safeguards and Security (PBS: PA-0020)

Activities and Explanation of Changes

FY 2015 Enacted	FY 2016 Request	Explanation of Changes FY 2016 vs FY 2015
\$7,297	\$8,216	+\$919
<ul style="list-style-type: none"> Provide Safeguards and Security services program at the Paducah site. Provide site safeguards and security services for protection program management, emergency response, Physical Security, information protection, Protective Force, Personnel Security, Cyber Security and Nuclear Material Control and Accountability. 	<ul style="list-style-type: none"> Provide protective force, physical security, information security, personnel security, and cyber security at the Paducah site, with priority on the physical protection of nuclear materials, classified information, and technology. 	<ul style="list-style-type: none"> Increased funding supports improvements in cybersecurity.

NM Stabilization and Disposition (PBS: PA-0011)

Overview

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

This project scope includes management of legacy polychlorinated biphenyl remediation activities to maintain compliance with the Toxic Substances Control Act (40 CFR 761), the Uranium Enrichment Toxic Substances Control Act Federal Facilities Compliance Agreement of 1992, DOE Orders, and other applicable requirements. Polychlorinated biphenyls were used as coolant fluids and are a toxic environmental contaminant. The polychlorinated biphenyl collection and containment trough systems in the cascade buildings (C-310, C-315, C-331, C-333, C-335, and C-337) cover approximately 6,400,000 ft² and contain approximately 16,000 collection systems.

NM Stabilization and Disposition-Paducah Uranium Facilities Management (PBS: PA-0011)

Activities and Explanation of Changes

FY 2015 Enacted	FY 2016 Request	Explanation of Changes FY 2016 vs FY 2015
\$1,369	\$1,369	0
<ul style="list-style-type: none"> Continue to monitor activities related to polychlorinated biphenyls and to maintain cleanup, sampling, and decontamination of polychlorinated spills and leaks. Maintain polychlorinated biphenyl collection and containment trough systems in the cascade buildings. 	<ul style="list-style-type: none"> Continue to monitor activities related to polychlorinated biphenyls and to maintain cleanup, sampling, and decontamination of polychlorinated spills and leaks. Maintain polychlorinated biphenyl collection and containment trough systems in the cascade buildings. 	<ul style="list-style-type: none"> No change.

NM Stabilization and Disposition-Depleted Uranium Hexafluoride Conversion (PBS: PA-0011X)

Overview

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

This PBS scope includes operating a depleted uranium hexafluoride conversion facility at the Paducah Gaseous Diffusion Plant site. The facility converts depleted uranium hexafluoride into a more stable chemical form (depleted uranium oxide) suitable for beneficial reuse or disposition. The depleted uranium oxide and cylinders will initially be stored on-site and ultimately sent to a disposal facility if beneficial reuses are not realized. The hydrogen fluoride co-product is sold on the commercial market for unrestricted use. The proceeds from the sale of hydrogen fluoride are used to offset project operating costs.

This PBS also includes surveillance and maintenance of all depleted uranium hexafluoride cylinders during conversion of the existing stockpile, which will take approximately thirty years. Completion of these activities will contribute to reducing the footprint and total cleanup of the site.

NM Stabilization and Disposition-Depleted Uranium Hexafluoride Conversion (PBS: PA-0011X)

Activities and Explanation of Changes

FY 2015 Enacted	FY 2016 Request	Explanation of Changes FY 2016 vs FY 2015
\$51,517	\$51,517	0
<ul style="list-style-type: none"> Continue steady state operations of the DUF6 conversion facility with emphasis on plant availability and achieving nominal conversion capacity. Package converted depleted uranium oxide for beneficial reuse or disposal and store on site. Conduct cylinder surveillance and maintenance, to keep existing material in a safe stable condition. 	<ul style="list-style-type: none"> Continue steady state operations of the DUF6 conversion facility with emphasis on plant availability and achieving nominal conversion capacity. Package converted depleted uranium oxide for beneficial reuse or disposal and store on site. Conduct cylinder surveillance and maintenance, to keep existing material in a safe stable condition. 	<ul style="list-style-type: none"> No change.

Nuclear Facility D&D (PBS: PA-0040)

Overview

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

The scope of this PBS includes environmental cleanup and risk reduction through focused response actions and surveillance and maintenance activities. The response actions involve treatment of on-site and off-site groundwater plumes and surface water, remediation of contaminated soils and burial grounds, and decontamination and decommissioning of inactive or excess facilities, including the gaseous diffusion plant returned in 2015. The scope also includes landfill operations and maintenance activities. Compliance requirements are subject to negotiations with the regulators.

This FY 2016 budget request supports activities to further stabilize the gaseous diffusion plant that is being returned to DOE from United States Enrichment Corporation in 2015 to an inactive status, including facility modifications, surveillance and maintenance, and actions to remove hazardous materials.

This PBS also includes the design and construction of a capital project; the potential On-Site Waste Disposal Facility for disposition of the wastes generated from the site-wide cleanup, including wastes generated from the decontamination, decommissioning, and demolition of the gaseous diffusion plant.

In addition, the FY 2016 request includes the design and construction of the Solid Waste Management Units 5 and 6 project. This project is being conducted in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act process. It is anticipated that this process will result in the selection of the design and construction of "Kentucky Subtitle D" Cap over Solid Waste Management Units 5 and 6 of the Burial Ground Operable Unit at the Paducah Gaseous Diffusion Plant.

Completion of these activities are required for reducing the site footprint and completing cleanup of the site.

Nuclear Facility D&D-Paducah (PBS: PA-0040)

Activities and Explanation of Changes

FY 2015 Enacted	FY 2016 Request	Explanation of Changes FY 2016 vs FY 2015
\$207,215	\$168,652	-\$38,563
<ul style="list-style-type: none"> Complete transition of the Gaseous Diffusion Plant (in a cold and dark state) from the United States Enrichment Corporation to the Department of Energy. Continue C-400 Trichloroethylene Source Area Phase IIb Treatability Study Field Work. 	<ul style="list-style-type: none"> Finalize Waste Disposal Record of Decision. Complete optimization of the Northeast Plume pump and treat, eliminating further offsite migration. Start capping of two historic unlined burial grounds. 	<ul style="list-style-type: none"> Decrease reflects placing the gaseous diffusion plant in a steady state maintenance mode.

- Continue optimization of the Northeast Plume pump and treat, eliminating further offsite migration.
- Complete soil cover and sub-surface remediation of two historic unlined burial grounds.
- Initiate design activities associated with the On-Site Waste Disposal Facility.
- Continue pump-and-treat operations and environmental surveillance, monitoring, and reporting.
- Conduct management and infrastructure surveillance and maintenance.
- Continue existing landfill operations and maintenance.
- Continue gaseous diffusion plant facility modifications, including switchyard reconfiguration, and maintain gaseous diffusion plant in inactive status.
- Initiate removal of uranium deposits within the entire cascade of the Gaseous Diffusion Plant to meet Nuclear Criticality Safety allowing long-term safe storage of the shutdown Gaseous Diffusion Plant.
- Index, scan and ship more than 7,000 cubic feet of DOE legacy records and 250,000 drawings to a federal records repository.
- Characterize, package, ship, treat and dispose of oils from over 300 capacitors and 67 transformers.
- Conduct a Freon treatability study on the over eight million pounds of R-114 Freon.
- Complete demolition of the C-410 Complex.
- Continue design activities associated with the first cell of the On-Site Waste Disposal Facility.
- Continue C-400 Trichloroethylene Source Area Phase IIb regulatory documents.
- Conduct management and infrastructure surveillance and maintenance.
- Continue existing landfill operations and maintenance.
- Continue pump-and-treat operations and environmental surveillance, monitoring, and reporting.
- Continue to perform surveillance and maintenance of gaseous diffusion plant.
- Continue gaseous diffusion plant facility modifications, including switchyard reconfiguration.
- Perform gaseous diffusion plant facility stabilization and system isolation activities.

Paducah Contract/Post-Closure Liabilities/Administration (PBS: PA-0102)

Overview

This PBS can be found within the Uranium Enrichment Decontamination and Decommissioning fund appropriation.

This PBS supports a contract liability to provide record searches performed for DOE and the Department of Justice investigations/studies, pending litigation expenses, severance and the administration of post retirement life and medical support.

Paducah Contract/Post-Closure Liabilities/Administration (PBS: PA-0102)

Activities and Explanation of Changes

FY 2015 Enacted	FY 2016 Request	Explanation of Changes FY 2016 vs FY 2015
\$650	\$650	0
<ul style="list-style-type: none"> Continue to provide support to DOE and Department of Justice for all investigations and litigation. Continue to provide payment into the Paducah pension and post retirement benefits program to remain in compliance with the Employee Retirement Income Security Act and other applicable laws, and DOE O 350.1 requirements. 	<ul style="list-style-type: none"> Continue to provide support to DOE and Department of Justice for all investigations and litigation. Continue to provide payment into the Paducah pension and post retirement benefits program to remain in compliance with the Employee Retirement Income Security Act and other applicable laws, and DOE O 350.1 requirements. 	<ul style="list-style-type: none"> No change.

Paducah Community and Regulatory Support (PBS: PA-0103)

Overview

This PBS can be found within the Uranium Enrichment Decontamination and Decommissioning Fund appropriation.

This PBS scope supports: an Agreement-in-Principle grant to the Commonwealth of Kentucky to provide independent oversight of the environmental programs, including surface water, groundwater, air and other environmental monitoring; a Federal Facility Agreement grant with the Commonwealth of Kentucky to assure Federal Facility Agreement conditions and compliance schedules are met in accordance with state, federal, and local guidance, regulations and statutes; and the Kentucky Research Consortium for Energy and Environment grant to develop technical information for decision-making in the Paducah environmental cleanup. This PBS also includes support to the Paducah Citizens Advisory Board for assistance in all public participation activities.

Paducah Community and Regulatory Support (PBS: PA-0103)

Activities and Explanation of Changes

FY 2015 Enacted	FY 2016 Request	Explanation of Changes FY 2016 vs FY 2015
\$1,725	\$1,725	0
<ul style="list-style-type: none"> Continue support to the Citizens Advisory Board to assist in the public participation activities required by the Comprehensive Environmental Response, Compensation, and Liability Act. Continue to ensure requirements are met regarding the grants. 	<ul style="list-style-type: none"> Continue support to the Citizens Advisory Board to assist in the public participation activities required by the Comprehensive Environmental Response, Compensation, and Liability Act. Continue to ensure requirements are met regarding the grants. 	<ul style="list-style-type: none"> No change.

**Paducah
Construction Summary (\$K)**

Total	Prior Years	FY 2014 Enacted	FY 2014 Current	FY 2015 Enacted	FY 2016 Request	FY 2016 vs FY 2015
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15-U-407, On Site Waste Disposal Facility (PA-0040)

Total Estimate Cost (TEC)	TBD	0	0	0	8,486	0	-8,486
Other Project Costs (OPC)	TBD	0	0	0	514	1,570	+1,056
Total Project Cost (TPC) 15-U-407	TBD	0	0	0	9,000	1,570	-7,430

16-U-401, Solid Waste Management Unit 5 & 6 (PA-0040)

Total Estimate Cost (TEC)	TBD	0	0	0	0	1,196	+1,196
Other Project Costs (OPC)	TBD	0	0	0	960	693	-267
Total Project Cost (TPC) 16-U-401	TBD	0	0	0	960	1,889	+929

16-U-401
Paducah Solid Waste Management Units 5&6 Remediation Project
Paducah Gaseous Diffusion Plant, Paducah, Kentucky
Project is for Design and Construction

1. Significant Changes and Summary

Significant Changes

This Project Data Sheet is new and is a new start for the budget year.

Summary

This project currently is developing Critical Decision 0 and Critical Decision 1 per the requirements of DOE O 413.3B. It is anticipated the Critical Decision 0 will be approved in the fourth quarter of FY 2015. A rough order magnitude cost estimate has been developed for this project and is \$9,700,000 to \$20,700,000.

A Federal Project Director has been assigned to this project and has approved this Construction Project Data Sheet.

This project is contingent upon the selection to construct a cap over the Solid Waste Management Units 5&6 in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act process. The Comprehensive Environmental Response, Compensation, and Liability Act process will result in a decision of no action, construction of a cap over these units, or excavation of these units. It is anticipated that the process will result in the selection of the design and construction of "Kentucky Subtitle D" Cap over Solid Waste Management Units 5 & 6 of the Burial Ground Operable Unit at the Paducah Gaseous Diffusion Plant. This should not be interpreted as presupposing the outcome of the Comprehensive Environmental Response, Compensation, and Liability Act process.

DOE has submitted a draft Comprehensive Environmental Response, Compensation, and Liability Act Proposed Remedial Action Plan to state (Kentucky Department for Environmental Protection) and federal (U.S. Environmental Protection Agency) regulatory agencies, which identifies a preferred alternative consisting of a Kentucky Subtitle D cap, groundwater monitoring, and land use controls.

2. Critical Milestone History

(fiscal quarter or date)

CD-0 ^a	Conceptual Design Complete	CD-1 ^b	CD-2	Final Design Complete	CD-3	D&D Complete	CD-4
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FY 2016	4QFY 2015	3QFY 2015	1QFY 2016	4QFY 2016	TBD	4QFY 2016	N/A	TBD
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CD-0 – Approve Mission Need for a construction project with a conceptual scope and cost range

Conceptual Design Complete – Actual date the conceptual design was completed (if applicable)

CD-1 – Approve Design Scope and Project Cost and Schedule Ranges

CD-2 – Approve Project Performance Baseline

Final Design Complete – Estimated/Actual date the project design will be/was complete(d)

CD-3 – Approve Start of Construction

^a Under development based on the approved Remedial Investigation/Feasibility Study

^b Being developed in parallel with CERCLA process

D&D Complete –Completion of D&D work (see Section 9)

CD-4 – Approve Start of Operations or Project Closeout

PB – Indicates the Performance Baseline

3. Project Cost History

	TEC, Design	TEC, Construction	TEC, Total	OPC, Except D&D	OPC, D&D	OPC, Total	TPC
FY 2016	873	TBD	TBD	TBD	N/A	TBD	TBD

4. Project Scope and Justification

Scope

If capping of Solid Waste Management Units 5 & 6 is selected as the remedy, the scope of this project would include the design and construction of a Kentucky Subtitle D cap to manage wastes in-place while protecting groundwater, and preventing access and exposure to the buried waste. Solid Waste Management Units 5 and 6 are co-located units that are approximately 4.5 acres. The scope of this project will consist of the following activities:

- Conduct remedial design,
- Place grade fill to achieve adequate drainage,
- Install Kentucky Subtitle D cap,
- Install monitoring wells for long-term groundwater monitoring, and
- Implement Land Use Controls.

The components of landfill cover designed to meet the performance objectives for a Kentucky Subtitle D Contained Landfill under 401 Kentucky Administrative Regulations 48:080 typically include the following from bottom to top:

- Filter fabric or other approved material;
- 12-inch sand gas venting system;
- Filter fabric or other approved material;
- 18-inch clay layer;
- 12-inch drainage layer; and
- 36-inch vegetative soil layer.

Justification

This project is necessary to protect groundwater by eliminating, reducing, or controlling sources of groundwater contamination and prevent exposure to waste and contaminated soils that present an unacceptable risk from direct contact. The following alternatives are being evaluated:

- Alternative 1 – No Action
 - Alternative 2 – Limited Action
 - Alternative 3 – Soil Cover, Land Use Constraints, Monitoring
 - Alternative 4 – 18/6 Cover, Land Use Constraints, Monitoring
 - Alternative 5* – Kentucky Subtitle D Cap, Land Use Constraints, Monitoring
 - Alternative 6 – Excavation and Disposal of Waste Materials and Affected Soil
- *Preferred Alternative*

No TEC funding will be spent until the Record of Decision and subsequent Critical Decision 1 have been approved.

The project is being conducted in accordance with the project management requirements in DOE O 413.3B, Program and Project Management for the Acquisition of Capital Assets.

5. Financial Schedule

(dollars in thousands)

	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
Design			
FY 2016	N/A	N/A	873
Total, Design	N/A	N/A	873
Construction			
FY 2016	N/A	N/A	323
Outyears	N/A	N/A	TBD
Total, Construction	N/A	N/A	TBD
TEC			
FY 2016	1,196	1,196	1,196
Outyears	TBD	TBD	TBD
Total, TEC	TBD	TBD	TBD
Other Project Cost (OPC)			
OPC except D&D			
FY 2015	N/A	N/A	960
FY 2016	N/A	N/A	693
Outyears	TBD	TBD	TBD
Total, OPC except D&D	TBD	TBD	TBD
OPC			
FY 2015	960	960	960
FY 2016	693	693	693
Outyears	TBD	TBD	TBD
Total, OPC	TBD	TBD	TBD
Total Project Cost (TPC)			
FY 2015	960	960	960
FY 2016	1,889	1,889	1,889
Outyears	TBD	TBD	TBD
Total, TPC	TBD	TBD	TBD

6. Details of Project Cost Estimate

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design			
Design	576	N/A	N/A
Contingency	297	N/A	N/A
Total Design	873	N/A	N/A

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Construction			
Capping & Site Work	TBD	N/A	N/A
Contingency	TBD	N/A	N/A
Total Construction	TBD	N/A	N/A
Total, TEC	TBD	N/A	N/A
Contingency, TEC	TBD	N/A	N/A
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Design	0	N/A	N/A
Conceptual Planning	0	N/A	N/A
Contingency	TBD	N/A	N/A
Other OPC Costs	TBD	N/A	N/A
Total, OPC except D&D	TBD	N/A	N/A
Total, OPC	TBD	N/A	N/A
Contingency, OPC	TBD	N/A	N/A
Total, TPC	TBD	N/A	N/A
Total, Contingency	TBD	N/A	N/A

7. Schedule of Appropriation Requests

Request		Prior		FY 2016	Outyears	Total
		Years	FY 2015			
FY 2016	TEC	0	0	1,196	TBD	TBD
	OPC	0	960	693	TBD	TBD
	TPC	0	960	1,889	TBD	TBD

8. Related Operations and Maintenance Funding Requirements

Start of Operation or Beneficial Occupancy (fiscal quarter or date)	TBD
Expected Useful Life (number of years)	30+ years
Expected Future Start of D&D of this capital asset (fiscal quarter)	N/A

(dollars in thousands)

	Annual Costs		Life Cycle Costs	
	Current Total Estimate	Previous Total Estimate	Current Total Estimate	Previous Total Estimate
Operations	N/A	N/A	N/A	N/A
Utilities	N/A	N/A	N/A	N/A
Maintenance and Repair	N/A	N/A	N/A	N/A

**Environmental Management/
Paducah/16-U-401 Solid Waste
Management Units 5&6 Remediation
Project**

Total	N/A	N/A	N/A	N/A
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9. D&D Information

The new area being constructed in this project is not replacing existing facilities.

The location of this construction project is an environmental management closure site and, therefore, is exempt from the "one-for-one" requirement.

10. Acquisition Approach

The acquisition approach for the project will be through competitive bids and the use of consent packages, consistent with current Paducah prime contract requirements under Federal Acquisition Regulation 44. An Acquisition Plan for the design and construction of the project will be prepared prior to Critical Decision-2/3.

Portsmouth

Overview

The Portsmouth Site will support the Department's Strategic Plan to position the Department of Energy to meet the challenges of the 21st century and the nation's Manhattan Project and Cold War legacy responsibilities; including environmental cleanup, waste management, depleted uranium conversion, deactivation and decommissioning and long-term stewardship.

Portsmouth will operate the depleted uranium hexafluoride conversion facility. DOE anticipates depleted uranium hexafluoride conversion operations at Portsmouth to continue approximately twenty years.

To complete cleanup, Portsmouth will maintain a safe, secure, and compliant posture; support deactivation and decommissioning of the gaseous diffusion plant; dispose of all low-level and mixed low-level waste resulting from deactivation and decommissioning activities; dispose of all excess materials; and perform groundwater trichloroethylene source removal.

The FY 2016 request for the Portsmouth Uranium Enrichment Decontamination and Decommissioning is \$167,212,000. The Portsmouth Uranium Enrichment Decontamination and Decommissioning operating request, totaling \$131,117,000 in combination with the continued uranium transfers, allow for the continued removal of the high-risk radioactively contaminated equipment and hazardous materials from the uranium processing buildings.

Direct maintenance and repair at the Portsmouth Site FY in 2016 is estimated to be \$29,951,000.

Highlights of the FY 2016 Budget Request

This FY 2016 Budget Request continues progress on the deactivation and decommissioning of the Portsmouth Gaseous Diffusion Plant and the safe operation of the Depleted Uranium Hexafluoride Conversion facility.

The FY 2016 request includes \$34,300,000 (\$8,523,000 is for design activities and \$25,777,000 is for construction activities) for the Portsmouth On-Site Waste Disposal Facility. The mission of this project is to construct an on-site landfill for the disposal of waste expected to be generated from the demolition of the Portsmouth Gaseous Diffusion Plant and associated facilities.

FY 2015 and FY 2016 Key Milestones/Outlook

- Key Milestones dependent on Waste Disposition and Process Building Records of Decision which are expected to be completed in FY 2015. The Alternative for the Waste Disposition Record of Decision, if selected, is the construction of the potential On-Site Waste Disposal Facility which is currently scheduled for second quarter of FY 2015.
- Waste Disposition and Process Building Remedial Design/Remedial Action Work Plans to be completed in FY 2016 if Waste Disposition and Process Building Records of Decisions are completed in FY 2015.

Regulatory Framework

Oversight of cleanup activities at the Portsmouth site is the responsibility of the Ohio Environmental Protection Agency and the United States 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. DOE and the Ohio Environmental Protection Agency reached an agreement on the regulatory framework for final decontamination and decommissioning of the facilities and the disposition of project waste under the Comprehensive Environmental Response, Compensation, and Liability Act requirements (although Portsmouth is not on the National Priorities List), and ongoing environmental media cleanup activities under Resource Conservation and Recovery Act (Consent Order and Consent Decree, respectively). The Ohio Environmental Protection Agency issued Directors Final Findings and Orders to formalize

the terms and requirements of this agreement. The more detailed process to develop the required cleanup and waste disposition decisions has been described in Remedial Investigation/Feasibility Study Work Plans.

In addition, the site is included in a compliance agreement between the United States Environmental Protection Agency and DOE under the Toxic Substances Control Act.

Contractual Framework

Program planning and management at Portsmouth is conducted through the issuance and execution of contracts to large and small businesses. Portsmouth develops near-term and long-term planning approaches in order to develop contract strategies and program/project plans at a more detailed level. Selected contractors then execute these plans to complete cleanup on schedule. Current contracts at Portsmouth include:

- The Babcock and Wilcox Conversion Services term cost plus award fee contract for treatment and disposition of Depleted Uranium Hexafluoride, covering the period from 1/03/11 - 1/1/16. Competitive procurement for a replacement contract is ongoing.
- Fluor - Babcock and Wilcox Portsmouth term cost plus award fee contract for decontamination and decommissioning of uranium gaseous diffusion buildings and legacy soil and groundwater remediation, covering the period 3/29/11 - 3/28/16 with an option to extend through 3/28/21. A decision on the five year option has not yet been made.
- Wastren - EnergX contract for site support services covering the period 12/22/09 - 7/25/15. The contract is a term cost plus fixed fee contract with no options. The contractor is a small business. Competitive procurement for a replacement contract is ongoing.

Strategic Management

The key strategies for the Portsmouth site are to continue operations of groundwater treatment facilities in support of installed remedies and to continue disposition of excess uranium materials and remove stored low-level and mixed waste streams contaminated with hazardous or toxic chemicals. Portsmouth will also continue process building equipment removal actions and hazardous material abatement and deactivation activities. In addition, Portsmouth will operate the depleted uranium hexafluoride conversion facility. DOE anticipates the depleted uranium hexafluoride conversion operations to continue for approximately twenty years.

The factor that could have significant impacts on individual projects and may impact the overall cleanup scope, schedule, and costs is identified below:

- DOE has completed the required regulatory cleanup and waste disposition studies and evaluations. DOE is currently finalizing the proposed plans as part of the decision making process in coordination with the Ohio Environmental Protection Agency, the public, and the local community.

Future decontamination and decommissioning costs will be dependent upon the timing and extent of final environmental contamination, regulatory frameworks, and disposal/recycling options for the decontamination and decommissioning materials and wastes.

The Department plans to continue to maximize the utilization of its excess material assets, including uranium, in order to conduct its cleanup mission. The uranium transfers allows for environmental remediation and decontamination and decommissioning activities at the gaseous diffusion facilities. Consistent with applicable laws, including the United States Enrichment Corporation Privatization Act, DOE transferred up to 2,400 metric tons of uranium in FY 2014, based on the Secretarial Determination of May 2012. The Secretarial Determination of May 2014 reduced the volume to 2,055 metric tons of uranium for FY 2015 and FY 2016. The actual value of the material is subject to the final amounts transferred quarterly and the market value at the time of the transfer.

The FY 2016 Request is maintaining the new control point within the Uranium Enrichment Decontamination and Decommissioning Fund Appropriation established in the FY 2015 Congressional submission in order to better manage requirements for Pension and Community and Regulatory activities. 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.

Portsmouth Project Office

Funding (\$K)

	FY 2014 Enacted	FY 2014 Current	FY 2015 Enacted	FY 2016 Request	FY 2016 vs FY 2015
Defense Environmental Cleanup					
Safeguards and Security					
PO-0020 / Safeguards and Security	12,500	12,500	8,492	8,492	0
Non-Defense Environmental Cleanup					
Gaseous Diffusion Plants					
Portsmouth Gaseous Diffusion Plant					
PO-0011X / NM Stabilization and Disposition-Depleted Uranium Hexafluoride Conversion	49,352	45,472	51,517	51,517	0
PO-0041 / Nuclear Facility D&D-Portsmouth GCEP	0	3,889	0	0	0
Subtotal, Portsmouth Gaseous Diffusion Plant	49,352	49,361	51,517	51,517	0
Uranium Enrichment Decontamination and Decommissioning Fund					
Portsmouth					
Portsmouth Gaseous Diffusion Plant					
PO-0040 / Nuclear Facility D&D-Portsmouth	135,818	135,428	214,024	165,417	-48,607
Pension and Community and Regulatory Support					
Portsmouth Gaseous Diffusion Plant					
PO-0103 / Portsmouth Contract/Post-Closure Liabilities/Administration	775	775	775	775	0
PO-0104 / Portsmouth Community and Regulatory Support	1,020	1,410	1,020	1,020	0
Subtotal, Portsmouth Gaseous Diffusion Plant	1,795	2,185	1,795	1,795	0
Total, Uranium Enrichment Decontamination and Decommissioning Fund	137,613	137,613	215,819	167,212	-48,607
Total, Portsmouth	199,465	199,474	275,828	227,221	-48,607
Environmental Management/ Portsmouth	193				

Portsmouth Project Office Explanation of Major Changes (\$K)

FY 2016 vs FY 2015

Uranium Enrichment Decontamination and Decommissioning Fund	
Portsmouth	
Portsmouth Gaseous Diffusion Plant	
PO-0040 / Nuclear Facility D&D-Portsmouth	
• Decrease reflects planned deactivation and decommissioning activities.	-48,607
<hr/> Total, Portsmouth	<hr/> -48,607

Safeguards and Security (PBS: PO-0020)

Overview

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

The safeguards and security program at the Portsmouth Gaseous Diffusion Plant provides security services to protect nuclear materials, sensitive uranium enrichment technology, equipment, and facilities. This program includes maintaining a security guard force to protect nuclear materials and classified technology/information and complying with cyber security requirements necessary to protect DOE information. The safeguards and security program also supports the Portsmouth decommissioning and decontamination program. Within the safeguards and security program, the Department continues to pursue realignment of sensitive security areas to support accelerated and less costly cleanup of the site.

Safeguards and Security (PBS: PO-0020)

Activities and Explanation of Changes

FY 2015 Enacted	FY 2016 Request	Explanation of Changes FY 2016 vs FY 2015
\$8,492	\$8,492	0
<ul style="list-style-type: none"> • Provide safeguards and security services using a graded approach for the Portsmouth Gaseous Diffusion Plant to include; Physical Security Systems, Protective Forces, Information Security, Operational Security, Personnel Security, Material Control and Accountability, Program Management and Cyber Security. • Complete initial program for compliance with Homeland Security Presidential Directive 12 requirements. • Continue security activities associated with operation of the existing onsite waste disposal facility, for which a replacement is currently being planned for construction in a location outside the existing security perimeter. 	<ul style="list-style-type: none"> • Provide safeguards and security services using a graded approach for the Portsmouth Gaseous Diffusion Plant to include: physical security systems, protective forces, information security, operational security, personnel security, material control and accountability, program management and cyber security. 	<ul style="list-style-type: none"> • No change.

NM Stabilization and Disposition-Depleted Uranium Hexafluoride Conversion (PBS: PO-0011X)

Overview

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

This PBS scope includes operating a depleted uranium hexafluoride conversion facility at the Portsmouth Gaseous Diffusion Plant site. The facility converts depleted uranium hexafluoride into a more stable chemical form (depleted uranium oxide) suitable for beneficial reuse or disposition. The depleted uranium oxide and cylinders will initially be stored on-site and ultimately sent to a disposal facility if beneficial reuses are not realized. The hydrogen fluoride co-product will be sold on the commercial market for unrestricted use. The proceeds from the sale of hydrogen fluoride are used to offset project operating costs.

This PBS also includes surveillance and maintenance of all depleted uranium hexafluoride cylinders during conversion of the existing stockpile, which will take approximately twenty years. Completion of these activities will contribute to reducing the footprint and total cleanup of the site.

NM Stabilization and Disposition-Depleted Uranium Hexafluoride Conversion (PBS: PO-0011X)

Activities and Explanation of Changes

FY 2015 Enacted	FY 2016 Request	Explanation of Changes FY 2016 vs FY 2015
\$51,517	\$51,517	0
<ul style="list-style-type: none"> Continue steady state operations of the DUF6 conversion facility with emphasis on plant availability and maintain optimum throughput. Package converted depleted uranium oxide for beneficial reuse or disposal and store on site. Conduct cylinder surveillance and maintenance, to keep existing material in a safe and stable condition. 	<ul style="list-style-type: none"> Continue steady state operations of the DUF6 conversion facility with emphasis on plant availability and maintain optimum throughput. Package converted depleted uranium oxide for beneficial reuse or disposal and store on site. Conduct cylinder surveillance and maintenance, to keep existing material in a safe and stable condition. 	<ul style="list-style-type: none"> No change.

Nuclear Facility D&D-Portsmouth (PBS: PO-0040)

Overview

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.

This PBS also includes the design and construction of a capital project; the potential On-Site Waste Disposal Facility for disposition of the wastes generated from the site-wide cleanup, including wastes generated from the decontamination, decommissioning, and demolition of the Gaseous Diffusion Plant.

The FY 2016 request is \$165,417,000. The Uranium Enrichment Decontamination and Decommissioning operating request totaling \$131,117,000, in combination with uranium transfers, allow the continued removal of the high-risk radioactively contaminated equipment and hazardous materials from the uranium processing buildings.

In addition, the FY 2016 request includes \$34,300,000 (\$8,523,000 is for design activities and \$25,777,000 is for construction activities) for the Portsmouth On-Site Waste Disposal Facility. The mission of this project is to construct an on-site landfill for the disposal of waste expected to be generated from the demolition of the Portsmouth Gaseous Diffusion Plant and associated facilities.

Eventual completion of all decontamination and decommissioning activities will contribute to reducing the footprint and total cleanup of the site.

Nuclear Facility D&D-Portsmouth (PBS: PO-0040)

Activities and Explanation of Changes

FY 2015 Enacted	FY 2016 Request	Explanation of Changes FY 2016 vs FY 2015
\$214,024	\$165,417	-\$48,607
<ul style="list-style-type: none"> Finalize Waste Disposition and Process Building Records of Decision. Complete removal of contaminated process gas equipment from one of the three process buildings. Continue offsite waste disposition. Perform facility site services, programmatic safety 	<ul style="list-style-type: none"> Finalize Waste Disposition and Process Building Remedial Design/Remedial Action Work Plans. Continue removal of contaminated process gas equipment from other process buildings. Continue offsite waste disposition while the construction of the On Site Waste Disposal Facility is in progress. 	<ul style="list-style-type: none"> Decrease reflects planned deactivation and decommissioning activities.

- and environmental technical oversight.
 - Conduct soil and groundwater environmental monitoring and reporting and associated sample collection.
 - Conduct surveillance and maintenance of DOE facilities to maintain compliance.
 - Conduct characterization, treatment and disposition of waste associated with deactivation and decommissioning.
 - Continue the design activities including site preparation, large scale soil grading, and infrastructure requirements to support the construction of the proposed On-Site Waste Disposal Cell.
- Continue the design and construction activities including infrastructure requirements to support the construction of the first cell of the proposed On Site Waste Disposal Facility.
 - Perform facility site services, programmatic safety and environmental technical oversight.
 - Conduct soil and groundwater environmental monitoring and reporting and associated sample collection.
 - Conduct surveillance and maintenance of DOE facilities to maintain compliance.
 - Conduct characterization, treatment and disposition of waste associated with deactivation and decommissioning.
-

Portsmouth Contract/Post-Closure Liabilities/Administration (PBS: PO-0103)

Overview

This PBS can be found within the Uranium Enrichment Decontamination and Decommissioning fund appropriation.

This PBS supports pending litigation expenses, severance and the administration of post retirement life and medical support.

Portsmouth Contract/Post-Closure Liabilities/Administration (PBS: PO-0103)

Activities and Explanation of Changes

FY 2015 Enacted	FY 2016 Request	Explanation of Changes FY 2016 vs FY 2015
\$775	\$775	0
<ul style="list-style-type: none"> Continue to provide defense against legal claims filed against the Government and its contractors. Continue record searches in support of legal claims, Freedom of Information Act requests, and requests from both state and Federal regulatory and elected officials. Continue to provide payment into the Portsmouth pension program to remain in compliance with the Employee Retirement Income Security Act, DOE 350.1 and other applicable laws. 	<ul style="list-style-type: none"> Continue to provide defense against legal claims filed against the Government and its contractors. Continue record searches in support of legal claims, Freedom of Information Act requests, and requests from both state and Federal regulatory and elected officials. Continue to provide payment into the Portsmouth pension program to remain in compliance with the Employee Retirement Income Security Act, DOE 350.1 and other applicable laws. 	<ul style="list-style-type: none"> No change.

Portsmouth Community and Regulatory Support (PBS: PO-0104)

Overview

This PBS can be found within the Uranium Enrichment Decontamination and Decommissioning fund appropriation.

This PBS supports activities to promote active involvement with the state and local stakeholders in the Environmental Management planning and decision-making processes and provides the opportunity for meaningful involvement in managing the cleanup and closure of the site.

Portsmouth Community and Regulatory Support (PBS: PO-0104)

Activities and Explanation of Changes

FY 2015 Enacted	FY 2016 Request	Explanation of Changes FY 2016 vs FY 2015
\$1,020	\$1,020	0
<ul style="list-style-type: none"> • Provide support for oversight activities of the Ohio Environmental Protection Agency. • Support the designated Site Specific Advisory Board. 	<ul style="list-style-type: none"> • Support oversight activities of the Ohio Environmental Protection Agency. • Support the designated Site Specific Advisory Board. 	<ul style="list-style-type: none"> • No change.

**Portsmouth
Construction Summary (\$K)**

Total	Prior Years	FY 2014 Enacted	FY 2014 Current	FY 2015 Enacted	FY 2016 Request	FY 2016 vs FY 2015
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15-U-408, On Site Waste Disposal Facility (PO-0040)

Total Estimate Cost (TEC)	TBD	0	0	0	4,500	34,300	+29,800
Other Project Costs (OPC)	TBD	0	0	0	0	700	+700
Total Project Cost (TPC) 15-U-408	TBD	0	0	0	4,500	35,000	+30,500

15-U-408
On-Site Waste Disposal Facility - Cell 1 Liner Construction
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio
Project is for Design and Construction

1. Summary and Significant Changes

Significant Changes

This project datasheet is an update to the FY 2015 President's Budget Request datasheet. The Comprehensive Environmental Response, Compensation, and Liability Act process leading to an anticipated Record of Decision has been delayed due to a more complex regulatory strategy than was previously developed by the Department of Energy and the Ohio Environmental Protection Agency. The FY 2015 request anticipated the Record of Decision by 4th Fiscal Quarter 2014, but the current projection is fourth Quarter FY 2015.

The Portsmouth Gaseous Diffusion Plant Decontamination and Decommissioning Project uses uranium transfer proceeds to supplement site appropriations. After submittal of the FY 2015 Budget request, including this construction project data sheet, the May 2014 Secretarial Determination for Uranium Transfer reduced the available volume for the Portsmouth site from 2,400 Metric Tons Uranium to 2,055 Metric Tons Uranium annually. Simultaneously, the market price for uranium has declined approximately 20% from the beginning of the calendar year 2014. As a result of lower volumes of Uranium and reduced market price, uranium transfer proceeds will be significantly reduced; delaying the need for first waste placement, changing source of the first building debris, and increasing the complexity and uncertainty of the infrastructure design required, given this revised strategy. To align this Construction Project Data Sheet with these programmatic and technical adjustments, the rough order of magnitude cost range increases from the FY 2015 construction project data sheet of \$160,000,000 - \$310,000,000 to the current \$180,000,000 - \$350,000,000 and the scheduled project completion extends from FY 2019 to FY 2024.

The decommissioning of the X-114A facility which lies within the On-Site Waste Disposal Facility Cell 1 Liner Project footprint, and was not included in the FY 2015 Budget request data sheet, will be performed in conjunction with this project.

Summary

Construction of the On-Site Waste Disposal Facility is contingent upon a Comprehensive Environmental Response, Compensation and Liability Act Site-Wide Waste Disposition Record of Decision being issued to select an on-site disposal facility as an approved component of the Portsmouth Gaseous Diffusion Plant Decontamination and Decommissioning Project. A preferred siting location of the On-Site Waste Disposal Facility has been identified in order to support an evaluation of alternatives as part of the Site-Wide Waste Disposition Remedial Investigation/Feasibility Study and the subsequent proposed plan as per agreement with the Ohio Environmental Protection Agency. References to an On-Site Waste Disposal Facility in this document are intended only to reflect the possibility that the Comprehensive Environmental Response, Compensation, and Liability Act process could result in a decision to construct and operate such a facility and should not be interpreted as presupposing the outcome of the regulatory decision process.

This Project Data Sheet does not include a new start for the budget year.

The DOE O 413.3B Critical Decision process is underway with an anticipated combined Critical Decision 0 and Critical Decision 1 approval during the fourth quarter of FY 2015, followed by approval of a critical decision -3A to initiate site preparation.

A Certified Level III Federal Project Director has been assigned to the project and has approved this construction project data sheet.

The funding reflected in this FY 2016 Budget request for the On-Site Waste Disposal Facility at the Portsmouth Gaseous Diffusion Plant in Piketon, Ohio, is a place holder pending on final approval of the project's Record of Decision which is expected in the fourth Fiscal Quarter of 2015.

The TEC scope for the FY 2016 budget year includes the initiation of large scale grading; installation of utilities and support infrastructure; and cell liner and leachate system procurement. The On-Site Waste Disposal Facility design will continue in 2016.

2. Critical Decision (CD) and D&D Schedule*

The table below provides the preliminary schedule for Critical Decisions and major milestones for the Cell 1 Liner Project.

(fiscal quarter or date)

	CD-0	Conceptual Design Complete	CD-1	Final Design Complete	CD-2	CD-3	Construction D&D Complete	CD-4
FY 2015	4Q FY2014	N/A	2Q FY2015	3Q FY2015	3Q FY2015	3Q FY2015	N/A	2Q FY2019
FY 2016	4Q FY2015	04/10/2014*	4Q FY2015	TBD	TBD	TBD	TBD	TBD

* *Conceptual Design was completed as part of the Remedial Investigation/Feasibility Study development prior to CD-0.*

- CD-0 – Approve Mission Need for a construction project with a conceptual scope and cost range
- Conceptual Design Complete – Actual date the conceptual design was completed (if applicable)
- CD-1 – Approve Design Scope and Project Cost and Schedule Ranges
- CD-2 – Approve Project Performance Baseline
- Final Design Complete – Estimated/Actual date the project design will be/was complete(d)
- CD-3 – Approve Start of Construction
- D&D Complete –Completion of D&D work (see Section 9)
- CD-4 – Approve Start of Operations or Project Closeout
- PB – Indicates the Performance Baseline

(Fiscal quarter or date)

CD-3A Milestones	Long Lead Procurement *	Initial Site Preparation Complete *	Access Control Fencing Complete *
FY 2015	1Q FY2015	3Q FY2015	3Q FY2015
FY 2016	2Q FY2015	4Q FY2016	4Q FY2016

* *Critical Decision-3A has been proposed to allow for long-lead procurement, site preparation, and access control fencing necessary prior to Critical Decision-2/3 approval.*

Note: Schedules are estimated based on a Critical Decision-0 Rough Order of Magnitude estimate and are consistent with the high end of the schedule ranges.

3. Baseline and Validation Status (\$K)

	TEC, Design	TEC, Construction	TEC, Total	OPC Except D&D	OPC D&D	OPC, Total	TPC
FY 2015	10,819	276,507	287,326	22,674	N/A	22,674	310,000
FY 2016	TBD	TBD	TBD	TBD	TBD	TBD	TBD

4. Project Description, Justification, and Scope

Scope

The On-Site Waste Disposal Facility Cell 1 Liner Project will include design, construction, and startup of the Cell 1 Liner, including the associated infrastructure for the entire On-Site Waste Disposal Facility, and decontamination and decommissioning of the X-114A facility. The Cell 1 Liner Project consists of the following items: site preparation; large scale grading involving cut and fill of soil and rock; installation of the cell liner system, valve house installation, north leachate transmission system installation; and construction of the On-Site Waste Disposal Facility interim leachate treatment system. Major components of the On-Site Waste Disposal Facility Infrastructure include: access roads; impacted material transfer area; haul road; south interim leachate treatment system; power and raw water supplies; fencing; lay-down and borrow areas; an environmental monitoring system; and the installation of access control, storage, and personnel trailers. The infrastructure also supports the entire On-Site Waste Disposal Facility and is needed prior to construction of any liners. The decommissioning of the X-114A facility which lies within the On-Site Waste Disposal Facility Cell 1 Liner Project footprint will be performed in conjunction with new construction activities.

Site preparation activities are intended to be initiated using Critical Decision 3A approval for construction spending in advance of Critical Decisions 2/3 Approval as permitted within DOE Order 413.3B.

Justification

The mission need of this project will be established by the approval of Mission Need (Critical Decision 0) for the On Site Waste Disposal Facility Cell 1 Liner Project, anticipated in the fourth quarter of FY 2015, immediately following the Record of Decision. The Ohio Environmental Protection Agency and the DOE have entered into a formal agreement regarding the decision-making process for the Portsmouth Gaseous Diffusion Plant Decontamination and Decommissioning Project and for the associated waste management. The terms of the agreement are contained in the April 13, 2010, Director's Final Findings and Orders for Removal Action and Remedial Investigation and Feasibility Study and Remedial Design and Remedial Action, including the July 16, 2012, Modification thereto.

Evaluations are underway to finalize waste acceptance criteria that meet the requirements of the Director's Final Findings and Orders, as well as requirements set forth in DOE Order 435.1, Radioactive Waste Management. This waste disposition response action provides a permanent solution for waste generated by the cleanup of Portsmouth ensuring capacity for waste expected to be generated from the Portsmouth Decontamination and Decommissioning Project that is protective of human health, safety and the environment. Additionally, this action is determined through a feasibility study conducted under the Director's Final Findings and Orders to be the best value to the government in that it provides a cost-effective and implementable solution to the waste disposal needs facing Portsmouth Decontamination and Decommissioning Project.

The project is being conducted in accordance with the project management requirements in DOE O 413.3B, Program and Project Management for the Acquisition of Capital Assets.

5. Financial Schedule (\$K)

(dollars in thousands)

	Appropriations	Obligations	Costs
[Total Estimated Cost (TEC)]			
Design			
FY 2015	N/A	N/A	807
FY 2016	N/A	N/A	8,639
Outyears	TBD	TBD	TBD
Total, Design	TBD	TBD	TBD

Construction

(dollars in thousands)

	Appropriations	Obligations	Costs
FY 2015	N/A	N/A	N/A
FY 2016	N/A	N/A	25,661
Outyears	TBD	TBD	TBD
Total, Construction	TBD	TBD	TBD
TEC			
FY 2015	4,500	4,500	4,500
FY 2016	34,300	34,300	34,300
Outyears	TBD	TBD	TBD
Total, TEC	TBD	TBD	TBD
[Other Project Cost (OPC)]			
OPC except D&D			
FY 2016	N/A	N/A	646
Outyears	TBD	TBD	TBD
Total, OPC except D&D	TBD	TBD	TBD
OPC, D&D			
Total, D&D	N/A	N/A	N/A
OPC			
FY 2016	700	700	646
Outyears	TBD	TBD	TBD
Total, OPC	TBD	TBD	TBD
Total Project Cost (TPC)			
FY 2015	4,500	4,500	4,500
FY 2016	35,000	35,000	34,946
Outyears	TBD	TBD	TBD
Total, TPC	TBD	TBD	TBD

6. Details of Project Cost Estimate

(dollars in thousands)

Current Total Estimate	Previous Total Estimate	Original Validated Baseline
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Total Estimated Cost (TEC)

Design			
Design	TBD	9,511	N/A
Contingency	TBD	1,308	N/A
Total, Design	TBD	10,819	N/A
Construction			
Building & Site Work	TBD	132,624	N/A
D&D	TBD	0	N/A

Contingency	TBD	143,883	N/A
Total, Construction	TBD	276,507	N/A
<hr/>			
Total, TEC	TBD	287,326	N/A
Contingency, TEC	TBD	145,191	N/A
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning	TBD	701	N/A
Cold startup	TBD	1,657	N/A
Other OPC Costs	TBD	15,507	N/A
Contingency	TBD	4,809	N/A
Total, OPC except D&D	TBD	22,674	N/A
D&D (if any)			
D&D	TBD	N/A	N/A
Contingency	TBD	N/A	N/A
Total, D&D	TBD	N/A	N/A
Total, OPC	TBD	22,674	N/A
Contingency, OPC	TBD	4,809	N/A
Total, TPC	TBD	310,000	N/A
Total, Contingency	TBD	150,000	N/A

7. Schedule of Appropriation Requests (\$K)

Request Year		FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	Out years	Total
FY 2015	TEC	4,500	63,706	66,283	76,725	52,073	0	0	287,326
	OPC	0	5,574	5,860	2,369	2,410	0	0	22,674
	TPC	4,500	69,280	72,143	79,094	54,483	0	0	310,000
FY 2016	TEC	34,300	34,300					TBD	TBD
	OPC	0	700					TBD	TBD
	TPC	34,300	35,000					TBD	TBD

8. Related Operations and Maintenance Funding Requirements

Nominal activities related to site services including safeguards, security, and emergency services are not included in this Project Data Sheet as they are already provided for under different appropriations (Defense).

Start of Operation or Beneficial Occupancy (fiscal quarter or date)	TBD
Expected Useful Life (duration of waste placement operations)	3-5 years *
Expected Future Start of D&D of this Capital Asset (fiscal quarter)	N/A **

* The waste placement operations for Cell 1 are projected to take three (3) to five (5) years. Useful life post-closure is 1,000 years as modeled and presented in the Waste Disposition Remedial Investigation/Feasibility Study.

**No D&D is planned related to this project.

(dollars in thousands, \$K)

	Annual Costs*		Life Cycle Costs*	
	Current Total Estimate	Previous Total Estimate	Current Total Estimate	Previous Total Estimate
Operations	TBD	5,490	TBD	19,098
Utilities	TBD	154	TBD	535
Maintenance	TBD	1,224	TBD	4,416
Total, Operations & Maintenance	TBD	6,868	TBD	24,049

* These values represent preliminary estimates for the operations associated with utilities and maintaining the facility during waste placement. Post-closure and long-term stewardship activities are not included within this table or anywhere else on this Construction Project Data Sheet.

9. Required D&D Information

Area	Square Feet
N/A	N/A

This project is providing new capability and is not replacing a current capability; thus, this project was not justified on the basis of replacing current facilities.

The location of this construction project is an environmental management closure site and, therefore, is exempt from the "one-for-one" requirement.

10. Acquisition Approach

The acquisition approach for the project will be to have the prime contractor execute the work through subcontracting mechanisms with an emphasis on fixed price through competitive bids and the use of consent packages, consistent with current Portsmouth Decontamination and Decommissioning prime contract requirements under FAR 44. Title III design scope is planned to be, in part, subcontracted through a competitively-awarded contract with an Architectural and Engineering firm. This Project Data Sheet is submitted as part of the FY 2016 budget request process, specifically pertaining to UED&D Fund.

Richland

Overview

The cleanup of the Richland Site will support the Department's Strategic Plan to position the Department of Energy to meet the challenges of the 21st century and the nation's Manhattan Project and Cold War legacy responsibilities. 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.

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 contamination of the Columbia River due to contaminants leaching from the soils into the groundwater.

The Department is working aggressively to reduce the footprint at the Richland Site. The cleanup momentum over the past several years is significant. As such, effort continues to be focused on completing cleanup along the Columbia River Corridor and transitioning the Central Plateau of the Hanford Site to a modern, protective waste management operation, thereby, reducing the risks to workers, the community, and the environment.

Direct maintenance and repair at the Richland site is estimated to be \$51,701,000.

Highlights of the FY 2016 Budget Request

Richland's FY 2016 budget request represents continued achievement of important cleanup progress required by the Tri-Party Agreement and as guided by Richland's Cleanup Vision. In summary, the Richland budget request is designed to maintain Richland safe operations, Hanford site-wide services, groundwater remediation, Plutonium Finishing Plant demolition, K West Basin sludge removal progress, as well as complete the bulk of River Corridor closure remediation except for the 618-10/11 burial grounds, Building 324 and its associated waste site, and the 100 K Area. Cleanup work is accomplished while maintaining safe and compliant waste management, decontamination and decommissioning, and groundwater capabilities in the Central Plateau.

The FY 2016 request includes funding for line item 15-D-401, the KW Basin Sludge Removal construction project (\$83,423,000). This project will design, install and operate a system to safely remove consolidated sludge and transport it to the T Plant in the Central Plateau for temporary storage. The sludge in the KW Basin is highly radioactive and poses a threat to the nearby Columbia River. Retrieval of the material requires specialized, engineered equipment and special precautions to ensure safety of the public, workers, and the environment. Within the \$83,423,000 requested for this project, \$77,016,000 is for construction activities and \$6,407,000 is for other project costs funded within PBS RL-0012, Spent Nuclear Fuel Stabilization and Disposition.

Within the FY 2016 Budget request, EM supports the Departmental crosscut for Subsurface Engineering at \$8,000,000, \$3,000,000 of which is included within the funding for Richland solid waste management. The goal of the Subsurface Engineering crosscut includes understanding geochemical and geophysical responses in natural and engineered subsurface environments; improving the safety and cost-effectiveness of drilling; developing and maintaining specific subsurface conditions in challenging environments; and advancing the understanding of multi-scale complexities in the subsurface over long time scales.

This crosscut funding supports plans for a deep borehole field test, led by the Department’s Office of Nuclear Energy. It also supports Office of Environmental Management investigation of potential candidate wastes and waste forms suitable for borehole disposal.

FY 2016 Crosscuts (\$K)

Subsurface Engineering

Richland

3,000

FY 2015 & FY 2016 Key Milestones/Outlook

- (March 2015) M-016-149; Complete 100-IU-2/6 interim response actions for 36 waste sites.
- (March 2015) M-016-163; Complete interim response actions (excluding backfill and re-vegetation) for 100-N Area waste sites.
- (June 2015) M-091-03I; Submit Annual Revision of Transuranic Mixed and Mixed Low Level Waste Project Management Plan to Ecology.
- (September 2015) M-016-125; Submit Remedial Design/Remedial Action Work Plan to the Environmental Protection Agency for 200-CW-5 & 200-PW-1/3/6 per the Record of Decision.
- (September 2015) M-094-10; Complete disposition of 300 Area surplus facilities (excluding 324 building/structures).
- (February 2016) M-015-78; Complete 2 years of groundwater and aquifer tube sampling at 100-BC Expanded Monitoring Network.
- (March 2016) M-016-161; Complete the Interim Response Action for 29 100D/H Area Waste Sites.
- (September 2016) M-083-00A; Complete Plutonium Finishing Plant Facility Transition and Selected Disposition Activities.

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 along 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 Consent Decree filed in the federal district court for cleanup on the Hanford Site. Tri-Party Agreement milestones have been updated in accordance with the Consent Decree.

Contractual Framework

Program planning and management at Richland is conducted through the issuance and execution of contracts to large and small businesses. Richland develops near- and long-term planning approaches in order to develop contract strategies and program/project plans at a more detailed level. Selected contractors then execute these plans to complete cleanup on schedule. Current prime contracts at Richland include:

- Washington Closure Hanford, LLC, for cleanup and closure of the River Corridor, a cost plus incentive completion contract. The contract was awarded with a period of performance of March 23, 2005, to September 30, 2015. Richland is currently reviewing a short extension to this contract to complete tasks in 2016 in order to maximize progress in the River Corridor.

- CH2M Hill Plateau Remediation Company, a cost plus award fee term contract for the cleanup of the Hanford Central Plateau. This contract has a base period of performance from October 1, 2008, through September 30, 2013, with contract option to extend through September 30, 2018. The 5 year option period of October 1, 2013 through September 30, 2018, has been exercised.
- Mission Support Alliance, LLC, contract with a base period of performance from May 26, 2009, through May 25, 2014, with one 3-year option plus one 2-year option. The Mission Support Alliance contract first option has been exercised for the period of May 26, 2014, through May 25, 2017. That cost plus award fee contract has an additional option of May 26, 2017, through May 25, 2019, remaining on the contract.

Strategic Management

The Hanford Cleanup Vision calls for eliminating hazards near the Columbia River by cleaning up most of the River Corridor, treating contaminated groundwater near the Columbia River, and demolishing the site's main plutonium production facility, the Plutonium Finishing Plant. The work will reduce the active cleanup footprint to 75 square miles in the center of the site, reduce overhead costs and reduce cleanup mortgages.

The Hanford mission is also guided by an agreement established on May 15, 1989. The Hanford Federal Facility Agreement and Consent Order, known as the Tri-Party Agreement, is a cleanup and compliance agreement signed by DOE, the Environmental Protection Agency and the Washington State Department of Ecology. It is a framework for implementing many of the environmental regulations that apply to Hanford. The agreement establishes the milestones for achieving compliance with Comprehensive Environmental Response, Compensation, and Liability Act remedial action provisions and with Resource Conservation and Recovery Act treatment, storage, and disposal unit regulations and corrective action provisions. More specifically, the Tri-Party Agreement includes, but is not limited to: (1) cleanup commitments; (2) agency cleanup responsibilities; and (3) enforceable milestones to achieve regulatory compliance and remediation.

Richland

Funding (\$K)

	FY 2014 Enacted	FY 2014 Current	FY 2015 Enacted	FY 2016 Request	FY 2016 vs FY 2015
Defense Environmental Cleanup					
Hanford Site					
Central Plateau Remediation					
RL-0011 / NM Stabilization and Disposition-PFP	142,670	142,670	137,130	148,661	+11,531
RL-0012 / SNF Stabilization and Disposition	98,369	98,369	113,801	158,208	+44,407
RL-0013C / Solid Waste Stabilization and Disposition- 2035	130,126	130,126	107,651	150,691	+43,040
RL-0030 / Soil and Water Remediation-Groundwater/Vadose Zone - 2035	141,500	141,500	184,929	174,619	-10,310
Subtotal, Central Plateau Remediation	512,665	512,665	543,511	632,179	+88,668
Richland Community and Regulatory Support					
RL-0100 / Richland Community and Regulatory Support	19,701	19,701	19,701	14,701	-5,000
River Corridor and Other Cleanup Operations					
RL-0040 / Nuclear Facility D&D-Remainder of Hanford - 2035	70,992	70,992	65,922	88,874	+22,952
RL-0041 / Nuclear Facility D&D-River Corridor Closure Project	337,642	337,642	311,866	108,083	-203,783
Subtotal, River Corridor and Other Cleanup Operations	408,634	408,634	377,788	196,957	-180,831
Total, Hanford Site	941,000	941,000	941,000	843,837	-97,163
Safeguards and Security					
RL-0020 / Safeguards and Security	69,078	69,078	63,668	67,601	+3,933
Total, Defense Environmental Cleanup	1,010,078	1,010,078	1,004,668	911,438	-93,230
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	2,542	2,542	2,562	2,562	0
Total, Richland	1,012,620	1,012,620	1,007,230	914,000	-93,230

Richland Explanation of Major Changes (\$K)

FY 2016 vs FY 2015

Defense Environmental Cleanup

Hanford Site

Central Plateau Remediation

RL-0011 / NM Stabilization and Disposition-PFP

- The increase reflects an increased effort toward decommissioning and demolition of the Plutonium Finishing Plant facilities to slab-on-grade by 2016. +11,531

RL-0012 / SNF Stabilization and Disposition

- The increase is associated with facility modifications to prepare for installation of sludge removal systems for the K West Basin, as well as, progress toward T Plant modifications to ready the facility to receive and store sludge waste. +44,407

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

- The increase reflects efforts to upgrade the Waste Encapsulation and Storage Facility exhaust system and repackaging of large container TRU mixed waste. +43,040

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

- The decrease reflects completion of planned characterization and documentation. -10,310

Richland Community and Regulatory Support

RL-0100 / Richland Community and Regulatory Support

- The decrease reflects completion of required land transfers for economic development. -5,000

River Corridor and Other Cleanup Operations

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

- The increase reflects critical infrastructure activities to support safe cleanup operations and the Waste Treatment and Immobilization Plant. +22,952

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

- The decrease reflects completed scope and technical challenges associated with the 324 Facility deactivation, decommissioning, decontamination and demolition, remediation of 618-10/11, and waste site remediation in the 100-K Area causing schedule delays. -203,783

Safeguards and Security

RL-0020 / Safeguards and Security

- The increase supports improvements in cybersecurity. +3,933

Total, Richland	-93,230
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NM Stabilization and Disposition-PFP (PBS: RL-0011)

Overview

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

The Plutonium Finishing Plant complex consists of several buildings that were used for defense production of plutonium nitrates, oxides and metal from 1950 through early 1989. The bulk of the plutonium bearing materials at the Plutonium Finishing Plant were stored in vaults. This PBS implements actions to package and ship special nuclear materials and fuels to 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.

NM Stabilization and Disposition-PFP (PBS: RL-0011)

Activities and Explanation of Changes

FY 2015 Enacted	FY 2016 Request	Explanation of Changes FY 2016 vs FY 2015
\$137,130	\$148,661	+\$11,531
<ul style="list-style-type: none"> • Provide site-wide services for day-to-day operations of general utilities, fire department and analytical services. Site-wide services are prorated across the PBS's. • Provide services for industrial, radiological and nuclear Plutonium Finishing Plant facilities/structures and systems including the vital safety systems. • Support deactivation and decommissioning activities for the major Plutonium Finishing Plant facilities to achieve ready-for-demolition status. Major facilities include: 234-5Z (Plutonium Conversion Facility), 291-Z (Exhaust Building), 291-Z (Stack), 236-Z and Plutonium Reclamation 	<ul style="list-style-type: none"> • Provide site-wide services for day-to-day operations of general utilities, fire department and analytical services. Site-wide services are prorated across the PBS's. • Provide services for industrial, radiological and nuclear Plutonium Finishing Plant facilities/structures and systems including the vital safety systems. • Support deactivation, decommissioning and dismantlement activities for the major Plutonium Finishing Plant facilities to achieve ready-for-demolition status. Major facilities include: 234-5Z (Plutonium Conversion Facility), 291-Z (Exhaust Building), 291-Z (Stack), 236-Z and Plutonium 	<ul style="list-style-type: none"> • The increase reflects an increased effort toward decommissioning and demolition of the Plutonium Finishing Plant facilities to slab-on-grade by 2016.

Facility), 243-Z (Low Level Waste Treatment Facility) and 242-Z (Waste Treatment Facility). Activities include deactivation, decontamination and removal of gloveboxes and process and support systems (i.e., criticality, HVAC, Fire Protection) and equipment as needed to prepare facilities for demolition. Funding also supports Plutonium Reclamation Facility Canyon equipment removal and cleanout of the Plutonium Reclamation Facility Canyon.

- Accomplish necessary program management and cross cutting activities to support decontamination and decommissioning field teams.
- Continue demolition of ancillary facilities at the nuclear Plutonium Finishing Plant.

Reclamation Facility), 243-Z (Low Level Waste Treatment Facility) and 242-Z (Waste Treatment Facility). Activities include deactivation, decontamination and removal of gloveboxes and process and support systems (i.e., criticality, HVAC, Fire Protection), and equipment as needed to prepare facilities for demolition. Funding also supports Plutonium Reclamation Facility Canyon equipment removal and cleanout of the Plutonium Reclamation Facility Canyon.

- Accomplish necessary program management and cross cutting activities to support decontamination and decommissioning field teams.
 - Complete Plutonium Finishing Plant Facility transition and selected disposition activities to achieve slab-on-grade by September 2016.
-

SNF Stabilization and Disposition (PBS: RL-0012)

Overview

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

This PBS scope includes the stabilization, removal, and shipment of nuclear materials including spent (used) nuclear fuel and radioactively contaminated sludge from the K Basins. Waste to be removed includes 27 cubic meters of radioactively contaminated sludge that currently resides in engineered containers in the K-West basin. This PBS currently supports the removal of the sludge from the K-West Basin for interim storage on the Central Plateau. After removal of sludge from the K-West Basin, PBS RL-0041 will disposition the K-West Basin and other K Basin Closure Project-related facilities, to achieve footprint reduction.

This PBS includes the design, procurement, construction, testing, and commissioning of an integrated set of process/systems to remove radioactive sludge currently stored in the KW Basin. The overall Sludge Treatment Project recommended a two-phase retrieval, storage, and packaging strategy. Phase 1 is the retrieval and transfer of the sludge material now consolidated in the engineered containers in the KW Basin. The consolidated sludge originated from previous recovery campaigns and will be retrieved and transported to T Plant for temporary storage—that is, removed from the Columbia River Corridor and transferred to the Central Plateau. The project has completed the final design of the sludge handling and supporting equipment.

SNF Stabilization and Disposition (PBS: RL-0012)

Activities and Explanation of Changes

FY 2015 Enacted	FY 2016 Request	Explanation of Changes FY 2016 vs FY 2015
\$113,801	\$158,208	+\$44,407
<ul style="list-style-type: none"> • Provide site-wide services of day-to-day operations of general utilities, fire department, and analytical services. • Provide operation and maintenance support to maintain the K West Basin, CAT 2 nuclear facility, in a safe and compliant manner. Funding also supports surveillance and maintenance activities. • Complete construction of KW Basin Modified Annex. • Continue K West Basin facility modifications to prepare for installation of sludge removal system. • Continue procurement of long lead equipment for sludge removal. 	<ul style="list-style-type: none"> • Provide site-wide services of day-to-day operations of general utilities, fire department, and analytical services. • Provide operation and maintenance support to maintain the K West Basin, CAT 2 nuclear facility, in a safe and compliant manner. Funding also supports surveillance and maintenance activities. • Continue K West Basin facility modifications to prepare for installation of sludge removal system. • Continue procurement of long lead equipment for sludge removal. • Initiate T Plant modifications necessary to receive and store sludge. 	<ul style="list-style-type: none"> • The increase is associated with facility modifications to prepare for installation of sludge removal systems for the K West Basin, as well as, progress toward T Plant modifications to ready the facility to receive and store sludge waste.

- Prepare for cold commissioning of sludge removal system.
 - Conduct planning activities for T Plant modifications necessary to receive and store sludge.
 - Provide project management support during the Containerized Sludge construction, installation, and readiness activities.
-

Solid Waste Stabilization and Disposition (PBS: RL-0013C)

Overview

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 also includes packaging of EM legacy and non-legacy irradiated nuclear fuel and storage in the Canister Storage Building or 200 Area Interim Storage Area. In addition, 1,936 cesium and strontium capsules in wet storage in the Waste Encapsulation and Storage Facility will be transferred to dry storage, and 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 will eventually be shipped to the Waste Isolation Pilot Plant. About 51,000 cubic meters of mixed low-level waste will be treated and disposed in the mixed waste trenches or other facilities. Over 200 de-fueled naval reactor compartments will be disposed of in a dedicated trench and about 130,000 cubic meters of low-level waste will be disposed through site closure.

Solid Waste Stabilization and Disposition- 2035 (PBS: RL-0013C)

Activities and Explanation of Changes

FY 2015 Enacted	FY 2016 Request	Explanation of Changes FY 2016 vs FY 2015
\$107,651	\$150,691	+\$43,040
<ul style="list-style-type: none"> • 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. Site-wide services are prorated across the PBS's. • Support safe storage of 1,936 cesium and strontium capsules in the Waste Encapsulation and Storage Facility. • Maintain T Plant Complex in a safe, compliant, and cost-effective manner for acceptance/storage of low-level waste, mixed low-level waste, and 	<ul style="list-style-type: none"> • 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. Site-wide services are prorated across the PBS's. • Support safe storage of 1,936 cesium and strontium capsules in the Waste Encapsulation and Storage Facility. • Maintain T Plant Complex in a safe, compliant, and cost-effective manner for acceptance/storage of low-level waste, mixed low-level waste, and 	<ul style="list-style-type: none"> • The increase reflects efforts to upgrade the Waste Encapsulation and Storage Facility exhaust system and repackaging of large container TRU mixed waste.

TRU waste. Provide the operations necessary to support K-Basin sludge storage.

- Provide safe operations and necessary upgrades to treat Hanford site effluents. Support ongoing site cleanup activities including: groundwater remediation and radioactive waste tank volume reduction.
- Provide core project management staff for waste management operations, liquid effluents, cesium/strontium capsules, and irradiated nuclear fuel.
- Provide operations of the Interim Disposal Facility in a safe and permit compliant manner to support future storage of Waste Treatment Plant low activity waste canisters.
- Maintain Waste Receiving and Processing Facility operations, the Central Waste Complex, the Low Level Burial Grounds, and the Mixed Waste Disposal Trenches for compliant acceptance and storage of low-level, mixed low-level and transuranic wastes at Hanford.
- Initiate upgrades to the Waste Encapsulation and Storage Facility, K-3 exhaust system for ventilation confinement and hydrogen gas removal.

TRU waste. Provide the operations necessary to support K-Basin sludge storage.

- Provide core project management staff for waste management operations, cesium/strontium capsules, and irradiated nuclear fuel.
- Maintain Waste Receiving and Processing Facility operations, the Central Waste Complex, the Low Level Burial Grounds, and the Mixed Waste Disposal Trenches for compliant acceptance and storage of low-level, mixed low-level and transuranic wastes at Hanford.
- Repackage large container TRU mixed waste.
- Complete upgrades to the Waste Encapsulation and Storage Facility K-3 exhaust system for ventilation confinement and hydrogen gas removal.

Soil and Water Remediation-Groundwater/Vadose Zone (PBS: RL-0030)

Overview

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

This PBS scope includes groundwater/vadose zone remediation activities that address groundwater contamination and protection of the groundwater resources on the Hanford Site. The principal activities for this PBS include: 1) field characterization to assess the extent of radiological/chemical contamination and contaminants for movement in the vadose zone and groundwater; 2) vadose zone, groundwater and risk assessment modeling and evaluating cumulative impacts to the Hanford groundwater and Columbia River; 3) operation of groundwater remediation systems and implementation of alternative methods; 4) installation of wells to maintain an integrated Comprehensive Environmental Response, Compensation, and Liability Act and Resource Conservation and Recovery Act compliant network for monitoring groundwater plumes and for implementing groundwater/vadose zone remedies; 5) groundwater well drilling, maintenance, decommissioning; and 6) complete final restoration of groundwater on the Hanford Site. This PBS supports the regulatory decision-making process for remediation of all of the groundwater operable units on the Hanford site. It also supports the regulatory processes for waste sites along the River Corridor and on the Central Plateau as well as the regulatory processes for and remediation of soil contamination in the Central Plateau deep vadose zone.

Soil and Water Remediation-Groundwater/Vadose Zone - 2035 (PBS: RL-0030)

Activities and Explanation of Changes

FY 2015 Enacted	FY 2016 Request	Explanation of Changes FY 2016 vs FY 2015
\$184,929	\$174,619	-\$10,310
<ul style="list-style-type: none"> • Provide site-wide services of day-to-day operations of general utilities, fire department, and analytical services. Site-wide services are prorated across the PBS's. • Continue integration of Site-wide groundwater and vadose zone cleanup activities, groundwater contamination monitoring, as well as operations, maintenance, and necessary modifications of existing remediation systems. • Continue to meet Tri-Party Agreement M-24 Well Drilling commitments, as well as, the 200-DV-1 well drilling for the Uranium Treatability Testing. • Continue progress towards the completion of the groundwater characterization and supporting 	<ul style="list-style-type: none"> • Provide site-wide services of day-to-day operations of general utilities, fire department, and analytical services. Site-wide services are prorated across the PBS's. • Continue integration of Site-wide groundwater and vadose zone cleanup activities, groundwater contamination monitoring, as well as operations, maintenance, and necessary modifications of existing remediation systems. • Continue to meet Tri-Party Agreement M-24 Well Drilling commitments. 	<ul style="list-style-type: none"> • The decrease reflects completion of planned characterization and documentation.

decision documentation needed to complete Comprehensive Environmental Response, Compensation, and Liability Act requirements and to obtain final remediation Records of Decision in the River Corridor and Central Plateau operable units. Finalization of the 200-UP-1 Remedial Design/Remedial Action Work Plan.

Richland Community and Regulatory Support (PBS: RL-0100)

Overview

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

The scope of this PBS includes regulatory and stakeholder support and assistance payments. 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; 2) grants to Washington State and Oregon State; 3) payments in lieu of property taxes made to the three host counties where the Hanford reservation is located; and 4) funding to support the Hanford Advisory Board and related activities. This PBS scope will end upon completion of the Hanford EM mission.

Richland Community and Regulatory Support (PBS: RL-0100)

Activities and Explanation of Changes

FY 2015 Enacted	FY 2016 Request	Explanation of Changes FY 2016 vs FY 2015
\$19,701	\$14,701	-\$5,000
<ul style="list-style-type: none"> Support Washington and Oregon States' emergency preparedness, environmental oversight, Hanford Advisory Board and other related activities. Support Washington State Department of Ecology's Resource Conservation and Recovery Act mixed waste fee and Washington State Department of Health's air emissions monitoring invoice and payment-in-lieu-of-taxes to Grant, Benton, and Franklin Counties. 	<ul style="list-style-type: none"> Support Washington and Oregon States' emergency preparedness, environmental oversight, Hanford Advisory Board and other related activities. Support Washington State Department of Ecology's Resource Conservation and Recovery Act mixed waste fee and Washington State Department of Health's air emissions monitoring invoice and payment-in-lieu-of-taxes to Grant, Benton, and Franklin Counties. 	<ul style="list-style-type: none"> The decrease reflects completion of required land transfers for economic development.

Nuclear Facility D&D-Remainder of Hanford (PBS: RL-0040)

Overview

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

This PBS scope includes implementation of various Hanford Site cleanup initiatives: cleanup of radioactivity and chemical contamination in about 1,000 waste sites with potential impact to groundwater and approximately 500 facilities primarily on the Central Plateau; continuing direct support for site-wide activities including rent, information technology and site-wide support services contracts; and infrastructure operations and maintenance. 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. Following the assessment activities for the Central Plateau through the remedial decision process under PBS RL-0030, remedial design and implementation will be performed under PBS RL-0040. This PBS workscope includes the physical cleanup of these waste sites and facilities.

Nuclear Facility D&D-Remainder of Hanford - 2035 (PBS: RL-0040)

Activities and Explanation of Changes

FY 2015 Enacted	FY 2016 Request	Explanation of Changes FY 2016 vs FY 2015
\$65,922	\$88,874	+\$22,952
<ul style="list-style-type: none"> • Provide site-wide services of day-to-day operations of general utilities, fire department, and analytical services. Site-wide services are prorated across the PBS's. • Support surveillance and maintenance activities necessary to ensure safety for waste sites and facilities. Also supports ES&H oversight, quality management, safety and job hazards analysis, and technical support. • Provide steam for critical site heating systems, occupational medicine, Bonneville Power Administration electricity, litigation support, General Services Administration office space rent 	<ul style="list-style-type: none"> • Provide site-wide services of day-to-day operations of general utilities, fire department, and analytical services. Site-wide services are prorated across the PBS's. • Support surveillance and maintenance activities necessary to ensure safety for waste sites and facilities. Also supports ES&H oversight, quality management, safety and job hazards analysis, and technical support. • Provide steam for critical site heating systems, occupational medicine, Bonneville Power Administration electricity, litigation support, General Services Administration office space rent 	<ul style="list-style-type: none"> • The increase reflects critical infrastructure activities to support safe cleanup operations and the Waste Treatment and Immobilization Plant.

and Land Conveyance efforts.

and Land Conveyance efforts.

- Support infrastructure systems and projects to ensure critical utilities, roads and facility systems are adequate for continued safe operations and uninterrupted low-activity waste operations at the Waste Treatment and Immobilization Plant.
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Nuclear Facility D&D-River Corridor Closure Project (PBS: RL-0041)

Overview

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

The River Corridor Closure Project addresses the remediation of contaminated soils and facilities adjacent to the Columbia River. This project will remediate waste sites; deactivate, decontaminate, decommission, and demolish associated facilities; and place the old 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. This PBS also operates the Environmental Restoration Disposal Facility to support the disposal of wastes generated during the cleanup of the Hanford site.

Nuclear Facility D&D-River Corridor Closure Project (PBS: RL-0041)

Activities and Explanation of Changes

FY 2015 Enacted	FY 2016 Request	Explanation of Changes FY 2016 vs FY 2015
\$311,866	\$108,083	-\$203,783
<ul style="list-style-type: none"> Provide site-wide services for day-to-day operations of general utilities, fire department, and analytical services; and continued operations of specific key utilities (water, sewer electrical) in those same areas. Provide River Corridor Closure Project remediation and disposal of deactivation, decommissioning, decontamination and demolition and field remediation of remaining contaminated waste site and facilities (excluding primarily the 324 Facility deactivation, decommissioning, decontamination and demolition, the 300-296 waste site and the high risk 618-11 Burial Ground). Work accomplishes 	<ul style="list-style-type: none"> Provide site-wide services for day-to-day operations of general utilities, fire department, and analytical services; and continued operations of specific key utilities (water, sewer electrical) in those same areas. Continue operation of the Environmental Restoration Disposal Facility for disposal of low-level radioactive, hazardous, and mixed wastes generated during Hanford cleanup. Support safe activities for K Area Remediation. Continue remediation of the highly radioactive waste site 300-296 waste located beneath the 324 Building (i.e., the Radiochemical Engineering Complex), in the 300 Area close to the City of 	<ul style="list-style-type: none"> The decrease reflects completed scope and technical challenges associated with the 324 Facility deactivation, decommissioning, decontamination and demolition, remediation of 618-10/11, and waste site remediation in the 100-K Area causing schedule delays.

the Hanford cleanup vision through: 1.) deactivation, decommissioning, decontamination and demolition and/or remediation in the 100 Area, 300 Area, and 600 Area; and 2.) waste transportation, treatment and disposal in the 200 Area at the Environmental Restoration and Disposal Facility.

- Complete the River Corridor Closure Project interim response actions for 100-D (20 sites), 100-H (5 sites), 100-IU-2/6 Areas (36 sites), and disposition of the 300 Area Surplus Facilities excluding 324 Building; and continue remediation of the 100-N waste sites.
- Continue remediation of the highly radioactive waste site 300-296 waste located beneath the 324 Building (i.e., the Radiochemical Engineering Complex), in the 300 Area close to the City of Richland.
- Support safe activities for K Area Remediation.
- Initiate 618-10 burial ground vertical pipe units field remediation.
- Initiate remediation planning for the high risk 618-11 burial ground.

Richland.

- Complete 100 Area and 300 Area field remediation except the 100 K Area.

Nuclear Facility D&D-Fast Flux Test Facility Project (PBS: RL-0042)

Overview

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

This PBS scope includes deactivation and decommissioning of 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 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 Fast Flux Test Facility Project has completed the sodium drain from the Fast Flux Test Facility to the Sodium Storage Facility, stored the reactor nuclear fuel and placed the facility in long-term surveillance and maintenance.

Nuclear Facility D&D-Fast Flux Test Facility Project (PBS: RL-0042)

Activities and Explanation of Changes

FY 2015 Enacted	FY 2016 Request	Explanation of Changes FY 2016 vs FY 2015
\$2,562	\$2,562	0
<ul style="list-style-type: none"> Support long-term safe and compliant surveillance and maintenance for Fast Flux Test Facility and support facilities. This support is required until the residual and bulk sodium is dispositioned and facility deactivation and decommissioning is resumed. Provide site-wide services for facility maintenance and safe keeping. 	<ul style="list-style-type: none"> Support long-term safe and compliant surveillance and maintenance for Fast Flux Test Facility and support facilities. This support is required until the residual and bulk sodium is dispositioned and facility deactivation and decommissioning is resumed. Provide site-wide services for facility maintenance and safe keeping. 	<ul style="list-style-type: none"> No change.

Safeguards and Security (PBS: RL-0020)

Overview

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

The Safeguards and Security Program at the Hanford site protects nuclear materials, equipment, information, facilities, and supports the Hanford remediation and cleanup programs. These activities provide for overall site access security and protection of personnel and government property as part of EM’s overall landlord responsibilities for the 586 square mile Hanford site.

Safeguards and Security (PBS: RL-0020)

Activities and Explanation of Changes

FY 2015 Enacted	FY 2016 Request	Explanation of Changes FY 2016 vs FY 2015
\$63,668	\$67,601	+\$3,933
<ul style="list-style-type: none"> • Provide a Safeguards and Security services program at the Hanford Site, including protection of Category I Spent Nuclear Material for the Richland Operations Office and the Office of River Protection. • Provide site safeguards and security services for both the Richland Operations Office and the Office of River Protection. Including: protection program management, emergency response, Physical Security, information protection, Protective Force, Personnel Security, Cybersecurity and Nuclear Material Control and Accountability. 	<ul style="list-style-type: none"> • Provide a Safeguards and Security services program at the Hanford Site, including protection of Category I Spent Nuclear Material for the Richland Operations Office and the Office of River Protection. • Provide site safeguards and security services for both the Richland Operations Office and the Office of River Protection. Including: protection program management, emergency response, Physical Security, information protection, Protective Force, Personnel Security, Cyber Security and Nuclear Material Control and Accountability. • Continue implementation of revised access controls and common identification standards (Homeland Security Presidential Directive-12). 	<ul style="list-style-type: none"> • The increase supports improvements in cybersecurity.

**Richland
Capital Summary (\$K)**

Total	Prior Years	FY 2014 Enacted	FY 2014 Current	FY 2015 Enacted	FY 2016 Request	FY 2016 vs FY 2015
Capital Operating Expenses Summary (including (Major Items of Equipment (MIE))						
Capital Equipment > \$500K (including MIE)	0	0	0	0	0	0
Plant Projects (GPP and IGPP) (<\$10M)	0	0	4,000	4,000	9,000	14,877
Total, Capital Operating Expenses	0	0	4,000	4,000	9,000	14,877
Capital Equipment > \$500K (including MIE)						
	0	0	0	0	0	0
Total, Capital Equipment (including MIE)	0	0	4,000	4,000	9,000	14,877
Plant Projects (GPP and IGPP) (Total Estimated Cost (TEC) <\$10M)						
<u>Richland</u>						
200-UP-1 Uranium and Tech 99 Remedy Implementation	0	0	4,000	4,000	3,000	0
T&D System Wood Power Poles Testing and Replacement	0	0	0	0	0	8,877
Install Pipeline from 200 BP-5 to 200 W Pump and Treat Facility	0	0	0	0	6,000	1,000
L-781 100D Water Pumps (DFLAW)	0	0	0	0	0	5,000
Total, Richland	0	0	4,000	4,000	9,000	14,877
Total, Plant Projects (GPP and IGPP) (Total Estimated (TEC) <\$10M)	0	0	4,000	4,000	9,000	14,877
Total, Capital Summary	0	0	4,000	4,000	9,000	14,877

General Plant Projects (GPP)

Pursuant to Section 3121 of the Ike Skelton National Defense Authorization Act for FY 2011 (P.L. 111-383), notification is being provided for minor construction with a total estimated cost of more than \$5 million planned for execution or TEC design over \$1 million in FY 2015 and FY 2016.

FY 2015 General Plant Projects

Install pipeline to the Pump and Treat Facility – Hanford

Project Title	Program	TEC	Project Description	FY 2014 Current	FY 2015 Enacted	FY 2016 Request	TEC Design Estimate ^a
Installation of pipeline from the 200-BP-5 operable unit to the 200 West Pump and Treat Facility	Hanford PBS RL-0030	\$7,000,000	The specific project is within the Hanford PBS RL-0030, Soil and Water Remediation and is titled "Installation of pipeline from 200 East Area to the 200 West Pump and Treat Facility." As part of that project, Hanford plans to conduct activities associated with the design, procurement and installation of pipelines to carry contaminated groundwater from the 200 East Area of the Hanford Site to the 200 West Pump and Treat Facility. By installing the pipelines, groundwater originally destined for treatment at the 200 Effluent Treatment Facility (ETF) will be treated at the 200 West Pump and Treat Facility at a significantly lower cost per gallon, and supports the turnover of the 200 ETF to the Office of River Protection.	0	\$6,000,000	\$1,000,000	\$452,000

^a TEC design estimate is included in the TEC total amount of \$7,000,000.

**Richland
Construction Summary (\$K)**

	Total	Prior Years	FY 2014 Enacted	FY 2014 Current	FY 2015 Enacted	FY 2016 Request	FY 2016 vs FY 2015
KW Basin Sludge Removal Project, Hanford Washington (RL-0012)							
SNF Stabilization and Disposition (RL-0012)							
Total Estimate Cost (TEC)	230,355	71,220	21,946	21,946	0	0	0
Other Project Costs (OPC)	77,918	42,404	3,465	3,465	0	0	0
Subtotal, KW Basin Sludge Removal Project, Hanford Washington (RL-0012)	308,273	113,624	25,411	25,411	0	0	0
15-D-401, KW Basin Sludge Removal Project, Hanford Washington (RL-0012)							
Total Estimate Cost (TEC)	0	0	0	0	46,055	77,016	+30,961
Other Project Costs (OPC)	0	0	0	0	5,043	6,407	+1,364
Subtotal, 15-D-401, KW Basin Sludge Removal Project, Hanford Washington (RL-0012)	0	0	0	0	51,098	83,423	+32,325
Total Project Cost (TPC) 15-D-401	308,273	113,624	25,411	25,411	51,098	83,423	+32,325

15-D-401
KW Basin Sludge Removal Project, Hanford, WA
Project is for Design and Construction

1. Summary and Significant Changes

Significant Changes:

This Project Data Sheet is an update to the FY 2015 President’s budget request.

Summary:

This project was originally executed as an operating expense funded project. Beginning in FY 2015, EM requested that the Total Estimated Cost (TEC) of this project be appropriated in the capital line item construction account.

Changes to this project data sheet financial schedule result from a project re-planning effort performed in FY 2014 to prepare for transition from an Operations Project to a Capital Line Item. The project will undergo an External Independent Review and then be presented for approval to the Acquisition Executive. Upon completion of the re-baseline effort this Project Data Sheet will be formally revised and submitted to Congress.

The most recent approved Critical Decision is Critical Decision-2/3 that was approved on 2/3/2014 by the Richland Manger with a total Project Cost (TPC) of \$308,273,000 and Critical Decision-4 in the 4th quarter of FY 2018. An External Independent Review (EIR) for DOE O 413.3B approved CD-2/3 is planned for FY 2015.

A Federal Project Director has been assigned to this project. The Federal Project Director has approved this updated Project Data Sheet.

This Project Data Sheet does not include a new start for the FY 2015.

2. Critical Decision (CD) and D&D Schedule

	(fiscal quarter or date)							
	CD-0	CD-1	Design Complete	CD-2	CD-3	CD-4 ^a	D&D Start	D&D Complete
FY 2015 Request	07/03/2007	06/17/2010	02/03/2014	02/03/2014	02/03/2014	2QFY2018	N/A	N/A
FY 2016 Request	07/03/2007	06/17/2010	02/03/2014	TBD	TBD	TBD	N/A	N/A

^a Critical Decision-4 for this line item will be at the start of Engineered Container Retrieval and Transfer System (ECRTS) operations.

- 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-3A Long Lead Procurement
FY 2015 Request	2QFY2014	2QFY2012
FY 2016 Request	TBD	2QFY2012

CD-3A – Procurement of long lead equipment and construction of the KW Basin Annex Building with associated building systems. The annex used to house and install equipment when received, which is compatible with other ongoing K Basin activities. Prior to 2015, this project had been an operations activity following the tenets of DOE O 413.3B with a tailored approach to the Critical Decision levels. The above dates for Critical Decision levels are based on the RL approved tailored levels only. The Performance Management Baseline is submitted, reviewed and authorized for performance each fiscal year. The validation date above is the date the baseline for the tailored Critical Decision-3A was initially validated.

3. Baseline and Validation Status

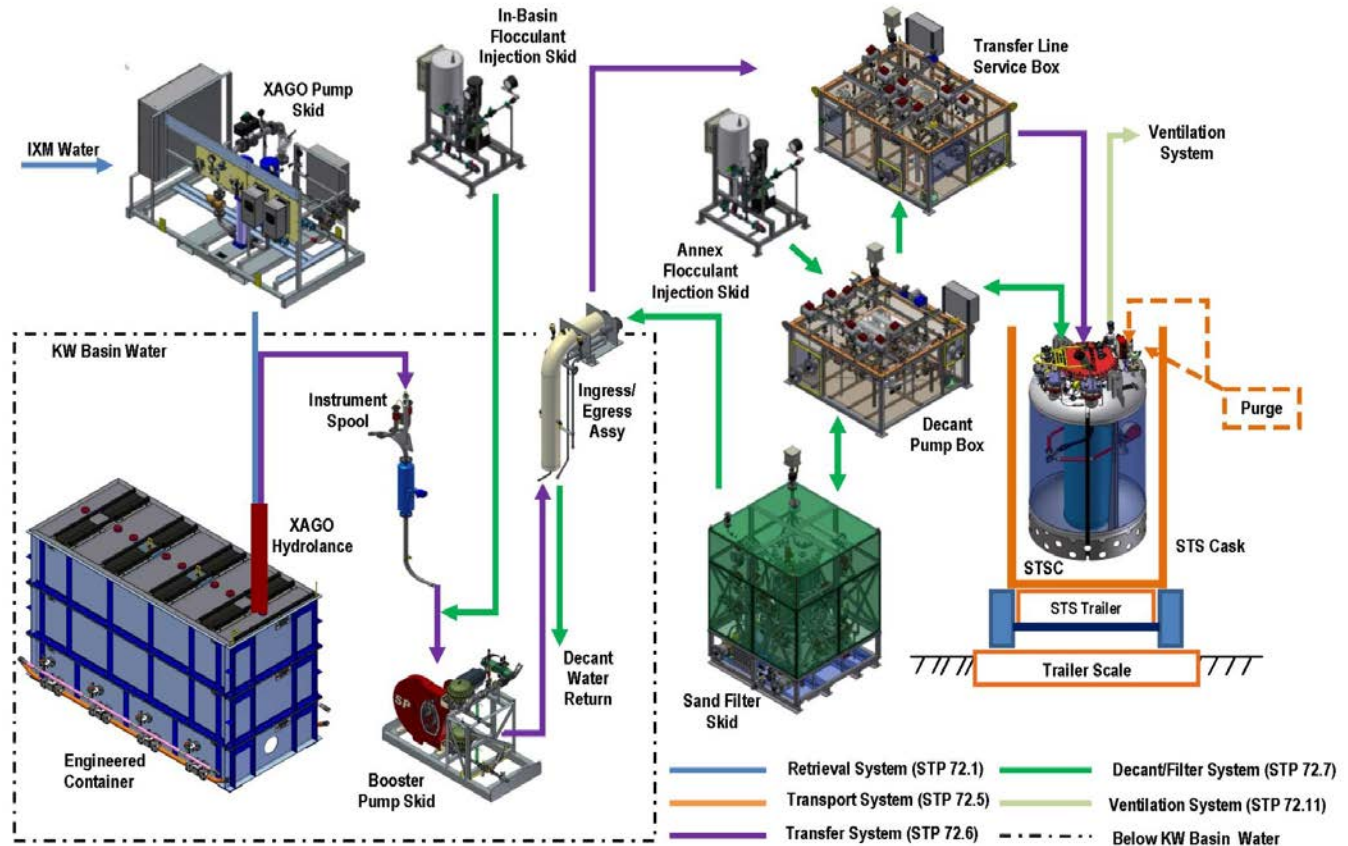
	(dollars in thousands)						
	TEC, Design	TEC, Construction	TEC, Total	OPC Except D&D	OPC, D&D	OPC, Total	TPC
FY 2015 Request	41,072	189,283	230,355	77,918	N/A	77,918	308,273
FY 2016 Request	41,072	189,283	230,355	77,918	N/A	77,918	308,273

4. Project Description, Scope, and Justification

Mission Need

The consolidated sludge in KW Basin originated from previous recovery campaigns. This sludge is highly radioactive and poses a threat to the nearby Columbia River. Retrieval of this material requires specialized, engineered equipment and special precautions to ensure the safety of the public, workers and the environment. This project will design, install and operate a system to safely remove this material and transport it to T Plant in the Central Plateau for temporary storage. A simplified illustration of this system is pictured below.

Engineered Container Retrieval and Transfer System Simplified Flow Diagram



Scope and Justification

The scope of this project, A-21C, is to design, procure, construct, test, and commission an integrated set of process/systems to remove radioactive sludge currently stored in the KW Basin. The system being constructed and installed in the 105KW Basin is composed of the following components:

1. Xago Hydrolance Retrieval tool
2. Overfill recovery tool
3. Positive displacement booster pump
4. Sludge Transport and Storage Containers (STSC) and trailer
5. Transfer line service box
6. Decant pump box
7. Sand Filter
8. Flocculant Addition systems
9. Transfer Hose system
10. Ventilation System
11. Instrumentation & Controls System

In addition, the project includes the Sludge Treatment Project Modified KW Basin Annex which is being constructed to accommodate the Engineered Container Retrieval and Transfer System process equipment and provide a Sludge Transport and Storage Containers loading bay to support sludge packaging and transfer. The Sludge Treatment Project Modified KW Basin Annex will be a Hazard Category 2 facility, with a design life of five years. The Sludge Treatment Project annex mission life is expected to be one year. The Sludge Treatment Project Modified KW Basin Annex will include a Sludge Transport and Storage Containers loading bay, a mechanical equipment room, process HVAC system, a high-efficiency particulate air

(HEPA) filter room, and a change room. The Transfer Line Service Box, Decant Pump Box, and Annex Flocculant Addition Skid will be located on the mezzanine level in the Annex. The Sand filter will be located in the Sludge Transport and Storage Containers loading bay below the mezzanine level.

The Engineer Container Retrieval and Transfer System Subproject encompasses the disposition of the sludge that is contained in engineer containers #210, 220, 230, 240, 250, and 260. Sludge Treatment Project recommended a two-phase retrieval, storage, and packaging strategy in HNF-39744, *Sludge Treatment Project Alternatives Analysis Summary Report*, and RL approved that approach in correspondence 09-AMRC-0173, "Contract KBC-30811, Rev. 6 Sludge Treatment Project – Project Execution Plan 1-6 No. DE-AC06-08RL14788 - External Technical Review of the Hanford K Basins Sludge Treatment Project."

There were two technology readiness assessments (TRAs) conducted for this project in 2009 and 2012. The most recent TRA, conducted to support CD 2/3 approval by the RL Manager, concluded that the various technology elements demonstrated a high level of confidence for successful operation. Also in support of the CD 2/3 decision an EM-led Independent Project Review (IPR) was conducted in October 2013. As part of bringing the project into full compliance with DOE Order 413.3B, an External Independent Review (EIR) is planned to be scheduled during FY15.

5. Financial Schedule

(dollars in thousands)

Appropriations	Obligations	Costs
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Total Estimated Cost (TEC)

Design

FY 2010	N/A	N/A	11,468
FY 2011	N/A	N/A	11,933
FY 2012	N/A	N/A	12,457
FY 2013	N/A	N/A	4,714
FY 2014	N/A	N/A	500
Total, Design	N/A	N/A	41,072

Construction

FY 2012	N/A	N/A	10,117
FY 2013	N/A	N/A	20,031
FY 2014 ^(a)	N/A	N/A	34,961
FY 2015 ^(a)	N/A	N/A	46,055
FY 2016 ^(a)	N/A	N/A	77,016
Outyears	N/A	N/A	TBD
Total, Construction	N/A	N/A	TBD

TEC

FY 2010	11,468	11,468	11,468
FY 2011	11,933	11,933	11,933
FY 2012	22,574	22,574	22,574
FY 2013	24,745	24,745	24,745
FY 2014 ^(a)	35,461	35,461	35,461
FY 2015 ^(a)	46,055	46,055	46,055
FY 2016 ^(a)	77,016	77,016	77,016
Outyears	TBD	TBD	TBD
Total, TEC	TBD	TBD	TBD

Other Project Cost (OPC)

	(dollars in thousands)		
	Appropriations	Obligations	Costs
OPC except D&D			
FY 2009	13,388	13,388	13,388
FY 2010	10,165	10,165	10,165
FY 2011	7,912	7,912	7,912
FY 2012	6,557	6,557	6,557
FY 2013	4,383	4,383	4,383
FY 2014 ^(a)	5,609	5,609	5,609
FY 2015 ^(a)	5,043	5,043	5,043
FY 2016 ^(a)	6,407	6,407	6,407
Outyears	TBD	TBD	TBD
Total, OPC except D&D	TBD	TBD	TBD
OPC			
FY 2009	13,388	13,388	13,388
FY 2010	10,165	10,165	10,165
FY 2011	7,912	7,912	7,912
FY 2012	6,557	6,557	6,557
FY 2013	4,383	4,383	4,383
FY 2014 ^(a)	5,609	5,609	5,609
FY 2015 ^(a)	5,043	5,043	5,043
FY 2016 ^(a)	6,407	6,407	6,407
Outyears	TBD	TBD	TBD
Total, OPC	TBD	TBD	TBD
Total Project Cost (TPC)			
FY 2009	13,388	13,388	13,388
FY 2010	21,633	21,633	21,633
FY 2011	19,845	19,845	19,845
FY 2012	29,131	29,131	29,131
FY 2013	29,128	29,128	29,128
FY 2014 ^(a)	41,070	41,070	41,070
FY 2015 ^(a)	51,098	51,098	51,098
FY 2016 ^(a)	83,423	83,423	83,423
Outyears	TBD	TBD	TBD
Total, TPC	TBD	TBD	TBD

This project was originally executed as a capital asset operating project. Beginning in FY 2015, EM determined that this project will be funded as a capital line item construction project. This data sheet includes a full accounting of the total project cost including budget authority requested or received in prior years. Project has been funded to date through PBS RL-0012.

- (a) Changes result from a project re-planning effort performed in FY 2014 to prepare for transition from an Operations Project to a Capital Line Item. The project will undergo an External Independent Review and then be presented for approval to the Acquisition Executive. Upon completion of the re-baseline effort this Project Data Sheet will be formally revised and submitted to Congress.

6. Details of Project Cost Estimate

(dollars in thousands)

Current Total Estimate	Previous Total Estimate	Original Validated Baseline
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Total Estimated Cost (TEC)

Design			
Design	41,072	41,072	41,072
Contingency	0	0	0
Total, Design	41,072	41,072	41,072

Construction			
Equipment	TBD	39,604	39,604
Construction	TBD	98,133	98,133
Contingency	TBD	51,546	51,546
Total, Construction	TBD	189,283	189,283

Total, TEC	TBD	230,355	230,355
Contingency, TEC	TBD	51,546	51,546

Other Project Cost (OPC)

OPC except D&D			
Testing	TBD	33,539	33,539
Sampling & Analysis	TBD	14,355	14,355
Conceptual Design	TBD	5,603	5,603
Start-Up	TBD	6,100	6,100
Other OPC Costs	TBD	9,321	9,321
Contingency	TBD	9,000	9,000
Total, OPC except D&D	TBD	77,918	77,918

Total, OPC	TBD	77,918	77,918
Contingency, OPC	TBD	9,000	9,000

Total, TPC	TBD	308,273	308,273
Total, Contingency	TBD	60,546	60,546

7. Schedule of Appropriation Requests

((\$K)

		Prior Years	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2019	Outyears	Total
FY 2015 Request	TEC	93,166	26,290	62,604	34,588	13,707	0	0	0	230,355
	OPC	45,869	5,344	7,756	8,754	10,195	0	0	0	77,918
	TPC	139,035	31,634	70,360	43,342	23,902	0	0	0	308,273

FY 2016 Request	TEC	106,181	46,055	77,016	TBD	TBD	0	0	TBD	TBD
	OPC	48,014	5,043	6,407	TBD	TBD	0	0	TBD	TBD

	TPC	154,195	51,098	83,423	TBD	TBD	0	0	TBD	TBD
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8. Related Operations and Maintenance Funding Requirements

Start of Operation or Beneficial Occupancy (fiscal quarter or date)	4Q FY2018
Expected Useful Life (number of years)	1
Expected Future Start of D&D of this capital asset (fiscal quarter)	TBD

The facility housing the system is the 105KW Basin that must maintain operations during the Engineered Container Retrieval and Transfer System operations.

The operations of this system is being used to transfer the KW Basin sludges from the existing engineered containers in the Basin to the Sludge Transfer and Storage Containers to be transported to the interim storage in the Central Plateau away from the river.

(Related Funding requirements)

(dollars in thousands)

	Annual Costs		Life Cycle Costs	
	Current Total Estimate	Previous Total Estimate	Current Total Estimate	Previous Total Estimate
ECRTS Operations	TBD		16,045	
Utilities	0		0	
Maintenance & Repair	0		0	
Total	TBD		16,045	

9. Required D&D Information

Area	Square Feet
Area of new construction	(a)
Area of existing facility(s) being replaced and D&D'd by this project	
Area of additional D&D space to meet the "one-for-one" requirement from the banked area	Compensated by bank sq. ft.

(a) Richland is modifying an existing facility to change the capabilities.

10. Acquisition Approach

The project acquisition strategy is the use of the existing Richland Prime contractor under the existing Cost Price plus Incentive Fee Plateau Remediation Contract and the subcontractors for Plateau Remediation Contract. The KW Sludge Removal Project was included in the scope of the Plateau Remediation Contract that was awarded by the DOE in 2008.

River Protection

Overview

The Office of River Protection will support the Department's Strategic Plan to continue the cleanup of radioactive and chemical waste resulting from the Manhattan Project and Cold War activities. The mission of the Department's Office of River Protection is to remove waste from the past production of nuclear materials stored in the underground tank farms at the Hanford Site, treat the waste to standards that are protective of human health and the environment, prepare the waste for permanent disposal, close the tanks, and decommission the treatment facilities.

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. The 586 square mile Hanford Site is located along the Columbia River in southeastern Washington State and is home to the world's first plutonium production complex. Beginning with the Manhattan Project and throughout the Cold War, Hanford played a pivotal role in providing nuclear materials for the nation's defense program. However, more than 40 years of plutonium production also yielded a challenging nuclear waste legacy—approximately 56 million gallons of radioactive and chemical waste stored in 177 underground tanks (tank farms) located on Hanford's Central Plateau, 7 miles from the Columbia River. Hanford tanks contain a complex and diverse mix of radioactive and chemical waste in the form of sludge, salts and liquids, necessitating a variety of unique waste retrieval and treatment methods. While the radioactive nature of the waste—with 176 million curies—requires remote-operated equipment and shielded facilities for the high-level waste, the uncertainty and diversity of the physical and chemical properties of the 56 million gallons of waste make the mission uniquely complex.

The Department is working aggressively to construct and operate the treatment facilities and infrastructure to safely immobilize and dispose of Hanford's tank waste. As planned, the Waste Treatment and Immobilization Plant at Hanford will include five facilities: (1) Analytical Laboratory; (2) Balance of Facilities; (3) Low-Activity Waste Facility; (4) High-Level Waste Facility; and (5) Pretreatment Facility. The construction of additional facilities to support the operation of these five facilities is also planned. The plant is being designed to process tank farm waste over roughly a 40-year period. The original plan required waste to be processed through the Pretreatment Facility, where it will be separated into a low-activity waste stream to be vitrified in the Low-Activity Waste Facility and a high-level waste stream to be vitrified in the High-Level Waste Facility. The Analytical Laboratory and Balance of Facilities support these vitrification activities. Since significant technical issues must be resolved for the Pretreatment and to a lesser degree for the High Level Waste Facilities, the Department is prioritizing construction of the Low-Activity Waste Facility, Balance of Facilities and Analytical Laboratory; the work necessary to feed low-activity waste directly to the Low-Activity Waste Facility instead of routing it through the Pretreatment Facility (an approach called Direct Feed Low Activity Waste (DFLAW)); and on resolving the technical issues. The Department is focusing on the start-up and operations of these facilities as they are nearest to completion.

Consistent with the Department's focus on the completion of the Low-Activity Waste Facility, the Balance of Facilities, and the Analytical Laboratory in order to commence the immobilization of waste as soon as practicable without waiting for completion of the Pretreatment and High-Level Waste Facilities, the FY 2016 budget includes support for analysis and preliminary design of a Low Activity Waste Pretreatment System. DOE's focus allows it to address the most mobile tank waste, the supernate, in the near term while in parallel working to resolve the technical issues associated with the High-Level Waste and Pretreatment Facilities.

The cost of direct maintenance and repair activities at the Office of River Protection is estimated to be \$78,592,000.

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, subject to DOE's authority under the Atomic Energy Act. It is a framework for implementing many of the environmental regulations that apply to Hanford. More specifically, the Tri-Party Agreement includes but is not limited to (1) cleanup commitments, and

(2) enforceable milestones to achieve regulatory compliance and remediation. In addition, the Office of River Protection's activities must also comply with the October 25, 2010 Consent Decree entered in the case of *State of Washington v. United States Department of Energy*, No. 08-5085-FVS (E.D. Wash.). The Consent Decree covers certain work and scheduled activities for the Waste Treatment and Immobilization Plant and Tank Farms. On October 3, 2014, the Department of Energy and the State of Washington filed competing motions requesting the Court to modify the Consent Decree. The scheduled briefing of these motions has been completed, and the Court has scheduled oral argument on February 19, 2015. The Court's ruling on these motions could change the Department's current Consent Decree obligations.

Contractual Framework

Program planning and management at the Office of River Protection is conducted through the issuance and execution of contracts to large and small businesses. The Office of River Protection develops near- and long-term planning approaches in order to develop contract strategies and program/project plans at a more detailed level. Selected contractors then execute these plans to complete cleanup in accordance with the terms of the contracts. Current contracts at the site include:

- Bechtel National, Inc., for coordinating the construction of Hanford's Waste Treatment Plant for the period 12/11/00 - 08/15/19. It is a cost plus award fee completion contract.
- Washington River Protection Solutions, LLC, for safely managing the 56 million gallons of radioactive tank waste until it is prepared for disposal. The contract covers the period from 05/29/08 - 09/30/13, with option period one 10/1/13 - 09/30/16 and option period two 10/1/16 - 09/30/18. The Department has exercised option period one. It is a cost plus award fee term contract.
- Advanced Technologies and Laboratories International, Inc., to operate the laboratory complex for analysis of highly radioactive samples in support of all Hanford projects. The contract covers the period from 11/20/09 - 11/19/11, with extension options through June 2015. The contract is a cost plus award fee term contract being performed by a small business. There is an ongoing acquisition for the replacement contract for high level waste lab services.

Highlights of the FY 2016 Budget Request

The Office of River Protection's FY 2016 budget request represents planned efforts for continued achievement of important cleanup progress required by the Consent Decree and Tri-Party Agreement. In summary, the Office of River Protection budget request is designed to maintain safe operations for the tank farms; to achieve progress in meeting regulatory commitments; to enable the development of infrastructure necessary to enable waste treatment operations; to continue construction focus on the Low-Activity Waste Facility, Balance of Facilities and Analytical Laboratory; to resolve significant technical issues with the Pretreatment and the High-Level Waste Facilities; and to protect workers, the public and environment.

As the design and construction of the Waste Treatment and Immobilization Plant progressed, a number of technical issues have emerged involving the tank farms, the Waste Treatment and Immobilization Plant, and the interfaces between the two. As previously noted, the technical issues in the Waste Treatment and Immobilization Plant are primarily associated with the Pretreatment Facility and, to a lesser degree, the High-Level Waste Facility. Since the current design requires all waste to flow through the Pretreatment Facility, these technical issues impact the Office of River Protection's overall ability to begin treating Hanford's tank waste. The majority of ongoing work associated with the High-Level Waste Facility is focused on completing the facility design. In addition, DOE suspended all of the construction work on the Pretreatment Facility to focus on resolving the Pretreatment Facility technical issues. The timing of resolution of these issues will determine when construction activities can increase on the High-Level Waste Facility and begin again on the Pretreatment Facility.

The FY 2016 request includes funding for two line-item projects: 1) 01-D-416, the Waste Treatment and Immobilization Plant (\$690,000,000) and 2) 15-D-409, the Low Activity Waste Pretreatment System (\$80,000,000). The mission of the Waste Treatment and Immobilization Plant project is to construct a treatment facility to blend waste from the tank farms with molten glass and pour it into stainless steel canisters suitable for long-term storage in the case of high-level waste and disposal in the case of low-level waste. The mission of the Low Activity Waste Pretreatment System is to remove tank waste solids and cesium to supply a low activity waste feed stream directly to the Low Activity Waste Facility. Of the \$80,000,000 requested for this project 15-D-409, \$75,000,000 will support design activities and \$5,000,000 for other project costs funded within PBS ORP-0014, Radioactive Liquid Tank Waste Stabilization and Disposition. DOE's proposal to

the Court to amend the Consent Decree has a milestone to complete Direct Feed Low Activity Waste (DFLAW) hot commissioning by December 31, 2022.

Strategic Management

To maximize near-term risk reduction and leverage Waste Treatment and Immobilization Plant facilities as they are completed, the Department is implementing a strategy to complete the Waste Treatment and Immobilization Plant in phases in order to successfully complete the Hanford tank waste mission. The strategy accounts for the full scope of the technical challenges associated with the Pretreatment Facility and High-Level Waste Facility, and the current construction timelines for the individual Waste Treatment and Immobilization Plant facilities. DOE is currently focused on completing the design, procurement and construction of the Low-Activity Waste Facility, Balance of Facilities and Analytical Laboratory. Most of the Balance of Facilities is expected to be completed in the near future, followed by the Analytical Laboratory, and then the Low-Activity Waste Facility. Startup and commissioning activities for these facilities will follow completion of construction.

River Protection

Funding (\$K)

	FY 2014 Enacted	FY 2014 Current	FY 2015 Enacted	FY 2016 Request	FY 2016 vs FY 2015
Defense Environmental Cleanup					
Office of River Protection					
Tank Farm Activities					
ORP-0014 / Radioactive Liquid Tank Waste Stabilization and Disposition	520,216	520,216	545,000	724,000	+179,000
Waste Treatment and Immobilization Plant					
ORP-0060 / Major Construction-Waste Treatment Plant	690,000	690,000	667,000	690,000	+23,000
Total, Office of River Protection	1,210,216	1,210,216	1,212,000	1,414,000	+202,000

River Protection Explanation of Major Changes (\$K)

FY 2016 vs FY 2015

Defense Environmental Cleanup

Office of River Protection

Tank Farm Activities

ORP-0014 / Radioactive Liquid Tank Waste Stabilization and Disposition

- Increase reflects a ramp up of design activities for the Low Activity Waste Pretreatment System project. The increase also reflects the activities required in the tank farms to support the direct feed Low Activity Waste initiative and A/AX single shell tank retrievals.

+179,000

Waste Treatment and Immobilization Plant

ORP-0060 / Major Construction-Waste Treatment Plant

- An increase of \$23,000,000 will support the design, procurement and construction of the Low-Activity Waste Facility, Balance of Facilities and Analytical Laboratory, and will continue to support the resolution of the technical issues in the Pretreatment and High-Level Waste Facilities.

+23,000

Total, River Protection	+202,000
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Radioactive Liquid Tank Waste Stabilization and Disposition (ORP-0014)

Overview

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

This project includes activities required to stabilize approximately 56 million gallons of radioactive waste stored underground in 177 tanks, including retrieval, treatment, disposal and closure of the facilities. Up to sixty-seven tanks are assumed to have leaked a total of about one million gallons of waste into the soil. Ultimately, the majority of the waste must be processed to a form suitable for disposal.

The scope of this PBS also includes the planning, design, and construction of the Low Activity Waste Pretreatment System project. The Low Activity Waste Pretreatment System would remove tank waste solids and cesium to produce a Low Activity Waste feed stream that meets the waste acceptance criteria of the Waste Treatment and Immobilization Plant Low Activity Waste vitrification facility. DOE’s proposal to the Court to amend the Consent Decree has a milestone to complete Direct Feed Low Activity Waste (DFLAW) hot commissioning by December 31, 2022.

Radioactive Liquid Tank Waste Stabilization and Disposition (PBS: ORP-0014)

Activities and Explanation of Changes

FY 2015 Enacted	FY 2016 Request	Explanation of Changes FY 2016 vs FY 2015
\$545,000	\$724,000	+\$179,000
<ul style="list-style-type: none"> Maintain Tank Farms in a safe and compliant manner. Conduct 222-S Laboratory operations and upgrades. Conduct 242-A Evaporator campaigns and upgrades. Continue Single-Shell and initiate Double Shell Integrity activities. Complete C-Farm retrievals and associated retrieval data reports. Continue removal of hose-in-hose transfer lines. Initiate DNFSB 2012-2 ventilation system upgrades. Initiate AP Farm Feed Delivery System activities. Initiate preliminary design of Low Activity Waste 	<ul style="list-style-type: none"> Maintain Tank Farms in a safe and compliant manner. Continue 222-S Laboratory operations. Continue 242-A Evaporator campaigns. Continue Effluent Treatment Facility operations. Conduct Single-Shell/Double Shell Tank Integrity assessments. Continue tank farms preventive/corrective maintenance activities. Initiate Direct Feed Low Activity Waste Initiative. Perform AP-107 design for feed to Low Activity Waste Pretreatment System. Continue design of the Low Activity Waste Pretreatment System project. Conduct A/AX SST retrievals. 	<ul style="list-style-type: none"> Increase reflects a ramp up of design activities for the Low Activity Waste Pretreatment System project. The increase also reflects the activities required in the tank farms to support the direct feed Low Activity Waste initiative and A/AX single shell tank retrievals.

- Pretreatment System project.
 - Continue AY/AZ Farm ventilation system upgrades.
 - Continue AY and AZ Farm Feed Delivery System activities.
 - Initiate design work for the L-780 electrical upgrade project.
 - Continue design activities for the L-780 electrical upgrade project and initiate construction activities.
-

Major Construction-Waste Treatment Plant (PBS: ORP-0060)

Overview

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

The Waste Treatment and Immobilization Plant is critical to the completion of the Hanford tank waste program; it will provide the primary treatment capability to immobilize the radioactive tank waste at the Hanford Site. As planned, the Waste Treatment and Immobilization Plant complex will involve construction of 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, ready for storage. A significant portion of the low-activity waste fraction will be immobilized in the Low-Activity Waste Facility, with the balance immobilized using an additional 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.

Major Construction-Waste Treatment Plant (PBS: ORP-0060)

Activities and Explanation of Changes

FY 2015 Enacted	FY 2016 Request	Explanation of Changes FY 2016 vs FY 2015
\$667,000	\$690,000	+\$23,000
<p>Low Activity Waste Facility -</p> <ul style="list-style-type: none"> • Continue planning and design for a Low Activity Waste Facility direct feed option • Prepare Engineering Design Complete Lists for various systems • Submit Final Documented Safety Analysis to DOE for review and approval • Complete design modification for a Low Activity Waste Facility direct feed option • Continue Permitting Dangerous Waste Permit Application agency packages for Ecology public reviews • Install instrument tubing and racks • Install closed circuit TV equipment • Install Wet Electrostatic Precipitator internals • Complete HVAC duct installation 	<p>Low Activity Waste –</p> <p>Design Activities:</p> <ul style="list-style-type: none"> • Issue Engineering Design Completion Lists for Various Systems including Uninterruptible Power Electrical, C5 Ventilation, Cathodic Protection Electrical, Programmable Protection, Secondary Offgas/Vessel Vent Process • Continue engineering support to construction, Engineering & Nuclear Safety, and commissioning • Continue Permitting Dangerous Waste Permit Application agency packages for Ecology Public Reviews of the Melters • Issue Control Decision Report Revision 0 in support of the Documented Safety Analysis 	<ul style="list-style-type: none"> ▪ An increase of \$23,000,000 will support the design, procurement and construction of the Low-Activity Waste Facility, Balance of Facilities and Analytical Laboratory, and will continue to support the resolution of the technical issues in the Pretreatment and High-Level Waste Facilities.

- Complete Low Activity Waste Facility construction (excluding direct feed scope)

- Melters ready for turnover to Startup

Balance of Facilities-

- Continue system and component level testing in facilities necessary to support the operation of the Low Activity Waste Facility
- Complete construction of the Standby Diesel Generator Facility
- Complete construction of the Anhydrous Ammonia Facility

Analytical Laboratory-

- Begin receiving analytical instrumentation to support the operation of the Low Activity Waste Facility
- Continue development of laboratory methods to support Low Activity Waste Facility sample analysis
- DOE – Approve Documented Safety Analysis Review

High Level Waste-

- Complete HVAC duct and fire barrier design
- Complete melter cave 1 & 2 crane maintenance and decontamination walls to +72ft elevation
- Erect steel for Truck Bay Roof
- Complete Dangerous Waste Permit permitting process for RLD-VSL-007 & RLD-VSL-008
- Resolve technical issues
- Ramp-up engineering, design, and construction of the High-Level Waste Facility and resume procurements in support of construction.

Pretreatment Facility-

- Continue full-scale vessel testing
- Resolve Erosion/Corrosion Technical Issues
- Resolve In-Service Inspection Issue
- Complete revision to design criteria for black cell vessel structural integrity

development

Procurement Activities:

- Deliver Closed Circuit TV system
- Deliver Gas Analyzers
- Deliver Uninterruptible Power Supply

Construction Activities:

- Complete partition wall installation
- Complete Melter #2 brick refractory installation
- Finish +48 bulk piping installation
- Complete the Thermal Catalytic Oxidizer installation
- Install closed circuit TV equipment
- Complete installation of unscheduled cable
- Install Secondary Offgas/Vessel Vent Process equipment panels
- Install communication cable all elevations
- Complete installation of Low-Activity Waste Facility annex instrument enclosures

Startup Activities:

- Continue procedure development

Analytical Laboratory and Balance of Facilities –

Design Activities:

- Analytical Laboratory:
 - o Continue engineering support to construction, Engineering & Nuclear Safety and Commissioning
 - o Issue various Engineering Design Completion Lists including Facility Network Infrastructure, Mechanical Handling Control, Process Control System, Stack Discharge Monitoring
 - o Prepare the Technical Safety Requirements Document for the Documented Safety Analysis
- Balance Of Facilities:
 - o Continue engineering support to

- Provide care and maintenance for the pretreatment facility during construction pause

- o construction and Engineering, Nuclear Safety & Commissioning
- o Issue Engineering Design Completion Lists for various systems including Communications Electrical, High Pressure Steam, Process Control, Ammonia Reagent
- o Complete Emergency Turbine Generator design

Procurement Activities:

- Analytical Laboratory:
 - o Complete procurement of radiation monitoring equipment
- Balance of Facilities:
 - o Equipment procurement for Balance of Facilities modifications in support of Direct Feed Low-Activity Waste Facility

Construction Activities:

- Analytical Laboratory:
 - o Install batteries and racks
- Balance of Facilities:
 - o Complete construction of the Balance of Facilities Anhydrous Ammonia Facility
 - o Complete construction of above ground process piping
 - o Install telecommunication enclosures

Startup Activities

- Analytical Laboratory:
 - o Complete methods development in support of Low -Activity Waste
 - o Start Analytical Laboratory Operations Training (Group 1)
 - o Start Documented Safety Analysis training
- Balance of Facilities:

- o Complete startup acceptance from construction of communications electrical system
- o Complete startup acceptance from construction of Process Control system, including walk downs, for Switchgear Buildings 87 and 91
- o Continue cold commissioning training
- o Start removing and replacing piping flushing spools

High-Level Waste Facility –

Design Activities:

- Complete ventilation system design
- Complete High Efficiency Particulate Air AG-1 Testing and Reporting, High Efficiency Particulate Air filters received for Phase II testing
- Complete dangerous waste permit permitting process for Radioactive Liquid Waste Disposal System Vessel (RLD-VSL-007) and Radioactive Liquid Waste Disposal System Vessel (RLD-VSL-008)
- Update Preliminary Documented Safety Analysis incorporate safety design strategy and gap analysis
- Complete operability review of the remaining systems
- Update Radioactive Liquid Waste Disposal System Vessel Safety Basis Change Package

Procurement Activities:

- Deliver melter cave feed preparation
- Resume procurements in support of construction

Construction Activities

- Complete placement of melter cave 1 and 2 crane maintenance and decontamination

- walls to +72ft elevation
- Ramp up construction and resume Parade of trades in +37ft corridors
- Begin installation of mechanical equipment doors and cable reels in maintenance and decontamination rooms – Melter 1 and 2
- Set Shielded Personnel Access doors: HLW Canister Export Handling System (HEH-DOOR-3), HLW Canister Decontamination Handling System (HDH-DOOR-5), and HLW Melter Cave Support Handling System (HSH-DOOR-18/19)

Startup Activities:

- No Scope

Pretreatment Facility –

Design Activities:

- Complete safety design strategy and initiate system descriptions and Preliminary Documented Safety Analysis update
- Approve decision to proceed with production engineering
- Pretreatment Vessel Vent Process/Process Vessel Vent Exhaust/C5 Ventilation system ventilation issue closure ventilation issues
- Complete resolution technical issues of Criticality; Hydrogen Gas Vessels; Pretreatment Optimization; Erosion/Corrosion
- Complete Radioactive Liquid Waste Disposal System Vessel decommissioning
- Start Full Scale Vessel Testing in 16ft standardized high solids vessel design

Office of River Protection
Capital Summary (\$K)

Total	Prior Years	FY 2014 Enacted	FY 2014 Current	FY 2015 Enacted	FY 2016 Request	FY 2016 vs FY 2015
Capital Operating Expenses Summary (including (Major Items of Equipment (MIE))						
Capital Equipment > \$500K (including MIE)	0	0	0	0	0	0
Plant Projects (GPP and IGPP) (<\$10M)	0	4,952	4,952	8,263	11,190	+2,927
Total, Capital Operating Expenses	0	4,952	4,952	8,263	11,190	+2,927
Capital Equipment > \$500K (including MIE)						
	0	0	0	0	0	0
Total, Capital Equipment (including MIE)	0	4,952	4,952	8,263	11,190	+2,927
Plant Projects (GPP and IGPP) (Total Estimated Cost (TEC) <\$10M)						
<u>River Protection</u>						
SY Farm Exhauster Upgrade	0	4,952	4,952	8,063	0	-8,063
AP Farm Primary Exhauster Replacement	0	0	0	0	2,390	+2,390
Tank Farms Electrical Upgrade	0	0	0	200	8,800	+8,600
	0	4,952	4,952	8,263	11,190	+2,927
Total, Plant Projects (GPP and IGPP) (Total Estimated (TEC) <\$10M)	0	4,952	4,952	8,263	11,190	+2,927
Total, Capital Summary	0	4,952	4,952	8,263	11,190	+2,927

**Office of River Protection
Construction Summary (\$K)**

Total	Prior Years	FY 2014 Enacted	FY 2014 Current	FY 2015 Enacted	FY 2016 Request	FY 2016 vs FY 2015
01-D-416, Waste Treatment and Immobilization Plant, Hanford WA						
<i>01-D-16A-D WTP Subprojects A-D</i>						
Total Estimate Cost (TEC)	7,063,535	5,291,562	510,000	510,000	563,000	595,000 +32,000
Other Project Costs (OPC)	0	0	0	0	0	0
<i>01-D-16E Pretreatment Facility</i>						
Total Estimate Cost (TEC)	5,199,465	3,216,050	180,000	180,000	104,000	95,000 -9,000
Other Project Costs (OPC)	0	0	0	0	0	0
Total Project Cost (TPC) 01-D-416	12,263,000	8,507,612	690,000	690,000	667,000	690,000 +23,000
15-D-409, Low Activity Waste Pretreatment System (Hanford) (ORP-0014)						
Total Estimate Cost (TEC)	TBD	0	0	0	23,000	75,000 +52,000
Other Project Costs (OPC)	TBD	0	4,500	4,500	0	5,000 +5,000
Total Project Cost (TPC) 15-D-409	TBD	0	4,500	4,500	23,000	80,000 +57,000

01-D-416 Waste Treatment and Immobilization Plant, Hanford, WA

Project is for Construction

1. Significant Changes and Summary

Significant Changes

This Project Data Sheet is an update of the FY 2015 President's Budget Request Data Sheet and does not include a new start for FY 2016.

Some values in the "Costs" column in Section 5 for FY 2011 and prior years have been updated based on a recent audit performed to accurately reflect costs as recorded in final DOE cost records after year-end closing entries were finalized.

The FY 2012 and FY 2013 values in the "Costs" column in the tables in Section 5, Financial Schedule, were updated from estimates in the FY 2015 Budget Request to actual costs.

Because of the technical issues the Department has identified and the rebaselining that is necessary, the completion of the Waste Treatment and Immobilization Plant project will exceed the currently approved Total Project Cost. As a result, the DOE and its contractor are currently in negotiations to determine the new contract value and subsequent revised Total Project Cost, as a first priority, for the Low-Activity Waste Facility, Analytical Laboratory, and Balance of Facilities portion of the project. For the High-Level Waste Facility and Pretreatment Facility portion of the project, once the technical issues have been resolved and there is sufficient design completed, a revised estimate to complete these facilities will be prepared. This change represents the forecasted funding needs for FY 2016 and subsequent funding year needs are to be determined.

Summary

The most recent Department of Energy (DOE) O 413.3B approved Critical Decision is Critical Decision -3C, approved on April 21, 2003, with a Total Project Cost of \$5,781,000,000 and Critical Decision -4 of July 2011.

The latest approved Baseline Change was on December 22, 2006, with a Total Project Cost of \$12,263,000,000 with a Critical Decision -4 scheduled for November 2019.

The FY 2016 budget request reflected in this Construction Project Data Sheet is \$690,000,000 and proposes two control points to effectively manage changing conditions and mitigate financial risks.

The Department is in the process of developing a revised performance baseline. However, in the interim, the current approved performance baseline cost of \$12,263,000,000 and Critical Decision -4, Project Completion schedule for November 2019, are utilized for the preparation of this Construction Project Data Sheet.

The Department continues construction of the Low-Activity Waste Facility, Analytical Laboratory and Balance of Facilities and is in the process of rebaselining these facilities. As part of this rebaseline, the Department plans to incorporate the direct feed of the low-activity waste to the Low-Activity Waste Facility configuration, as well as establish a path to complete these facilities.

Once complete, the new performance baseline for the for the Low-Activity Waste Facility, Analytical Laboratory and Balance of Facilities will be available for an External Independent Review and then be presented for approval to the Secretarial Acquisition Executive. Upon completion of the rebaseline effort this Construction Project Data Sheet will be formally revised and submitted to Congress.

In August 2014, the High-Level Waste facility returned to production engineering with limited construction activities continuing in this facility. The assessment of technical issues related to the High-Level Waste Facility is ongoing.

Assessments, planning and remediation of the safety, quality and technical issues related to the Pretreatment Facility are ongoing and will be critical to ensure timely closure of these issues.

The Department continues to focus on strategies and key actions that optimize design, procurement, construction, startup, commissioning and eventual turnover of the Waste Treatment and Immobilization Plant facilities.

A Federal Project Director has been assigned to this project.

Status of Major Technical and Performance Issues

As of the end of August 2014, the Waste Treatment and Immobilization Plant project is making considerable progress in resolving the safety, quality, and technical issues that have been identified as a result of multiple internal and external reviews of the project over the past several years. These reviews have resulted in a series of management actions to assess the root causes of the issues and implement management and process changes that, combined with resolution of technical issues, will facilitate the completion of the design of the facilities and progress on major procurements and construction. In August 2014, the Office of River Protection completed an evaluation process and authorized resumption of full production engineering for the High-Level Waste Facility. The major safety, quality and management processes, and technical issues are summarized below.

Safety Culture: Concerns with the safety culture at the Waste Treatment and Immobilization Plant project were identified and detailed in Defense Nuclear Facility Safety Board Recommendation 2011-1, and further evaluated in independent assessments conducted by the Department of Energy's Office of Health, Safety and Security in 2011 and 2012. Both the Office of River Protection and the Waste Treatment and Immobilization Plant contractor, Bechtel National, Inc., have developed and implemented safety culture improvement plans. The Department is continuing to complete its commitments documented in the Implementation Plan for Defense Nuclear Facility Safety Board Recommendation 2011-1 and in its action plans developed in response to the Office of Health, Safety and Security safety culture assessments.

Technical Issues: The primary Waste Treatment and Immobilization Plant technical issues are associated with the Pretreatment Facility, and to a lesser degree the High-Level Waste Facility. The Pretreatment Facility presents a number of first-of-a-kind technical issues that require additional expert analysis and testing activities to resolve. DOE assembled a Design Completion Team, comprised of personnel from the Office of River Protection, DOE contractors, and the National Laboratories, to provide leadership and oversight for resolution of these issues. The Design Completion Team established five technical sub-teams whose work has been focused on particular issue areas. The work of these teams has evolved such that the project is now focused on nine primary technical issues for the Pretreatment Facility and, where applicable, the High-Level Waste Facility as described below. Table 1 identifies the key technical challenges for the project.

Table 1. Waste Treatment and Immobilization Plant Project Technical Issues by Facility.

Technical Issue	Pretreatment Facility	High-Level Waste Facility
Pulse-Jet Mixing and Control	X	X
Hydrogen Gas Release from Vessel Solids	X	
Criticality in Pretreatment Facility Vessels	X	
Hydrogen in Piping and Ancillary Vessels	X	X
Erosion and Localized Corrosion in Waste Treatment and Immobilization Plant Vessels and Piping	X	X
Design Redundancy in Black Cells/In-Service Inspection	X	X
Black Cell Vessel Structural Integrity	X	X
Facility Ventilation	X	X
Waste Feed Preconditioning Requirements	X	

Pulse-Jet Mixing and Control

Additional testing is required to verify the design of vessels that contain wastes with high solids concentrations and that are installed in areas of the WTP where they must employ non-mechanical, air pressure-operated pulse-jet mixers to mix the wastes. Solids anticipated in some of the pulse-jet mixed vessels, as currently designed, could interfere with waste-level measurements in vessels, which could lead to overflow events (i.e., air discharged out of the pulse-jet mixers into the vessel). The cumulative effect of overflows could exceed the vessel design limits and cause a structural failure of the components within the vessels and impact waste processing.

In early 2014, the Department issued a document titled *U.S. Department of Energy Approach for Resolution of Pulse-Jet Mixed Vessel Technical Issues in the Waste Treatment and Immobilization Plant*, which describes the general plan for the selection and testing of pulse-jet mixed vessels. DOE is pursuing a design solution that would replace, at a minimum, the five large vessel designs in the Pretreatment Facility with a smaller standardized pulse-jet mixed vessel design capable of mixing wastes with high concentrations of solids. This strategy has the potential to substantially reduce the testing cost and schedule duration. According to this plan, two vessels will be tested using full-scale prototypes to obtain information to help resolve the technical issues. Both vessel prototypes represent vessel designs, or vessel design features, that have been previously or will be tested first at smaller scales and demonstrated to mix a

wide variety of solids concentrations. Full-scale testing with the first vessel was initiated in FY 2014 to demonstrate the pulse-jet mixing control system design and operating concepts. The second vessel, a prototype of the new standardized vessel design, will be tested first at a small-scale and then at full-scale in FY 2015 and FY 2016 to demonstrate pulse-jet mixing performance and control system testing over the complete range of fluids and slurries planned to be processed in the Pretreatment Facility.

Hydrogen Gas Release from Vessel Solids

In the current design of the Pretreatment Facility pulse-jet mixed vessels, high solids concentrations expected to be present in some of those vessels, if improperly mixed, could form a sediment layer on the bottom of the vessel resulting in the retention of hydrogen gas. This circumstance could lead to a sudden episodic release of hydrogen into the head space in unacceptably high concentrations, creating a risk of combustion in the unlikely presence of an ignition source. Such a combustion event could breach the containment of the vessel.

Resolution of this issue requires a combination of engineering studies, development of engineered and administrative safety controls, and vessel testing to ensure that any hydrogen gas release into the headspace of Pretreatment Facility vessels can be prevented through effective mixing or safely controlled. Any necessary testing will be completed as a component of the full-scale vessel testing program discussed previously. Addressing hydrogen gas release from solids in Pretreatment Facility vessels is expected to become less complex upon adoption of a smaller, standardized pulse-jet mixed vessel design, which will be designed to more effectively mix these wastes. In addition, better waste feed preconditioning, discussed below, will ensure that wastes are pretreated to reduce the size and density of particles in the wastes, further reducing uncertainty concerning effective mixing in the Pretreatment Facility vessels.

Criticality in Pretreatment Facility Vessels

Up to 16 of the 149 underground single-shell tanks at Hanford may contain plutonium particles of a size and density that could settle on internal surfaces of the pulse-jet mixed vessels as currently designed. If such settling were to occur, the pulse-jet mixers may not be able to re-suspend the particles, and if certain other conditions were present, a sufficient quantity of plutonium could form in a particular geometry that could possibly initiate a criticality (a limited fission event that releases heat and energy).

The issue of an inadvertent criticality in Pretreatment Facility process vessels will be addressed by conducting engineering analyses, testing (if required), and peer reviews utilizing nationally recognized nuclear safety experts. Any testing will be completed as a component of the Full-Scale Vessel Testing program discussed previously and other test programs as required. Similar to hydrogen gas release, inadvertent criticality in process vessels will become less complex to manage with a smaller, standardized pulse-jet mixed vessel design that is more capable of keeping the wastes adequately mixed. The approach for preventing an inadvertent criticality at the Waste Treatment and Immobilization Plant will be documented in an update to the Waste Treatment and Immobilization Plant Criticality Safety Evaluation Report.

Hydrogen in Piping and Ancillary Vessels

The high-level waste slurry is comprised of solids, water, organics, radionuclides, and other chemicals. Due to this composition, the waste may produce hydrogen gas through radiolysis and thermolysis. Should hydrogen accumulate in Waste Treatment and Immobilization Plant pipes or vessels, and if an ignition source were present, conditions could exist that would lead to a deflagration event and, in some cases, transition to a more severe detonation event.

The Department has approved (with conditions) the use of a Quantitative Risk Assessment process for conducting design analyses of Waste Treatment and Immobilization Plant process piping subject to hydrogen gas accumulation in both the High-Level Waste and Pretreatment facilities. The risk-based tools have been reviewed and endorsed by an Independent Review Team of nationally recognized piping design and nuclear safety experts. The Waste Treatment and Immobilization Plant contractor has initiated piping design analyses utilizing the Hydrogen in Piping and Ancillary Vessels quantitative risk assessment tools in the High-Level Waste Facility, and will conduct similar design activities for the Pretreatment Facility at a future date. In addition, the Department has approved the use of the Waste Treatment and Immobilization Plant Project as a pilot for using risk-informed methods in conjunction with its deterministic-based nuclear safety basis methodology to support its documented safety analysis design and development.

Application of these design and nuclear safety basis activities will result in a technical report that specifies the Hydrogen in Piping and Ancillary Vessels design features in the High-Level Waste and Pretreatment Facilities, and a conceptual design for affected piping routes. Testing of remote piping connectors and other components (e.g. valves, instruments) to determine integrity from vibration, seismic and hydrogen events will also be completed and impacts to the designs determined and resolved. All of the above activities will align the safety control strategy with the piping design criteria and result in a design basis that will permit completion of piping designs in both the High-Level Waste and Pretreatment facilities.

Erosion and Localized Corrosion in Waste Treatment and Immobilization Plant Vessels and Piping

As currently designed, the Waste Treatment and Immobilization Plant vessels and piping may not be sufficiently robust to establish sufficiently conservative margins for expected erosive wear, particularly in light of the uncertainties in waste feed characteristics. Failure to incorporate an appropriate level of wall thickness into the piping and vessel designs, combined with potential excessive erosion and corrosion, could lead to wall thinning, an extended work stoppage for repairs, and, in some locations, piping or vessel failure.

A series of comprehensive erosion, corrosion, and synergistic erosion/corrosion tests have been initiated to establish a basis for erosion and localized corrosion design criteria specific to Waste Treatment and Immobilization Plant process conditions. The test program will cover process conditions applicable to both the High-Level Waste and Pretreatment facilities. Required chemistry controls will be identified in the Pretreatment Facility flowsheet and incorporated into corrosion evaluations. Upon completion of the analyses and testing activities, the erosion and localized corrosion design bases for vessels and piping will be validated and used as input for completing the design of the High-Level Waste and Pretreatment Facilities. In advance of completion of the erosion and corrosion test program, an erosion and corrosion risk assessment will be conducted for both facilities (completed in early 2014 for the High-Level Waste Facility) to allow the Department to assess the risk of proceeding with production engineering and design activities.

Design Redundancy in Black Cells and In-Service Inspection

The current design for equipment and components located in “black cells” (isolated plant areas that cannot be accessed by workers or easily accessed by machines) and hard-to-reach areas may not provide adequate redundancies or provide for in-service inspection to support a 40-year design life. The potential exists for major equipment failures before the end of the facility design life due to material defects, fabrication errors, installation deficiencies, or other unforeseen reasons. The piping and equipment in black cells and hard-to-reach areas are not accessible to be monitored for potential signs of degradation, or for repair or recovery, should it become necessary.

A process called Failure Modes, Effects, and Criticality Analysis is being implemented to identify the probability and consequences of equipment and piping failures in High-Level Waste and Pretreatment Facility black cell and hard-to-reach areas. This process will identify potential single-point failure vulnerabilities, inspections or other monitoring that is needed to provide the requisite confidence in achieving predicted design life, and the design and operational contingencies needed to ensure timely recovery and completion of the Waste Treatment and Immobilization Plant Project’s mission should an unforeseen failure of a component occur. In addition, design studies are being conducted for Pretreatment Facility black cells to determine what changes to the Pretreatment Facility will be necessary should the Department adopt a standardized design for the high-solids pulse-jet mixed vessels. These conceptual design studies will support the advancement of the Pretreatment Facility design and inform the decision on use of the standardized vessels.

Black Cell Vessel Structural Integrity

Structural analysis of black cell vessels, especially the pulse-jet mixed vessels, has resulted in the need for significant structural modifications to support components installed in the vessels. The extent and nature of the proposed modifications will require significant project resources and involve complexity in the fabrication and qualification of the new components, posing cost and schedule risks. However, the current seismic categorization of these vessels may be overly conservative. Accordingly, the structural design criteria for these vessels are being reevaluated to assess whether such complex and costly modifications are necessary.

The Waste Treatment and Immobilization Plant Project is using an expert review panel to assess the degree of conservatism in the existing design criteria, analytical methodology, and design configuration; and to identify potential changes in the criteria and methodology. Once the expert review panel has completed its assessment, the project will develop a plan for implementing these criteria changes. Assuming a change is warranted and approved, the vessels in black cells will be reanalyzed using a seismic category that is consistent with the safety classification. In addition, an assessment will be conducted for the High-Level Waste and Pretreatment Facilities of the cost, schedule and technical risk associated with making internal modifications to installed vessels. The risk assessments will be used to inform the decision on final vessel configuration and seismic/safety classification.

Facility Ventilation

In facilities that handle nuclear materials, air handling units are designed and installed to ensure air always flows from the non-contaminated areas to the contaminated areas. A recent project design and operability review of the High-Level Waste Facility indicated air may not flow in the required direction within the facility under some conditions. This could result in the spread of contamination within the facility. In addition, testing has indicated that operational

conditions have the potential to cause the high efficiency particulate air filters to fail due to higher than anticipated aerosol loading onto the filters.

Resolution of the issues related to high efficiency particulate air filter performance requires a combination of testing, design, and safety control strategy development. The Waste Treatment and Immobilization Plant Project is currently working with industry on a redesign of the filter media after which the filters will be retested at Mississippi State University. Additional complementary solutions being considered include alternate safety control strategies and operational flexibilities. Likewise, a design study and alternatives analysis is also being conducted to consider physical changes to the High-Level Waste Facility ventilation systems to ensure appropriate air flows during all off-normal operational and accident scenarios. A design and operability review similar to that conducted for the High-Level Waste Facility will be performed on the Low Activity Waste Facility and Pretreatment Facility ventilation systems, and any required design modifications will be evaluated and implemented as appropriate.

Waste Feed Preconditioning Requirements

Because waste mixing and sampling cannot be accomplished effectively inside the double-shell tanks, the waste to be transferred to the Pretreatment Facility cannot be accurately characterized or shown to comply with expected waste acceptance criteria. Inaccurately characterized waste may not be effectively processed by the Waste Treatment and Immobilization Plant or may not be compliant with the Waste Treatment and Immobilization Plant design basis and/or safety basis.

Important to resolving the technical issues in the Waste Treatment and Immobilization Plant is the proposed Tank Waste Characterization and Staging capability. Waste mixing, sampling, and preconditioning is necessary to ensure the waste acceptance criteria for the Pretreatment Facility and possibly for the High-Level Waste Facility are met. The Tank Waste Characterization and Staging capability will enable the Department to mix, sample, and feed tank waste to the Pretreatment Facility in a predictable and consistent manner. Also, this capability could be designed to provide a method of managing waste projected to be more technically difficult to process, for example by reducing the size of large solid particles in the waste. Lastly, the Tank Waste Characterization and Staging capability will narrow the testing parameters required for pulse-jet mixed vessel testing and support the resolution of technical issues affecting Pretreatment Facility. The Department anticipates completing the first stage of the critical decision process for Tank Waste Characterization and Staging capability under DOE Order 413.3B (mission need approval) in FY 2015.

Because of the progress the contractor has made in resolving the performance and technical issues associated with the High-Level Waste Facility, the Department authorized Bechtel National, Inc. to resume production engineering in August 2014. This production engineering is expected to gradually ramp-up over the course of the year, and will be followed by an increase in construction activities when appropriate. Based on current analysis and testing plans, including full-scale vessel testing, evaluation and resolution of key technical issues is expected to take a minimum of three years for the Pretreatment Facility.

Other Technical Issues: Other engineering and design issues that are currently being addressed by the Waste Treatment and Immobilization Plant project include Waste Treatment and Immobilization Plant uncertainties associated with the safety controls for spray leaks from Waste Treatment and Immobilization Plant process piping and components, heat transfer analysis for Waste Treatment and Immobilization Plant process vessels, engineering issues with design and

construction of the electrical distribution system, and the potential for line plugging in Waste Treatment and Immobilization Plant process piping.

2. Critical Milestone History

(fiscal quarter or date)

	CD-0	Conceptual Design Complete	CD-1	CD-2	Final Design Complete	CD-3	D&D Complete	CD-4
FY 2001	SEP 1995		SEP 1996	AUG 1998	4Q FY2005	OCT 2001	N/A	1Q FY2007
FY 2002	SEP 1995		SEP 1996	4Q FY1998	4Q FY2005	MAY 2002	N/A	1Q FY2007
FY 2003	SEP 1995		SEP 1996	4Q FY1998	4Q FY2005	MAY 2002	N/A	1Q FY2007
FY 2004	SEP 1995		SEP 1996	4Q FY1998	4Q FY2005	MAY 2002	N/A	1Q FY2007
FY 2003 Congressional Notification	SEP 1995		SEP 1996	04/21/2003	4Q FY2005	04/21/2003	N/A	3Q FY2008
FY 2005	SEP 1995		SEP 1996	04/21/2003	4Q FY2005	04/21/2003	N/A	3Q FY2008
FY 2004 Reprogramming	SEP 1995		SEP 1996	04/21/2003	4Q FY2005	04/21/2003	N/A	3Q FY2008
FY 2006	SEP 1995		SEP 1996	04/21/2003	4Q FY2007	04/21/2003	N/A	3Q FY2008
FY 2007	SEP 1995		SEP 1996	04/21/2003	4Q FY2007	04/21/2003	N/A	3Q FY2008
FY 2008	SEP 1995		SEP 1996	04/21/2003	4Q FY2010	04/21/2003	N/A	2Q FY2017
FY 2009	SEP 1995		SEP 1996	04/21/2003	4Q FY2013	04/21/2003	N/A	1Q FY2020
FY 2010	SEP 1995		SEP 1996	04/21/2003	1Q FY2016	04/21/2003	N/A	1Q FY2020
FY 2011	SEP 1995		SEP 1996	04/21/2003	1Q FY2016	04/21/2003	N/A	1Q FY2020
FY 2012	SEP 1995		SEP 1996	04/21/2003	1Q FY2016	04/21/2003	N/A	1Q FY2020
FY 2013	SEP 1995		SEP 1996	04/21/2003	1Q FY2016	04/21/2003	N/A	1Q FY2020
FY 2014	SEP 1995		SEP 1996	04/21/2003	1Q FY2016	04/21/2003	N/A	1Q FY2020
FY 2013 Reprogramming	SEP 1995		SEP 1996	04/21/2003	1Q FY 2016	04/21/2003	N/A	1Q FY 2020
FY 2015	SEP 1995		SEP 1996	04/21/2003	1Q FY2016	04/21/2003	N/A	1Q FY2020

(fiscal quarter or date)

	Conceptual Design Complete	CD-1	CD-2	Final Design Complete	CD-3	D&D Complete	CD-4
FY 2016	SEP 1995	SEP 1996	04/21/2003	1Q FY2016	04/21/2003	N/A	TBD

CD-0 – Approve Mission Need

Conceptual Design Complete – Actual date the conceptual design was completed (if applicable)

CD-1 – Approve Design Scope and Project Cost and Schedule Ranges

CD-2 – Approve Project Performance Baseline

Final Design Complete – Estimated/Actual date the project design will be/was complete(d)

CD-3 – Approve Start of Construction

D&D Complete –Completion of D&D work (see Section 9)

CD-4 – Approve Start of Operations or Project Closeout

PB – Indicates the Performance Baseline

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 ‘Critical Decision 3’ date of 4Q FY 2002 represented the start of physical construction. The FY 2003 Congressional Notification ‘Critical Decision 3’ represents the date approval was granted to begin full construction (Critical Decision 3c).
- 3) The FY 2008 Budget Request ‘Critical Decision 4’ date of 2Q FY 2017 represented the completion of physical construction of the Waste Treatment and Immobilization Plant facilities. In the FY 2009 Budget Request, the ‘Critical Decision 4’ completion date represents the completion of construction, start-up, commissioning and transfer of the Waste Treatment and Immobilization 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.
- 5) The Critical Decision-4 date for the Low Activity Waste Facility will be updated after rebaselining and contract execution for Direct Feed Low Activity Waste, expected in FY2015. The Critical Decision-4 for High Level Waste and the Pretreatment Facilities will be set after similar efforts for these facilities that will occur at an indeterminate future date.

3. Project Cost History

(Fiscal Quarter)

	TEC, Design	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 2011	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
FY 2013 ¹	0	12,263,000	12,263,000	0	0	0	12,263,000
FY 2014 ¹	0	12,263,000	12,263,000	0	0	0	12,263,000
FY 2013 Reprogramming ¹	0	12,263,000	12,263,000	0	0	0	12,263,000
FY 2015 ¹	0	12,263,000	12,263,000	0	0	0	12,263,000
FY 2016 ¹	0	12,263,000	12,263,000	0	0	0	12,263,000

1) The performance baseline will be validated upon completion of the rebaseline activity and contract modification for the Low Activity Waste Facility and portions of the Analytical Laboratory and Balance of Facilities, expected in FY 2015. The performance baseline for High Level Waste and Pretreatment Facilities will be validated at a later indeterminate date.

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. 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 retrieved waste during the 40 year life of the facility, immobilizing all high-level fraction and at least 40 percent of the low-activity fraction. A second plant (not part of the current project contract) is expected to be necessary to treat and immobilize the balance of the low-activity waste, depending on the operations in the Waste Treatment and Immobilization Plant. 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.

A project rebaselining effort was begun during the second quarter of FY 2012. In the fourth quarter of FY 2012 the Design Completion Team was initiated to resolve project technical issues. A decision was made to delay the rebaselining effort until the Design Completion Team could address the technical issues. Once complete, the new performance baseline will be available for an External Independent Review and then be presented for approval to the Secretarial Acquisition Executive. The current strategy is to complete the rebaseline effort in phases, first to support direct feed Low Activity Waste, then High Level Waste, followed by Pretreatment. Upon completion of the rebaseline effort this Construction Project Data Sheet will be formally revised and submitted to Congress.

4. Project Scope and Justification

Scope

The Waste Treatment and Immobilization 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 will accomplish the separation of the wastes. The High-Level Waste Facility will immobilize, through vitrification, the 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 a minimum of 18-metric tons of glass per day and the High-Level Waste facility are a minimum of 3.6 metric tons per day (average daily throughput for both facilities). 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.)

Justification

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 56,000,000 gallons of waste containing approximately 240,000 metric tons of processed chemicals and approximately 176,000,000 curies of radionuclides are currently stored in 177 tanks (retrieval has been completed in thirteen tanks). These wastes are in the form of liquids, slurries, saltcake, 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 Department's Waste Treatment and Immobilization Plant Project is responsible for managing the critically important effort to design, build, and commission the waste treatment facilities. The Waste Treatment and Immobilization Plant is an unprecedented engineering and construction challenge. Through a process known as vitrification, a portion 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 highly resistant to environmental degradation while its radioactivity decays over hundreds to thousands of years.

The Department's Office of River Protection is implementing cleanup under three 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 Waste Treatment and Immobilization Plant hot commissioning.
- The Waste Treatment and Immobilization Plant Project Contractor designs, constructs commissions, and supports transition of the plant into full operation.
- Advanced Technologies and Laboratories International, Inc. operates the laboratory complex for analysis of highly radioactive samples in support of all Hanford projects.

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. The immobilized high-level fraction will be temporarily stored on the Hanford site. 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 technical uncertainties in the High-Level Waste and Pretreatment Facilities.

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.

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

Scope and Justification

The Low-Activity Waste Facility will immobilize, through vitrification, a substantial portion of the low-activity fraction. The Key Project Performance Parameters for the Low Activity Waste facility are a minimum of 18-metric tons of glass per day and the High Level Waste facility are a minimum of 3.6 metric tons per day (average daily throughput). The Analytical Laboratory Facility will provide the necessary sample analysis needed throughout the processing facilities. The High-Level Waste Facility will immobilize, through vitrification, the high-level fraction. The Balance of Facilities includes the plant infrastructure and support facilities (steam plant, electrical switch yards, chiller plant, etc.). 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.

01-D-16E, Pretreatment Facility

Scope and Justification

The Pretreatment Facility will separate radioactive tank waste into high-activity waste and low-activity waste fractions and transfer the segregated waste to the High-Level Waste Facility and to the Low-Activity Waste Facility. The main pretreatment processes include filtration to separate the high curie solids from the low-activity liquids, evaporation to remove excess water, and an ion exchange system to remove cesium from the tank waste. The process of segregating the waste will be accomplished in black cells (isolated from entry) and a hot cell (remotely accessible) which are located in concrete structures in the center of the building. A hardened control room building and an annex building will be located adjacent to the Pretreatment Facility. 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.

5. Financial Schedule

(dollars in thousands)

Appropriations	Obligations	Costs
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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 ^m
FY 2006	520,758	524,814	516,003
FY 2007 ^{fgh}	690,000	621,000	550,991 ^m
FY 2008 ⁱ	683,721	752,721	727,766
FY 2009	690,000	690,000	716,613
FY 2010	690,000	690,000	790,487
FY 2011 ^j	738,699	738,699	794,774 ^m
FY 2012 ^k	740,000	740,000	733,852
FY 2013 ^l	634,356	634,356	555,391
FY 2014	690,000	690,000	633,313
FY 2015	667,000	667,000	720,000
FY 2016	690,000	690,000	840,000
Outyears	1,708,387	1,708,387	1,810,348
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 Waste Treatment and Immobilization Plant 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 Waste Treatment and Immobilization Plant Earned Value Management System. In March of 2008 the Waste Treatment and Immobilization Plant 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 Waste Treatment and Immobilization Plant 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 FY 2011 Continuing Appropriations reflect a reduction of \$1,302,356 due to the FY 2011 rescission of 0.2 percent.

^k A project rebaselining effort commenced in the second quarter FY 2012. In the fourth quarter of FY 2012 the Design Completion Team was initiated to resolve project technical issues. A decision was made to delay the rebaselining effort until the Design Completion Team could address the technical issues. The new baseline for the project will be completed in phases. A partial new baseline is expected to be approved in CY 2015 for the Low Activity Waste Facility and portions of the Analytical Laboratory and Balance of Facilities associated with direct feed of waste to the Low Activity Waste Facility. The rebaseline effort for the High Level Waste Facility and the Pretreatment Facility will be performed in the future. Once complete, each portion of the new performance baseline will be available for an External Independent Review and then presented for approval to the Secretarial Acquisition Executive. Upon completion of the rebaseline effort, this Project Data Sheet will be formally revised and submitted to Congress.

^l FY 2013 Enacted Appropriations reflect a reduction of \$59,494,000 due to FY 2013 sequestration. Additionally there was a reprogramming of \$166,150,000 from the Pretreatment Facility (E) control point with \$120,000,000 going to the Low-Activity Waste/Balance of Facilities/Analytical Laboratory/High-Level Waste Facility (A-D) control point and \$46,150,000 going to the Tank Farms Operations Contract.

^m Cost has been updated based on a recent audit performed to accurately reflect the cost as recorded in final DOE cost records after year-end closing entries were finalized.

The following tables break out the two control points.

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

(dollars in thousands)

Appropriations	Obligations	Costs
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Total Estimated Cost (TEC)

Construction

Prior Years ^a	1,891,449	1,891,449	1,715,169
FY 2006	373,243	373,243	361,715 ^f

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(dollars in thousands)

	Appropriations	Obligations	Costs
FY 2007 ^b	479,000	450,600	420,421
FY 2008 ^c	433,023	461,423	488,270 ^f
FY 2009 ^d	425,000	425,000	419,822 ^f
FY 2010	365,000	365,000	456,194 ^f
FY 2011	379,419	379,419	412,555 ^f
FY 2012	430,000	430,000	425,269
FY 2013	515,429	515,429	418,326
FY 2014	510,000	510,000	513,672
FY 2015	563,000	563,000	600,000
FY 2016	595,000	595,000	700,000
Outyears ^e	103,972	103,972	132,122
Total Construction	7,063,535	7,063,535	7,063,535

- a) The prior year appropriations, obligations and costs have been updated to reflect utilization of the non-facility specific carryover funding remaining in the Waste Treatment and Immobilization Plant line item 01-D-416. The Construction Prior^a line is based on facility costs prior the split of the Waste Treatment and Immobilization Plant into the five facilities.
- b) 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 will be obligated to the project. Balance of Facilities portion of the hold-back was \$5,700,000.
- c) FY 2008 Enacted Appropriations reflect a reduction of \$1,301,000 due to the FY 2008 Government-wide Rescission of 0.91 percent.
- d) Adjustments to the FY 2009 costs from the data provided in previous Project Data Sheets are related to utilization of prior to FY 2006 funding. This funding was not facility specific and the adjustments in costs are net zero across the five facilities. The change in cost for FY 2009 is based on earned value data for FY 2009.
- e) A project rebaselining effort commenced in the second quarter FY 2012. In the fourth quarter of FY 2012 the Design Completion Team was initiated to resolve project technical issues. A decision was made to delay the rebaselining effort until the Design Completion Team could address the technical issues. The new baseline for the project will be completed in phases. A partial new baseline is expected to be approved in FY 2015 for the Low Activity Waste Facility and portions of the Analytical Laboratory and Balance of Facilities associated with direct

feed of waste to the Low Activity Waste Facility. The rebaseline effort for the High Level Waste Facility and the Pretreatment Facility will be performed in the future. Once complete, each portion of the new performance baseline will be available for an External Independent Review and then presented for approval to the Secretarial Acquisition Executive. Upon completion of the rebaseline effort, this Project Data Sheet will be formally revised and submitted to Congress.

- f) Cost has been updated based on a recent audit performed to accurately reflect the cost as recorded in final DOE cost records after year-end closing entries were finalized.

01-D-16E, Pretreatment Facility

(dollars in thousands)

Appropriations	Obligations	Costs
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Total Estimated Cost (TEC)

Construction

Prior Years ^a	1,228,630	1,224,574	1,158,293
FY 2006	147,515	151,571	154,288
FY 2007 ^b	211,000	170,400	130,570
FY 2008 ^c	250,698	291,298	239,496
FY 2009 ^d	265,000	265,000	296,791 ^f
FY 2010	325,000	325,000	334,293
FY 2011	359,280	359,280	382,219
FY 2012	310,000	310,000	308,583
FY 2013	118,927	118,927	137,065
FY 2014	180,000	180,000	119,641
FY 2015	104,000	104,000	120,000
FY 2016	95,000	95,000	140,000
Outyears ^e	1,604,415	1,604,415	1,678,226
Total Construction	5,199,465	5,199,465	5,199,465

- a) The prior year appropriations and obligation have been updated to reflect utilization of the non-facility specific carryover funding remaining in the Waste Treatment and Immobilization Plant line item 01-D-416. The Construction Prior^a line is based on facility costs prior the split of the Waste Treatment and Immobilization Plant into the five facilities.
- b) The Waste Treatment and Immobilization Plant 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 was \$40,600,000.
- d) Adjustments to the FY 2009 costs from the data provided in previous Project Data Sheets are related to utilization of prior to FY 2006 funding. This funding was not facility specific and the adjustments in costs are net zero across the five facilities. The change in cost for FY 2009 is based on earned value data for FY 2009.
- e) A project rebaselining effort commenced in the second quarter FY 2012. In the fourth quarter of FY 2012 the Design Completion Team was initiated to resolve project technical issues. A decision was made to delay the rebaselining effort until the Design Completion Team could address the technical issues. The new baseline for the project will be completed in phases. A partial new baseline is expected to be approved in FY 2015 for the Low Activity Waste Facility and portions of the Analytical Laboratory and Balance of Facilities associated with direct feed of waste to the Low Activity Waste Facility. The rebaseline effort for the High Level Waste Facility and the Pretreatment Facility will be performed in the future. Once complete, each portion of the new performance baseline will be available for an External Independent Review and then presented for approval to the Secretarial Acquisition Executive. Upon completion of the rebaseline effort, this Project Data Sheet will be formally revised and submitted to Congress.
- f) Cost has been updated based on a recent audit performed to accurately reflect the cost as recorded in final DOE cost records after year-end closing entries were finalized.

6. Details of Project Cost Estimate

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Construction			
Engineering/Design	2,547,977	2,547,977	1,475,000

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Equipment/Procurement ^a	2,380,748	2,380,748	1,125,000
Facility Construction ^b	3,720,637	3,720,637	2,155,000
Commissioning ^c	1,409,428	1,409,428	876,000
Technical Support/Transition ^d	185,000	185,000	50,000
Contingency/Fee ^e	2,019,210	2,019,210	100,000
Total, Construction	12,263,000	12,263,000	5,781,000
Total, TEC	12,263,000	12,263,000	5,781,000
Contingency/Fee, TEC	2,019,210	2,019,210	100,000
Total, Total Project Cost	12,263,000	12,263,000	5,781,000
Total, Contingency/Fee	2,019,210	2,019,210	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)} Technical Support/Transition represents the cost of Federal Assurance oversight support to the Federal Project Director and project transition costs.

^{e)} Contingency/Fee dollars represent the Fee and DOE Project Contingency.

Note: A project rebaselining effort commenced in the second quarter FY 2012. In the fourth quarter of FY 2012 the Design Completion Team was initiated to resolve project technical issues. A decision was made to delay the rebaselining effort until the Design Completion Team could address the technical issues. The new baseline for the project will be completed in phases. A partial new baseline is expected to be approved in FY 2015 for the Low Activity Waste Facility and portions of the Analytical Laboratory and Balance of Facilities associated with direct feed of waste to the Low Activity Waste Facility. The rebaseline effort for the High Level Waste Facility and the Pretreatment Facility will be performed in the future. Once complete, each portion of the new performance baseline will be available for an External Independent Review and then presented for approval to the Secretarial Acquisition Executive. Upon completion of the rebaseline effort, this Project Data Sheet will be formally revised and submitted to Congress.

The following tables break out the two control points.

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

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline ^e
Total Estimated Cost (TEC)			
Construction			
Engineering/Design	1,486,023	1,486,023	1,475,000
Equipment/Procurement ^a	1,345,590	1,345,590	1,125,000
Facility Construction ^b	2,154,763	2,154,763	2,155,000
Commissioning ^c	993,671	993,671	876,000
Technical Support/Transition	98,624	98,624	50,000
Contingency/Fee ^d	984,864	984,864	100,000
Total, Construction	7,063,535	7,063,535	3,861,000
Total, TEC	7,063,535	7,063,535	3,861,000
Contingency/Fee, TEC	984,864	984,864	100,000
Total, TPC	7,063,535	7,063,535	3,861,000
Total, Contingency/Fee	984,864	984,864	100,000

^a Equipment/Procurement dollars represent of costs of plant equipment, plant material, and Acquisition Services.

^b Facility Construction dollars represent construction costs through system turnover.

^c Commissioning dollars represent the cost of Start-up, Cold Commissioning, and Hot Commissioning.

^d Contingency/Fee represents the contractor's Management Reserve, Fee, and DOE Project Contingency.

^e The value listed in the "Original Validated Baseline - Facility Construction" is a total number for all the values that would normally appear in this column.

01-D-16E, Pretreatment Facility

**Environmental Management/
River Protection/01-D-416 Waste
Treatment and Immobilization Plant,
Hanford, WA**

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline ^e
Total Estimated Cost (TEC)			
Construction			
Engineering/Design	1,061,954	1,061,954	N/A
Equipment/Procurement ^a	1,035,158	1,035,158	N/A
Facility Construction ^b	1,565,874	1,565,874	1,920,000
Commissioning ^c	415,757	415,757	N/A
Technical Support/Transition	86,376	86,376	N/A
Contingency/Fee ^d	1,034,346	1,034,346	N/A
Total, Construction	5,199,465	5,199,465	1,920,000
Total, TEC	5,199,465	5,199,465	1,920,000
Contingency/Fee, TEC	1,034,346	1,034,346	N/A
Total, TPC	5,199,465	5,199,465	1,920,000
Total, Contingency/Fee	1,034,346	1,034,346	N/A

^a Equipment/Procurement dollars represent of costs of plant equipment, plant material, and Acquisition Services.

^b Facility Construction dollars represent construction costs through system turnover.

^c Commissioning dollars represent the cost of Start-up, Cold Commissioning, and Hot Commissioning.

^d Contingency/Fee represents the contractor's Management Reserve, Fee, and DOE Project Contingency.

^e The value listed in the "Original Validated Baseline - Facility Construction" is a total number for all the values that would normally appear in this column. A breakout for the March 2003 Baseline is not available, as until FY 2006 the facilities were not separated but totaled for the whole project, and the current breakout methodology was implemented in FY 2008.

7. Schedule of Appropriation Requests

(\$K)

Request		Prior Years	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	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	N/A	4,350,000
FY 2005	TEC	5,781,000	0	0	0	0	0	0	0	5,781,000
	OPC	0	0	0	0	0	0	0	0	0
	TPC	5,781,000	0	0	0	0	0	0	0	5,781,000
FY 2006	TEC	5,781,000	0	0	0	0	0	0	0	5,781,000
	OPC	0	0	0	0	0	0	0	0	0
	TPC	5,781,000	0	0	0	0	0	0	0	5,781,000
FY 2007	TEC	5,781,000	0	0	0	0	0	0	0	5,781,000
	OPC	0	0	0	0	0	0	0	0	0
	TPC	5,781,000	0	0	0	0	0	0	0	5,781,000
FY 2008	TEC	9,190,838	690,000	690,000	690,000	690,000	225,000	87,162	0	12,263,000
Performance	OPC	0	0	0	0	0	0	0	0	0
Baseline	TPC	9,190,838	690,000	690,000	690,000	690,000	225,000	87,162	0	12,263,000
FY 2009	TEC	9,154,559	690,000	690,000	690,000	640,000	398,441	0	0	12,263,000
	OPC	0	0	0	0	0	0	0	0	0
	TPC	9,154,559	690,000	690,000	690,000	640,000	398,441	0	0	12,263,000
	TEC	9,154,559	690,000	690,000	690,000	640,000	398,441	0	0	12,263,000

**Environmental Management/
River Protection/01-D-416 Waste
Treatment and Immobilization Plant,
Hanford, WA**

FY 2010	OPC	0	0	0	0	0	0	0	0	0
	TPC	9,154,559	690,000	690,000	690,000	640,000	398,441	0	0	12,263,000
FY 2011	TEC	9,204,737	690,000	690,000	690,000	640,000	348,263	0	0	12,263,000
	OPC	0	0	0	0	0	0	0	0	0
	TPC	9,204,737	690,000	690,000	690,000	640,000	348,263	0	0	12,263,000
FY 2012	TEC	9,834,737	790,000	600,000	380,000	355,000	240,000	63,263	0	12,263,000
	OPC	0	0	0	0	0	0	0	0	0
	TPC	9,834,737	790,000	600,000	380,000	355,000	240,000	63,263	0	12,263,000
FY 2013	TEC	9,253,678	690,000	690,000	0	0	0	0	1,629,322	12,263,000
	OPC	0	0	0	0	0	0	0	0	0
	TPC	9,253,678	690,000	690,000	0	0	0	0	1,629,322	12,263,000
FY 2014	TEC	9,253,678	690,000	690,000	0	0	0	0	1,629,322	12,263,000
	OPC	0	0	0	0	0	0	0	0	0
	TPC	9,253,678	690,000	690,000	0	0	0	0	1,629,322	12,263,000
FY 2013 Reprogramming	TEC	9,253,678	690,000	690,000	0	0	0	0	1,629,322	12,263,000
	OPC	0	0	0	0	0	0	0	0	0
	TPC	9,253,678	690,000	690,000	0	0	0	0	1,629,322	12,263,000
FY 2015	TEC	9,198,035	690,000	690,000	0	0	0	0	1,684,965	12,263,000
	OPC	0	0	0	0	0	0	0	0	0
	TPC	9,198,035	690,000	690,000	0	0	0	0	1,684,965	12,263,000
FY 2016	TEC	9,197,613	667,000	690,000	0	0	0	0	1,708,387	12,263,000
	OPC	0	0	0	0	0	0	0	0	0
	TPC	9,197,613	667,000	690,000	0	0	0	0	1,708,387	12,263,000

(a) A project rebaselining effort commenced in the second quarter FY 2012. In the fourth quarter of FY 2012 the Design Completion Team was initiated to resolve project technical issues. A decision was made to delay the rebaselining effort until the Design Completion Team could address the technical issues. The new baseline for the project will be completed in phases. A partial new baseline is expected to be approved in FY 2015 for the Low Activity Waste Facility and portions of the Analytical Laboratory and Balance of Facilities associated with direct feed of waste to the Low

Activity Waste Facility. The rebaseline effort for the High Level Waste Facility and the Pretreatment Facility will be performed in the future. Once complete, each portion of the new performance baseline will be available for an External Independent Review and then presented for approval to the Secretarial Acquisition Executive. Upon completion of the rebaseline effort, this Project Data Sheet will be formally revised and submitted to Congress.

The following tables break out the two control points.

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

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Request		Prior	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	Outyears	Total
		Years								
FY 2008 Performance Baseline	TEC	5,314,838	365,000	389,000	340,000	340,000	73,000	47,162	0	6,869,000
	OPC	0	0	0	0	0	0	0	0	0
	TPC	5,314,838	365,000	389,000	340,000	340,000	73,000	47,162	0	6,869,000
FY 2009	TEC	5,386,524	365,000	389,000	336,300	241,000	151,176	0	0	6,869,000
	OPC	0	0	0	0	0	0	0	0	0
	TPC	5,386,524	365,000	389,000	336,300	241,000	151,176	0	0	6,869,000
FY 2010	TEC	5,511,023	330,000	375,000	430,000	415,000	262,977	0	0	7,324,000
	OPC	0	0	0	0	0	0	0	0	0
	TPC	5,511,023	330,000	375,000	430,000	415,000	262,977	0	0	7,324,000
FY 2011	TEC	5,331,201	355,000	455,000	465,000	415,000	302,799	0	0	7,324,000
	OPC	0	0	0	0	0	0	0	0	0
	TPC	5,331,201	355,000	455,000	465,000	415,000	302,799	0	0	7,324,000
FY 2012	TEC	5,600,702	395,000	425,000	280,000	215,000	103,000	44,833	0	7,063,535
	OPC	0	0	0	0	0	0	0	0	0
	TPC	5,600,702	395,000	425,000	280,000	215,000	103,000	44,833	0	7,063,535
FY 2013	TEC	5,801,563	575,000	595,000	0	0	0	0	91,972	7,063,535
	OPC	0	0	0	0	0	0	0	0	0

	TPC	5,801,563	575,000	595,000	0	0	0	0	91,972	7,063,535
FY 2014	TEC	5,801,563	575,000	595,000	0	0	0	0	91,972	7,063,535
	OPC	0	0	0	0	0	0	0	0	0
	TPC	5,801,563	575,000	595,000	0	0	0	0	91,972	7,063,535
FY 2013 Reprogramming	TEC	5,801,563	575,000	595,000	0	0	0	0	91,972	7,063,535
	OPC	0	0	0	0	0	0	0	0	0
	TPC	5,801,563	575,000	595,000	0	0	0	0	91,972	7,063,535
FY 2015	TEC	5,801,563	575,000	605,000	0	0	0	0	81,972	7,063,535
	OPC	0	0	0	0	0	0	0	0	0
	TPC	5,801,563	575,000	605,000	0	0	0	0	81,972	7,063,535
FY 2016	TEC	5,801,563	563,000	595,000	0	0	0	0	103,972	7,063,535
	OPC	0	0	0	0	0	0	0	0	0
	TPC	5,801,563	563,000	595,000	0	0	0	0	103,972	7,063,535

01-D-16E, Pretreatment Facility

(\$K)

Request		Prior Years	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	Outyears	Total
FY 2008 Performance Baseline	TEC	3,876,000	325,000	301,000	350,000	350,000	152,000	40,000	0	5,394,000
	OPC	0	0	0	0	0	0	0	0	0
	TPC	3,876,000	325,000	301,000	350,000	350,000	152,000	40,000	0	5,394,000
FY 2009	TEC	3,768,035	325,000	301,000	353,700	399,000	247,265	0	0	5,394,000
	OPC	0	0	0	0	0	0	0	0	0
	TPC	3,768,035	325,000	301,000	353,700	399,000	247,265	0	0	5,394,000
FY 2010	TEC	3,643,536	360,000	315,000	260,000	225,000	135,464	0		4,939,000
	OPC	0	0	0	0	0	0	0	0	0

	TPC	3,643,536	360,000	315,000	260,000	225,000	135,464	0	0	4,939,000
FY 2011	TEC	3,873,536	335,000	235,000	225,000	225,000	45,464	0	0	4,939,000
	OPC	0	0	0	0	0	0	0	0	0
	TPC	3,873,536	335,000	235,000	225,000	225,000	45,464	0	0	4,939,000
FY 2012	TEC	4,234,035	395,000	175,000	100,000	140,000	137,000	18,430	0	5,199,465
	OPC	0	0	0	0	0	0	0	0	0
	TPC	4,234,035	395,000	175,000	100,000	140,000	137,000	18,430	0	5,199,465
FY 2013	TEC	3,396,050	115,000	95,000	0	0	0	0	1,593,415	5,199,465
	OPC	0	0	0	0	0	0	0	0	0
	TPC	3,396,050	115,000	95,000	0	0	0	0	1,593,415	5,199,465
FY 2014	TEC	3,396,050	115,000	95,000	0	0	0	0	1,593,415	5,199,465
	OPC	0	0	0	0	0	0	0	0	0
	TPC	3,396,050	115,000	95,000	0	0	0	0	1,593,415	5,199,465
FY 2013 Reprogramming	TEC	3,396,050	115,000	95,000	0	0	0	0	1,593,415	5,199,465
	OPC	0	0	0	0	0	0	0	0	0
	TPC	3,396,050	115,000	95,000	0	0	0	0	1,593,415	5,199,465
FY 2015	TEC	3,396,050	115,000	85,000	0	0	0	0	1,603,415	5,199,465
	OPC	0	0	0	0	0	0	0	0	0
	TPC	3,396,050	115,000	85,000	0	0	0	0	1,603,415	5,199,465
FY 2016	TEC	3,396,050	104,000	95,000	0	0	0	0	1,604,415	5,199,465
	0	0	0	0	0	0	0	0	0	0
	TPC	3,396,050	104,000	95,000	0	0	0	0	1,604,415	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, ORP - Radioactive Liquid Tank Waste Stabilization and Disposition project, and are therefore not included in this Project Data Sheet.

9. 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.

The location of this construction project is an environmental management closure site and, therefore, is exempt from the "one-for-one" requirement.

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 was expected to 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 – TBD. A new Critical Decision date(s) will be determined upon completion of a rebaseline of the project. The new baseline will be developed in phases, Direct Feed Low Activity Waste first followed by High Level Waste, then Pretreatment.

15-D-409
Low Activity Waste Pretreatment System, Hanford (ORP-0014)
Project is for Design and Construction

1. Summary and Significant Changes

Significant Changes

This Construction Project Data Sheet is an update of the FY 2015 Construction Project Data Sheet and does not include a new start for budget year FY 2016.

The schedule for Critical Decision -1 approval for this project has been adjusted from the first Quarter FY 2015 to the second Quarter of FY 2015. DOE is in the process of preparing and implementing a number of cost and technical reviews to support the Critical Decision -1 process.

Summary

The most recent DOE O 413.3B approved Critical Decision is Critical Decision -0 which was approved on March 17, 2014, with a preliminary cost range of \$243,000,000 to \$374,000,000. Hot commissioning is expected to occur by December 2022.

A Federal Project Director has been assigned to the project and has approved the Construction Project Data Sheet.

2. Critical Decision (CD) and D&D Schedule
(Fiscal Quarter or Date)

	CD-0	Conceptual Design Complete	CD-1	CD-2	Final Design Complete	CD-3	D&D Complete	CD-4
FY 2015	2QFY2014		TBD	TBD	TBD	TBD	N/A	TBD
FY 2016	3/17/2014	2Q 2015	2Q 2015	TBD	TBD	TBD	N/A	TBD

CD-0 – Approve Mission Need

Conceptual Design Complete – Estimated date the conceptual design will be completed

CD-1 – Approve Design Scope and Project Cost and Schedule Ranges

CD-2 – Approve Project Performance Baseline

Final Design Complete – Estimated date the project design will be completed

CD-3 – Approve Start of Construction

D&D Complete – Completion of D&D work

CD-4 – Approve Start of Operations or Project Closeout

Notes: The schedules are based on a Rough Order of Magnitude estimate and are consistent with the high end of the schedule ranges.

3. Baseline and Validation Status

(dollars in thousands)

	TEC, Design	TEC, Construction	TEC, Total	OPC Except D&D	OPC, D&D	OPC, Total	TPC
FY 2015	60,000	TBD	TBD	TBD	N/A	TBD	TBD
FY 2016	TBD	TBD	TBD	TBD	N/A	TBD	TBD

4. Project Description, Justification and Scope

Scope

This project will design and build a Low Activity Waste Pretreatment System to remove tank waste solids and cesium, and to produce a low-activity waste feed stream that meets the waste acceptance criteria of the Waste Treatment and Immobilization Plant Low-Activity Waste vitrification facility. The system will store and feed pretreated waste to the Low-Activity Waste vitrification facility.

The Low Activity Waste Pretreatment System is comprised of cross-flow filters to remove suspended solids from the liquid waste from the Hanford Site's double-shell tanks. Following the filtration step, the system uses ion exchange vessels to remove radioactive cesium to produce a low-activity waste feed stream. The system will be designed with the throughput to provide sufficient feed to operate the two large Low-Activity Waste vitrification facility melters at full capacity.

Justification

Due to technical issues, the startup dates for both the Waste Treatment and Immobilization Plant Pretreatment and High-Level Waste facilities will be delayed beyond current baseline estimates. Provision of a Low Activity Waste Pretreatment System capability is required to provide low-activity waste feed to the Low-Activity Waste Facility in advance of the startup of the Pretreatment Facility.

System designs are required for the tank waste solids removal capability, and for cesium removal capability in or near the tank farm. Supporting system designs are required for the low-activity waste feed staging tanks (following pretreatment), for the transfer piping from the Low Activity Waste Pretreatment System to the Low-Activity Waste vitrification facility, and for the cesium eluate tank that supports regeneration of the ion exchange resin.

Operation of the Low Activity Waste Pretreatment System along with Low-Activity Waste vitrification facility also mitigates Waste Treatment and Immobilization Plant startup and commissioning risks, provides operational experience that can be applied to Pretreatment and High-Level Waste Facilities, and potentially accelerates overall low-activity waste immobilization capacity through additional low-activity waste feed to both the Low-Activity Waste Facility and other potential Supplemental low-activity waste immobilization facilities.

The project is being conducted in accordance with project management requirements in DOE O 413.3B, Program and Project Management for the Acquisition of Capital Assets.

5. Financial Schedule

(dollars in thousands)

	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
Design			
FY 2015	N/A	N/A	23,000
FY 2016	N/A	N/A	75,000
Outyears	N/A	N/A	TBD
Total, Design	N/A	N/A	TBD
Construction			
Outyears	N/A	N/A	TBD
Total, Construction	N/A	N/A	TBD
TEC			
FY 2015	23,000	23,000	23,000
FY 2016	75,000	75,000	75,000
Outyears	TBD	TBD	TBD
Total, TEC	TBD	TBD	TBD
Other Project Cost (OPC)			
OPC			
FY 2014	4,500	4,500	3,000
FY 2015	0	0	1,500
FY 2016	5,000	5,000	5,000
Outyears	TBD	TBD	TBD
Total, OPC	TBD	TBD	TBD
Total Project Cost (TPC)			
FY 2014	4,500	4,500	3,000
FY 2015	23,000	23,000	23,500
FY 2016	80,000	80,000	80,000
Outyears	TBD	TBD	TBD
Total, TPC	TBD	TBD	TBD

6. Details of Project Cost Estimate

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design			
Design	TBD	50,000	N/A
Contingency	TBD	10,000	N/A
Total, Design	TBD	60,000	N/A

(dollars in thousands)

Current Total Estimate	Previous Total Estimate	Original Validated Baseline
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Construction			
Building & Site Work	TBD	TBD	N/A
Contingency	TBD	TBD	N/A
Total Construction	TBD	TBD	N/A
Total, TEC	TBD	TBD	N/A
Contingency, TEC	TBD	TBD	N/A
Total	TBD	TBD	
Other Project Cost (OPC)			
OPC			
Conceptual Planning	TBD	7,200	N/A
Conceptual Design	TBD	2,800	N/A
Other, OPC	TBD	TBD	N/A
Total, OPC except for D&D	TBD	TBD	N/A
Total, Total Project Cost	TBD	TBD	N/A
Total, Contingency	TBD	TBD	N/A

7. Schedule of Appropriation Requests

(dollars in thousands)

Request	Prior Years	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY2020	Outyears	Total
FY 2015	TEC	0	23,000	0	0	0	0	TBD	TBD
	OPC	10,000	0	0	0	0	0	TBD	TBD
	TPC	10,000	23,000	0	0	0	0	TBD	TBD
FY 2016	TEC	0	23,000	75,000				TBD	TBD
	OPC	4,500	0	5,000				TBD	TBD
	TPC	4,500	23,000	80,000				TBD	TBD

8. Related Operations and Maintenance Funding Requirements

Start of Operation or Beneficial Occupancy (fiscal quarter or date)	TBD
Expected Useful Life (number of years)	TBD
Expected Future Start of D&D of this Capital Asset (fiscal quarter)	TBD

(dollars in thousands)

Annual Costs	Life Cycle Costs
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	Current Total Estimate	Previous Total Estimate	Current Total Estimate	Previous Total Estimate
Operations	TBD		TBD	
Utilities	TBD		TBD	
Maintenance	TBD		TBD	
Total, Operations & Maintenance	TBD		TBD	

9. Required D&D Information

Area	Square Feet
N/A	N/A

This project is providing new capability and is not replacing a current capability.

The location of this construction project is an environmental management closure site and, therefore, is exempt from the "one-for-one" requirement.

10. Acquisition Approach

An Acquisition Strategy for completion of the design and construction phase of this project is being developed to support Critical Decision -1 approval.

**Environmental Management/
River Protection/15-D-409
Low Activity Waste
Pretreatment System, Hanford**

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FY 2016 Congressional Budget

Savannah River

Overview

The cleanup of the Savannah River Site will support the Department's Strategic Plan to position the Department of Energy to meet the challenges of the 21st century and the nation's Manhattan Project and Cold War legacy responsibilities. This support has been demonstrated through the Site's successful removal of its legacy Transuranic waste, high level radioactive liquid waste removal and stabilization with subsequent closure of six high level waste tanks, and 50 years of successful spent (used) nuclear fuel receipts. The Savannah River Site Cleanup Project includes safely storing, treating, and disposing of a variety of radioactive and hazardous waste streams, cleaning up the environment, deactivating and decommissioning unneeded facilities, stabilization and immobilization of high level waste, and the secured storage of foreign and domestic nuclear materials including spent (used) nuclear fuel. The end-state of the Savannah River Site will be the elimination or minimization of nuclear materials, spent (used) nuclear fuel, and waste through safe stabilization, treatment, and/or disposition. All EM-owned facilities will be decommissioned once work scope is complete, except those identified for transfer to another Program Secretarial Office to support other Departmental missions. Inactive waste units will be remediated and contaminated groundwater will either be remediated or be under remediation. Units where residual materials are left in place will be under institutional controls comprised of access restrictions and land use controls, inspections, maintenance, monitoring, and remedial measures/corrective action(s), as appropriate.

Direct maintenance and repair at the Savannah River Site is estimated to be \$106,291,000.

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 and enacted legislation 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
- Resource Conservation and Recovery Act Permit
- South Carolina Industrial and Wastewater Permits
- 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
- FY 2005 Saltstone Disposal Facility Industrial Solid Waste Landfill Permit
- Section 3116 of the Ronald W. Reagan National Defense Authorization Act for Fiscal Year 2005
- Nuclear Cooperation Agreements

Contractual Framework

Program planning and management at Savannah River is conducted through the issuance and execution of contracts to large and small businesses. Savannah River develops near- and long-term planning approaches in order to develop contract strategies and program/project plans at a more detailed level. Selected contractors then execute these plans to complete cleanup on schedule. Current contracts at Savannah River include:

- Savannah River Nuclear Solutions LLC. This contract is an M&O contract for Management and Operation of the Savannah River Site and covers remediation and decommissioning work at the site for the period August 1, 2008 - July 31, 2013 with options through July 31, 2018. DOE-SR has exercised 38 months of options through September 2016.
- Savannah River Remediation LLC. This contract covers liquid high-level waste storage, treatment, stabilization, and disposition and cleaning and closing of the liquid high level waste storage tanks at the site for the period July 1, 2009, to June 30, 2015 with two (2) two-year options - July 1, 2015 to June 30, 2017 running simultaneously. The first option

is for the continuation of the current work under the contract and the second option is for the operation of Salt Waste Processing Facility. This contract is a cost plus award fee term contract.

- Parsons Government Services, Inc. This contract covers construction, commissioning, and operations of the Salt Waste Processing Facility. Construction completion target date is December 31, 2016. Commissioning runs through January 2021. This contract is a cost plus incentive fee term contract.
- Centerra. This contract covers the guard services at the Savannah River Site for the period of performance from January 1, 2010 to December 31, 2014, with option period one from January 1, 2015 to December 31, 2017, and option period 2 from January 1, 2018 to December 31, 2019. The Department has exercised option period one. It is a cost plus award fee term contract.
- Ameresco Federal Solutions. This contract is for the construction and operation of the Biomass Cogeneration Facility and Heating Plant. This delivery order is for the period May 15, 2009 - April 14, 2031. Ameresco will operate and maintain all constructed facilities until Delivery Order completion. It is a third party financed Energy Savings Performance contract.

Highlights of the FY 2016 Budget Request

The Liquid Waste Program will achieve additional risk reduction through canister production at the Defense Waste Processing Facility and disposition of salt waste in Saltstone Disposal Units. Construction will continue on the Salt Waste Processing Facility and Saltstone Disposal Unit #6. The Site will continue to operate and maintain regulatory required soil and groundwater remedial systems.

The FY 2016 request includes funding for two line item construction projects - Salt Waste Processing Facility (\$194,000,000) and Saltstone Disposal Unit #6 (\$36,987,000). The mission of the Salt Waste Processing Facility is to construct a facility to treat large quantities of salt waste from reprocessing and other liquids generated by nuclear materials production operations at the Savannah River site. Within the \$194,000,000 requested for this project 05-D-405, \$134,000,000 is for construction activities and \$60,000,000 supports other project costs such as commissioning. The mission of the Saltstone Disposal Unit #6 project is to construct a cylindrical reinforced concrete tank designed to contain a minimum of 30 million gallons of Saltstone grout. The \$36,987,000 requested for this project 15-D-402, includes \$34,642,000 for construction activities and \$2,345,000 for other project costs funded within the PBS SR-0014C, Radioactive Liquid Tank Waste Stabilization and Disposition operating account.

FY 2015 and 2016 Key Milestones/Outlook

- (September 2015) Produce 120 high level waste canisters at Defense Waste Processing Facility
- (September 2015) Close third high level waste tank towards Federal Facility Agreement commitment of closing four tanks by September 2015
- (September 2015) Continue packaging surplus Plutonium for disposition to Waste Isolation Pilot Plant
- (September 2015) Receipt of Foreign Research Reactor /Domestic Research Reactor spent (used) fuel per approved schedule (approximately 10 to 15 shipments)
- (September 2015) Submit Site Evaluation Report /Engineering Evaluation)/Cost Analysis documents to the State of South Carolina for D-Area ash basin and D-Area coal runoff pile and start removal actions for basin 488-D4 in D-Area
- (October 2015) Start removal action for the D-Area Ash Basin
- (September 2016) Complete bulk waste removal activities for two Tanks to meet Federal Facility Agreement FY 2016 commitment
- (May 2016) Issue Interim Record of Decision for C-Area Groundwater Operable Unit
- (September 2016) Close fourth high level waste tank towards Federal Facility Agreement commitment of closing four tanks by September 2015 (one year late)
- (September 2016) Produce 120 - 135 high level waste canisters at Defense Waste Processing Facility
- (September 2016) Process 1.2 million gallons of salt solution in Actinide Removal Process/Modular Caustic Side Solvent Extraction Unit

Strategic Management

The remediation cleanup approach at the Savannah River Site includes the following objectives:

- Reduce risks through stabilization, treatment and disposition of high level radioactive liquid waste;
- Complete construction and initiate operation of the Salt Waste Processing Facility to significantly increase liquid waste system disposition capabilities;
- Complete remedial actions and maintain remediation systems to achieve regulatory compliance; and
- Eliminate or minimize nuclear materials, spent (used) nuclear fuel and waste through safe stabilization, treatment and/or disposition of EM owned nuclear materials, spent (used) nuclear fuel, and waste.

The following factors present the strongest impacts to the overall achievement of the program's strategic goal:

- Deferral of scheduled scope to stabilize, treat, and dispose of high level radioactive liquid waste with subsequent closure of waste storage tanks, increases risk to environment and workers, extends the life cycle schedule, and increases the cost for closure of the Site.

Savannah River

Funding (\$K)

	FY 2014 Enacted	FY 2014 Current	FY 2015 Enacted	FY 2016 Request	FY 2016 vs FY 2015
Defense Environmental Cleanup					
Savannah River Site					
Radioactive Liquid Tank Waste Stabilization and Disposition					
SR-0014C / Radioactive Liquid Tank Waste Stabilization and Disposition-2035	690,533	690,533	712,318	810,520	+98,202
Savannah River Risk Management Operations					
SR-0011C / NM Stabilization and Disposition	272,000	272,000	246,870	234,655	-12,215
SR-0012 / SNF Stabilization and Disposition	44,684	44,684	43,110	34,407	-8,703
SR-0013 / Solid Waste Stabilization and Disposition	60,369	60,369	45,308	51,546	+6,238
SR-0030 / Soil and Water Remediation	55,438	55,438	62,688	66,044	+3,356
Subtotal, Savannah River Risk Management Operations	432,491	432,491	397,976	386,652	-11,324
SR Community and Regulatory Support					
SR-0100 / Savannah River Community and Regulatory Support	11,210	11,210	11,013	11,249	+236
Total, Savannah River Site	1,134,234	1,134,234	1,121,307	1,208,421	+87,114
Safeguards and Security					
SR-0020 / Safeguards and Security	121,196	121,196	138,235	128,345	-9,890
Total, Defense Environmental Cleanup	1,255,430	1,255,430	1,259,542	1,336,766	+77,224

Savannah River Explanation of Major Changes (\$K)

FY 2016 vs FY 2015

Defense Environmental Cleanup		
Savannah River Site		
Radioactive Liquid Tank Waste Stabilization and Disposition		
SR-0014C / Radioactive Liquid Tank Waste Stabilization and Disposition-2035		
<ul style="list-style-type: none"> The increase is attributed to additional support for the startup of the Salt Waste Processing Facility including infrastructure upgrades and facility tie-ins, construction and commissioning activities, and preparation of salt solution feedstock. Increase also supports tank closure and bulk waste removal activities to meet FY 2016 enforceable milestones and provides additional funding for Salt Disposal Unit #6 construction. 	+98,202	
Savannah River Risk Management Operations		
SR-0011C / NM Stabilization and Disposition		
<ul style="list-style-type: none"> This reduction reflects the inability to support planned H-Canyon processing due to delays in the Salt Waste Processing Facility construction and operations. 	-12,215	
SR-0012 / SNF Stabilization and Disposition		
<ul style="list-style-type: none"> This reduction reflects the inability to support planned H-Canyon processing due to delays in the Salt Waste Processing Facility construction and operations and increased fees for foreign research reactor spent nuclear fuel receipts. 	-8,703	
SR-0013 / Solid Waste Stabilization and Disposition		
<ul style="list-style-type: none"> This reflects anticipated lower waste volumes being dispositioned. 	+6,238	
SR-0030 / Soil and Water Remediation		
<ul style="list-style-type: none"> This reflects additional support for remediation activities at the D-Area Ash Basins to meet FY 2016 enforceable milestones. 	+3,356	
SR Community and Regulatory Support		
SR-0100 / Savannah River Community and Regulatory Support		
<ul style="list-style-type: none"> No significant change. 	+236	
Safeguards and Security		
SR-0020 / Safeguards and Security		
<ul style="list-style-type: none"> The decrease reflects the ongoing review of investments needed for EM mission requirements. 	-9,890	
<hr/> Total, Savannah River		<hr/> +77,224

Radioactive Liquid Tank Waste Stabilization and Disposition (PBS: SR-0014C)

Overview

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

This PBS supports the mission of the liquid waste program at the Savannah River Site, to safely and efficiently treat, stabilize, and dispose of approximately 37,000,000 gallons of legacy radioactive waste currently stored in 45 underground storage tanks.

The Liquid Waste Program has reduced risk by:

- Producing over 3,900 canisters with more than 58 million curies immobilized in glass through the Defense Waste Processing Facility;
- Processing over 6 million gallons of salt waste through Actinide Removal Process and Modular Caustic Side Solvent Extraction;
- Disposing over 11 million gallons of low-activity waste in saltstone disposal units; and
- Emptying, cleaning and removing from service 6 high level waste storage tanks meeting the commitments in the Federal Facility Agreement.

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 radioactive 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.

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 liquid radioactive 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 Solvent Extraction Unit was started up in April 2008. This provides an interim processing capability to remove and process salt waste from the tank farms to create additional tank space to support the higher capacity throughput 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 startup and initial operations of the high capacity Salt Waste Processing Facility. PBS SR-0014C scope 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 waste removal, the closure of non-compliant tanks and the Site Treatment Plan milestone.

The late receipt of Large ASME vessels (approximately 18 months) has impacted the construction completion and subsequent commissioning schedule and Total Project Cost of the Salt Waste Processing Facility. An Independent Government Cost Estimate has been conducted as well as an external review of remaining project scope to validate remaining project cost. The project has been rebaselined and a new cost and completion date established.

The scope of PBS SR-0014C includes the design and construction of saltstone disposal units for the permanent disposal of the decontaminated salt solution (low-level waste) as saltstone grout. Saltstone Disposal Unit 6 construction will continue. Planning for additional salt stone disposal capacity will be initiated.

Radioactive Liquid Tank Waste Stabilization and Disposition-2035 (PBS: SR-0014C)

Activities and Explanation of Changes

FY 2015 Enacted	FY 2016 Request	Explanation of Changes FY 2016 vs FY 2015
\$712,318	\$810,520	+\$98,202
<ul style="list-style-type: none"> • Provide site-wide services and landlord support functions for day-to-day operations. Site-wide and Landlord Support services are prorated across the PBSs. • Maintain Tank Farms, including evaporators, and Defense Waste Processing Facility in a safe configuration, staffed and ready for operations. • Support planned construction, commissioning, and start-up activities for Salt Waste Processing Facility consistent with contract modification. • Perform Tank Farm operation activities, including waste transfers and removals. • Operate Actinide Removal Process and Modular Caustic Side Solvent Extraction salt processing at a rate of 1M gallons per year. • Operate Effluent Treatment Facility at planned rate. • Operate Defense Waste Processing Facility to produce 120 to 130 canisters. • Continue Saltstone Disposal Unit 6 construction activities to support low-activity salt disposal resulting from treatment and processing of liquid tank waste. • Continue Salt Disposition Integration activities to support future Salt Waste Processing Facility start-up and operations at planned rates. Continue construction of Saltstone receipt tanks. • Continue activities for interim storage capacity for vitrified waste canisters. 	<ul style="list-style-type: none"> • Provide site-wide services and landlord support functions for day-to-day operations. Site-wide and Landlord Support services are prorated across the PBSs. • Maintain Tank Farms, including evaporators, and Defense Waste Processing Facility in a safe configuration, staffed and ready for operations. • Support planned construction, commissioning, and start-up activities for Salt Waste Processing Facility consistent with contract modification. • Conduct liquid waste tie-ins for the Salt Waste Processing Facility and other activities supporting the startup of the Salt Waste Processing Facility. • Perform Tank Farm operation activities, including waste transfers and removals. • Complete grouting and closure of Tank 12. • Complete bulk waste removal activities for Tank 15 to meet FY 2016 Federal Facility Agreement commitments and to support timely Defense Waste Processing Facility feed. • Complete preparation of Tank 26 for bulk waste removal to support timely Defense Waste Processing Facility feed. • Operate Actinide Removal Process and Modular Caustic Side Solvent Extraction salt processing at a rate of 1.2M gallons per year. • Operate Effluent Treatment Facility at planned rate. • Operate Defense Waste Processing Facility to 	<ul style="list-style-type: none"> • The increase is attributed to additional support for the startup of the Salt Waste Processing Facility in 2018 including infrastructure upgrades and facility tie-ins, construction and commissioning activities, and preparation of salt solution feedstock. Increase also supports tank closure and bulk waste removal activities to meet FY 2016 enforceable milestones and provides additional funding for Salt Disposal Unit #6 construction.

produce 120 to 135 canisters.

- Continue Saltstone Disposal Unit 6 construction activities to support low-activity salt disposal resulting from treatment and processing of liquid tank waste. Perform planning activities for additional salt stone disposal capacity in support of Salt Waste Processing Facility startup and operation.
 - Continue activities for interim storage capacity for vitrified high-level waste canisters.
-

NM Stabilization and Disposition (PBS: SR-0011C)

Overview

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

The FY 2016 scope of work for H-Canyon/HB-Line includes:

- Provide site-wide services and landlord support functions for day-to-day operations. Site-wide and Landlord Support services are prorated across the PBSs.
- Continue surveillance and maintenance of the F Area Complex Facilities (F Canyon, FB-Line, and 235-F) as well as for the Receiving Basin for Off-Site Fuels Facility.
- Operate H Canyon in a safe and secure manner.
- Maintain K-Area to securely store special nuclear material.
- Process spent nuclear fuel in coordination with receipt and processing of Canadian liquid material (funded by Canada).
- Down blend highly enriched uranium to low enriched uranium for delivery to Tennessee Valley Authority.

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.

NM Stabilization and Disposition (PBS: SR-0011C)

Activities and Explanation of Changes

FY 2015 Enacted	FY 2016 Request	Explanation of Changes FY 2016 vs FY 2015
\$246,870	\$234,655	-\$12,215
<ul style="list-style-type: none"> • Provide site-wide services and landlord support functions for day-to-day operations. Site-wide and Landlord Support services are prorated across the PBSs. • Continue surveillance and maintenance of the F Area Complex Facilities (F Canyon, FB-Line, and 235-F) as well as for the Receiving Basin for Off-Site Fuels Facility. • Support surveillance of special nuclear materials in storage by destructive means in accordance with DOE-STD-3013 and the surveillance and 	<ul style="list-style-type: none"> • Provide site-wide services and landlord support functions for day-to-day operations. Site-wide and Landlord Support services are prorated across the PBSs. • Continue surveillance and maintenance of the F Area Complex Facilities (F Canyon, FB-Line, and 235-F) as well as for the Receiving Basin for Off-Site Fuels Facility. • Operate H Canyon in a safe and secure manner. • Maintain K-Area to securely store special nuclear material. 	<ul style="list-style-type: none"> • This reduction reflects the inability to support planned H-Canyon processing due to delays in the Salt Waste Processing Facility construction and operations.

- monitoring plan in K Area.
 - Package non-MOXable plutonium oxide for disposition at WIPP.
 - Continue receipt and processing of sample return materials from both the Savannah River National Laboratory and the F/H Process laboratory.
 - Perform activities 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) as committed into a revised Implementation Plan for Defense Nuclear Safety Facilities Board Recommendation 2012-1.
 - Continue to process aluminum-clad spent (used) nuclear fuel.
 - Continue to safely and securely manage special nuclear materials.
 - Continue to receive Gap Plutonium from Foreign Countries in support of the NNSA nonproliferation program.
 - Dissolve plutonium from K-Area in support of oxide production in HB-Line for MOX feed.
 - Perform maintenance and infrastructure projects.
 - Process spent nuclear fuel in coordination with receipt and processing of Canadian liquid material (funded by Canada).
 - Purify uranium for the Tennessee Valley Authority.
 - Continue receipt and processing of sample return material from onsite laboratories.
-

SNF Stabilization and Disposition (PBS SR-0012)

Overview

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

This PBS covers the scope and funding for the spent nuclear fuel originating from Atomic Energy Commission and DOE activities, and spent (used) nuclear fuel originating in both foreign and domestic research reactors being transferred to the Savannah River Site for safe, secure storage pending disposition. All spent nuclear fuel activities at Savannah River are conducted in a single area and consolidated for storage in L-Area Basin. This includes safe storage and eventual disposition of legacy heavy water remaining from production activities; currently stored in L Reactor, K Reactor, and C Reactor.

The end-state will be accomplished when all remaining Savannah River Site inventories of spent (used) nuclear fuel have been disposed, and when the spent nuclear fuel facilities have been deactivated and turned over for final disposition. Activities include: receipt of spent (used) nuclear fuel in L-Area 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. Activities to ensure extended life of the L-Area Basin will be conducted as necessary to provide continued safe storage of spent (used) nuclear fuel nuclear materials including spent (used) nuclear fuel.

SNF Stabilization and Disposition (PBS: SR-0012)

Activities and Explanation of Changes

FY 2015 Enacted	FY 2016 Request	Explanation of Changes FY 2016 vs FY 2015
\$43,110	\$34,407	-\$8,703
<ul style="list-style-type: none"> Continue foreign and domestic research reactor spent (used) nuclear fuel activities. Provide safe, secure storage for spent (used) nuclear fuel stored in L-Area. Perform L-Basin life extension activities in support of planned spent nuclear fuel receipts. Ship spent nuclear fuel to H Canyon for disposition. Provide site-wide services and landlord support functions for day-to-day operations. Site-wide and Landlord Support services are prorated across the PBSs. 	<ul style="list-style-type: none"> Provide site-wide services and landlord support functions for day-to-day operations. Site-wide and Landlord Support services are prorated across the PBSs. Provide safe, secure storage for spent (used) nuclear fuel in L-Area. 	<ul style="list-style-type: none"> This reduction reflects the inability to support planned H-Canyon processing due to delays in the Salt Waste Processing Facility construction and operations and increased fees for foreign research reactor spent nuclear fuel receipts.

- Perform maintenance and infrastructure projects.
-

Solid Waste Stabilization and Disposition (PBS: SR-0013)

Overview

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, general Site infrastructure scope, and general Site functions that include land management activities to sustain natural resources and maintenance of Site’s roads, bridges, and dams. The scope of this PBS will continue in support of all other Savannah River PBSs and will not conclude until after all area closures. The scope of this PBS also covers site-wide critical infrastructure needs to support site mission priorities (i.e., roads, roofs, bridges, electrical distribution).

The inventory of processed and certified transuranic waste will be safely stored at Savannah River Site pending the completion of recovery activities underway at the Waste Isolation Pilot Plant and resumption of waste emplacement operations and receipt of off-site shipments.

Solid Waste Stabilization and Disposition (PBS: SR-0013)

Activities and Explanation of Changes

FY 2015 Enacted	FY 2016 Request	Explanation of Changes FY 2016 vs FY 2015
\$45,308	\$51,546	+\$6,238
<ul style="list-style-type: none"> • Provide site-wide services and landlord support functions for day-to-day operations. Site-wide and Landlord Support services are prorated across the PBSs. • Maintain Solid Waste management facilities to support site operations, including the construction debris landfill. • Disposal of up to 7,000 m³ of newly generated low-level waste. • Support the disposition of non-MOXable plutonium to the Waste Isolation Pilot Plant. • Disposal of up to 50 m³ of mixed low-level waste inventory. • Disposal of up to 10 m³ of hazardous waste 	<ul style="list-style-type: none"> • Provide site-wide services and landlord support functions for day-to-day operations. Site-wide and Landlord Support services are prorated across the PBSs. • Maintain Solid Waste management facilities to support site operations, including the construction debris landfill. • Support treatment/storage/disposal of up to 6,500 m³ of newly generated low-level waste. • Support treatment/storage/disposal of up to 50 m³ of mixed low-level waste. • Support treatment/storage/disposal of up to 10 m³ of hazardous waste. • Support treatment/storage/disposal of sanitary 	<ul style="list-style-type: none"> ▪ This reflects anticipated lower waste volumes being dispositioned.

inventory.

- Disposal of sanitary waste.
- Continue waste certification program.
- Disposition plutonium and other waste from Building 235-F deactivation.
- Support characterization and shipment of newly generated transuranic waste including support for the Carlsbad Central Characterization Project.
- Continue closure of legacy transuranic-waste pads under Federal and State regulations.
- Perform general Site functions that include land management activities to sustain natural resources and maintenance of Site's roads, bridges, and dams.
- Perform infrastructure projects from the Site's Critical Infrastructure Plan.

waste.

- Continue closure of legacy transuranic-waste pads under Federal and State regulations.
- Perform general Site functions that include land management activities to sustain natural resources and maintenance of Site's roads, bridges, and dams.
- Perform infrastructure projects from the Site's Critical Infrastructure Plan, such as the A-Area Firewater and the B Cell Block Replacement projects.

Soil and Water Remediation (PBS: SR-0030)

Overview

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, groundwater, streams (and associated wetlands) and waste sites which is governed through enforceable regulatory milestones and commitments in accordance with Resource Conservation and Recovery Act and other Permits; Comprehensive Environmental Response, Compensation, and Liability Act; and the Federal Facility Agreement 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.

Operate and maintain 9 active soil and groundwater remedial systems and monitor 30 passive (natural attenuation) regulatory required soil and groundwater remedial systems to contain contaminant plumes within the SRS site boundary, and protect human health and the environment. Continue post-closure and post-Record of Decision care and surveillance and maintenance at 68 closed waste units (approximately 900 acres) and 40 surplus facilities to prevent deterioration, environmental releases, or structural failure. Monitor, perform analysis and report on over 2,000 groundwater wells (approximately 4,300 sampling activities) and 5 major streams, the Savannah River Floodplain Swamp and the Savannah River to demonstrate effectiveness of remedial systems.

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 under PBS SR-0040C, Nuclear Facility Decontamination and Decommissioning - 2035, but has been combined with the work scope in PBS SR-0030, Soil and Water Remediation.

Soil and Water Remediation (PBS: SR-0030)

Activities and Explanation of Changes

FY 2015 Enacted	FY 2016 Request	Explanation of Changes FY 2016 vs FY 2015
\$62,688	\$66,044	+\$3,356
<ul style="list-style-type: none"> • Provide site-wide services and landlord support functions for day-to-day operations. Site-wide and Landlord Support services are prorated across the PBSs. • Achieve compliance with over 80 enforceable Federal Facility Agreement (Resource Conservation and Recovery Act/ Comprehensive Environmental Response, Compensation, and 	<ul style="list-style-type: none"> • Provide site-wide services and landlord support functions for day-to-day operations. Site-wide and Landlord Support services are prorated across the PBSs. • Achieve compliance with over 62 enforceable Federal Facility Agreement (Resource Conservation and Recovery Act/ Comprehensive Environmental Response, Compensation, and 	<ul style="list-style-type: none"> • This reflects additional support for remediation activities at the D-Area Ash Basins to meet FY 2016 enforceable milestones.

Liability Act) milestones and Resource Conservation and Recovery Act permit commitments.

- Operate and maintain 39 regulatory- required soil and groundwater remedial systems (9 active & 30 passive) to protect groundwater aquifers, site streams, and the Savannah River.
- Conduct post-closure and post-Record of Decision care and surveillance and maintenance at 68 closed waste units (approximately 900 acres) to prevent deterioration, and environmental releases.
- Monitor, perform analysis and report on over 2,000 groundwater wells and 5 major streams, the Savannah River Floodplain Swamp, and the Savannah River to demonstrate effectiveness of remedial systems.
- Perform surveillance and maintenance of Area Completion Projects inactive facilities to maintain safe and stable facility conditions.
- Develop and issue Interim Record of Decision for C-Area Groundwater.
- Characterize groundwater and prepare documentation to support Focused Corrective Measures Study/Feasibility Study for P Area Groundwater.
- Initiate Remedial Start for A-Area Ash Pile, Coal Pile Runoff Basin and A-013 Storm-water Outfall.
- Initiate dewatering activities and remediation of soil at the D-Area coal ash piles.
- Develop and submit Interim Record of Decision for C-Area Groundwater.
- Characterize groundwater and prepare documentation to support Focused Corrective Measures Study/Feasibility Study and remedy selection for P Area Groundwater.

Liability Act) milestones and Resource Conservation and Recovery Act permit commitments.

- Operate and maintain 39 regulatory- required soil and groundwater remedial systems (9 active & 30 passive) to protect groundwater aquifers, site streams, and the Savannah River.
- Conduct post-closure and post-Record of Decision care and surveillance and maintenance at 68 closed waste units (approximately 900 acres) to prevent deterioration, and environmental releases.
- Monitor, perform analysis and report on over 2,000 groundwater wells and 5 major streams, the Savannah River Floodplain Swamp, and the Savannah River to demonstrate effectiveness of remedial systems.
- Perform surveillance and maintenance of Area Completion Projects inactive facilities to maintain safe and stable facility conditions.
- Perform activities in support of the 2014 Federal Facility Agreement Appendix E regulatory scope for C-Area Groundwater.
- Perform activities in support of the 2014 Federal Facility Agreement Appendix E regulatory scope for P-Area Groundwater.
- Perform activities in support of the 2014 Federal Facility Agreement Appendix E regulatory scope for R-Area Groundwater
- Perform activities in support of the 2014 Federal Facility Agreement Appendix E regulatory scope for A-Area Ash Pile, Coal Pile Runoff Basin, and A-013 Storm-water Outfall.
- Continue remediation activities at the D-Area Ash Basins.

Savannah River Community and Regulatory Support (PBS SR-0100)

Overview

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

The scope of this project is to provide support that enables the Savannah River Site to perform its missions and cleanup objectives. Activities include Payments-In-Lieu-Of-Taxes for three South Carolina counties (Aiken, Allendale, and Barnwell); support to the Citizens Advisory Board (includes facilitators, technical advisors, meeting rooms, and other expenses); support to the States of South Carolina and Georgia for emergency management activities; and support for the South Carolina Department of Health and Environmental Control and the Environmental Protection Agency for oversight and implementation of the Federal Facility Agreement. The scope of this project also includes activities for geological surveys and natural resource management, and DOE Lease Agreements such as US Army Corps of Engineers and other lease agreements.

Savannah River Community and Regulatory Support (PBS: SR-0100)

Activities and Explanation of Changes

FY 2015 Enacted	FY 2016 Request	Explanation of Changes FY 2016 vs FY 2015
\$11,013	\$11,249	+\$236
<ul style="list-style-type: none"> • Support Payments-in-Lieu-of-Taxes to Aiken, Allendale, and Barnwell counties. • Provide technical expertise in the conduct of geological surveys and natural resource management. • Provide support to South Carolina Department of Health Environmental Control for oversight of environmental monitoring, Federal Facility Agreement, Agreement in Principle, and Site Treatment Plan. • Provide support for Georgia and South Carolina Emergency Management Support. • Support Interagency Agreement for EPA Region 4 oversight of the Federal Facility Agreement. • Support the Site Specific Advisory Board (SR 	<ul style="list-style-type: none"> • Support Payments-in-Lieu-of-Taxes to Aiken, Allendale, and Barnwell counties. • Provide support to South Carolina Department of Natural Resources for technical expertise in the conduct of geological surveys and natural resource management. • Provide support to South Carolina Department of Health Environmental Control for oversight of environmental monitoring, Federal Facility Agreement, Agreement in Principle, and Site Treatment Plan. • Provide support for Georgia and South Carolina Emergency Management Support. • Support Interagency Agreement for EPA Region 4 oversight of the Federal Facility Agreement. 	<ul style="list-style-type: none"> ▪ No significant change.

- Citizen's Advisory Board).
 - Support DOE Lease Agreements such as the US Army Corps of Engineers.
 - Support the Site Specific Advisory Board (SR Citizen's Advisory Board).
 - Support DOE Lease Agreements such as the US Army Corps of Engineers.
-

Safeguards and Security (PBS: SR-0020)

Overview

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

The Savannah River Safeguards and Security Program protects nuclear materials, sensitive weapon and nuclear material production technology, equipment, information facilities, and supports the Savannah River Site remediation and cleanup programs. These activities provide for overall site access security and protection of personnel and government property as part of EM’s overall landlord responsibilities for the 310 square mile nuclear reservation.

Safeguards and Security (PBS: SR-0020)

Activities and Explanation of Changes

FY 2015 Enacted	FY 2016 Request	Explanation of Changes FY 2016 vs FY 2015
\$138,235	\$128,345	-\$9,890
<ul style="list-style-type: none"> ▪ Provide site-wide security services for day-to-day operations. ▪ Operate and maintain the materials control and accountability program for special nuclear material. ▪ Maintain appropriate uniformed protective force personnel to assure the security of special nuclear materials, facilities, and other site assets. ▪ Operate and maintain physical security protection systems. ▪ Ensure protection of classified and unclassified computer security. ▪ Execute information and operational security measures, cyber security, personnel security and program management for the Savannah River Operations Office. ▪ Continue activities for planned transfer of the remaining consolidated Environmental 	<ul style="list-style-type: none"> • Provide site-wide security services for day-to-day operations. • Operate and maintain the materials control and accountability program for special nuclear material. • Maintain appropriate uniformed protective force personnel to assure the security of special nuclear materials, facilities, and other site assets. • Operate and maintain physical security protection systems. • Ensure protection of classified and unclassified computer security. • Execute information and operational security measures, cyber security, personnel security and program management for the Savannah River Operations Office. • Continue activities for planned transfer of the remaining consolidated Environmental 	<ul style="list-style-type: none"> • The decrease reflects the ongoing review of investments needed for EM mission requirements.

Management material access area to National Nuclear Security Administration control.

- Initiate design for the ARGUS security monitoring and control system to replace the obsolete Electronic Safeguards & Security System.

Management material access area to National Nuclear Security Administration control.

**Office of Environmental Management
FY 2016 Congressional Budget
Savannah River National Laboratory – EM Funding**

(EM dollars in thousands)

Savannah River National Laboratory	FY 2014 Current Enacted	FY 2015 Enacted	FY 2016 Request	FY 2016 Request vs FY 2015 Enacted
Environmental Management				
Defense Environmental Cleanup				
Savannah River	83,000	85,000	96,798	11,798
EM Headquarters	13,300	13,600	15,483	1,883
Office of River Protection	13,000	13,300	11,961	(1,339)
Paducah	350	360	410	50
Carlsbad	0	1,155	1,108	(47)
Oak Ridge National Laboratory	200	204	388	184
Richland	120	122	141	19
Los Alamos National Laboratory	110	112	128	16
Idaho	50	52	59	7
Total	110,130	113,905	126,745	12,571

Savannah River National Lab (SRNL) receives a total of approximately \$160-\$200 million per year in support of Environmental Management, Clean Energy and National Security programs. The SRNL efforts are funded through DOE's Environmental Management (EM) program, other DOE organizations such as the National Nuclear Security Administration, and outside entities such as the Federal Bureau of Investigation, among others. The FY 2016 figures noted above are estimates based on planned continuation of FY 2015 scope. The actual usage of SRNL by the various user sites will determine the actual EM funding provided to the lab in FY 2015 and FY 2016.

Specifically for the Savannah River Site (SRS), SRNL provides needed support to EM, such as characterization and analysis support for Liquid Waste Program; flow sheet development and product characterization in support of the Nuclear Materials program; characterization and sample analysis in support of the solid waste program and environmental cleanup and monitoring program; and development of next generation cleanup technologies.

In addition to the direct support for EM SRS, SRNL also supports DOE-HQ and other EM DOE sites (Hanford, Paducah, Carlsbad, Oak Ridge, Los Alamos, and Idaho) through provision of program and technical strategies for environmental remediation and risk reduction; development of processes to remediate high and low level wastes; technical oversight of test programs; conducting studies and developing mitigation strategies to address deleterious effects on materials used in environmental waste processes; and technical advice and technology development to address soil and groundwater radiological and chemical contamination; and support Minority Serving Institutions Partnership Program funded through EM Program Support.

The Savannah River National Laboratory operates more than 50 major research and support facilities and structures across the 34-acre Limited Technical Area. With an existing staff headcount of over 800, the Limited Technical Area is comprised of facilities rated as Nuclear Hazard Category II and III, Radiological, Chemical Hazard and Other Industrial. These facilities contain more than 700,000 gross square feet of laboratory, work and office space, including about 200,000 gross square feet of radiologically-controlled process and laboratory space. The Main Laboratory Building is a 58-year old, 300,000 gross square foot Hazard Category II Nuclear Facility containing numerous multi-functional non-radiological and radiological laboratories, offices and support spaces. These resources provide support for maintaining the Savannah River National Laboratory infrastructure.

Activities Supported by SRNL Funding

Activities and Explanation of Changes

FY 2015 Enacted	FY 2016 Request	Explanation of Changes FY 2016 vs FY 2015
<u>Savannah River</u>		
\$85,000	\$96,798	\$11,798
<ul style="list-style-type: none"> • Flowsheet development • Groundwater remediation technologies • Used fuel evaluations • Pu Surveillance Program – destructive and non-destructive characterization of 3013 canisters to determine that national standards are being met • General operational facility support including material characterization, equipment troubleshooting, evaluation of chemical issues, etc. • Support for 235-F deactivation and assessment activities • Tank waste technology development including means to separate the high activity radionuclides in order to disposition the high level waste along with various unit operations such as filtering, grinding, retrieval etc. • Nuclear materials packaging development and documentation • Waste characterization including sludge and salt characterization to support facility operations and tank closure analysis 	<ul style="list-style-type: none"> • Flowsheet development • Groundwater remediation technologies • Used fuel evaluations • General operational facility support including material characterization, equipment troubleshooting, evaluation of chemical issues, etc. • Tank waste technology development including means to separate the high activity radionuclides in order to disposition the high level waste along with various unit operations such as filtering, grinding, retrieval etc. • Nuclear materials packaging development and documentation • Waste characterization including sludge and salt characterization to support facility operations and tank closure analysis • Waste qualification and demonstration • Waste form development • Mixing studies including modeling and testing in order to demonstrate that waste tanks and processing tanks are adequately mixed 	<ul style="list-style-type: none"> • Increase supports maintaining the Savannah River National Laboratory infrastructure.

- Waste qualification and demonstration
- Waste form development
- Mixing studies including modeling and texting in order to demonstrate that waste tanks and processing tanks are adequately mixed

EM Headquarters

\$13,600

- Nuclear Materials Packaging development and certifications
- Support to HQ on revisions to DOE Order 435.1 and in support of the International Atomic Energy Agency (IAEA)
- Technical studies for HQ including independent technical reviews, Technology Readiness Assessments, etc.
- Long term performance/durability studies of high and low level Waste Forms
- Development and deployment of soil and groundwater remediation strategies and monitoring approaches
- Development of D&D facility assessment and in situ decommissioning tools
- Flowsheet Development – definition and testing of flowsheets for the processing of high level waste
- Independent review and strategic development of remediation approaches at Legacy Management sites

\$15,483

- Nuclear Materials Packaging development and certifications
- Support to HQ on revisions to DOE Order 435.1 and in support of the International Atomic Energy Agency (IAEA)
- Technical studies for HQ including independent technical reviews, Technology Readiness Assessments, etc.
- Long term performance/durability studies of high and low level Waste Forms
- Development and deployment of soil and groundwater remediation strategies and monitoring approaches
- Development of D&D facility assessment and in situ decommissioning tools
- Flowsheet Development – definition and testing of flowsheets for the processing of high level waste
- Independent review and strategic development of remediation approaches at Legacy Management site

\$1,883

- Increase reflects higher level of complex-wide technical support.

Office of River Protection

\$13,300

- Waste form development & qualification – formulation of grouts and glass and the development of strategies to demonstrate compliance

\$11,961

- Waste form development & qualification – formulation of grouts and glass and the development of strategies to demonstrate compliance

(\$1,339)

- Decrease in scope due to the completion of some scope related to technical issue resolution at the Waste Treatment and Immobilization Plant.

- Mixing and instrumentation studies of tanks in the Waste Treatment facility to ensure adequate mixing of waste prior to and during processing of waste
- Flowsheet Development and evaluation – definition and testing of flowsheets, operating parameters, etc. for the processing of high level waste
- Mixing and instrumentation studies of tanks in the Waste Treatment facility to ensure adequate mixing of waste prior to and during processing of waste
- Flowsheet Development and evaluation – definition and testing of flowsheets, operating parameters, etc. for the processing of high level waste

Paducah

\$360

\$410

\$50

- Technical review for remediation design documents
- Technical review for remediation design documents
- No significant change.

Carlsbad

\$1,155

\$1,108

(\$47)

- Support Waste Isolation Pilot Plant recovery efforts
- Support Waste Isolation Pilot Plant recovery efforts
- No significant change.

Oak Ridge National Laboratory

\$204

\$388

\$184

- Technical support for waste remediation
- Technical support for waste remediation
- Increase in scope in the area of nuclear material packaging documentation reviews.

Richland

\$122

\$141

\$19

- Member of the DOE Low Level Waste Disposal Facility Federal Review Group (LFRG) review team for the Environmental Restoration Disposal Facility (ERDF) Performance Assessment (PA)
- Member of the DOE Low Level Waste Disposal Facility Federal Review Group (LFRG) review team for the Environmental Restoration Disposal Facility (ERDF) Performance Assessment (PA)
- No significant change.

Los Alamos National Laboratory

\$112

\$128

\$16

- Nuclear materials packaging studies
- Nuclear materials packaging studies
- No significant change.

- Technical assistance for groundwater remediation
- Technical assistance for groundwater remediation

Idaho National Laboratory

- | | | | | | |
|---------------------------------------|-------------|---------------------------------------|-------------|--------------------------|------------|
| | \$52 | | \$59 | | \$7 |
| • Nuclear Materials Packaging Studies | | • Nuclear Materials Packaging Studies | | • No significant change. | |

**Savannah River
Capital Summary (\$K)**

Total	Prior Years	FY 2014 Enacted	FY 2014 Current	FY 2015 Enacted	FY 2016 Request	FY 2016 vs FY 2015
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Capital Operating Expenses Summary (including (Major Items of Equipment (MIE))

Capital Equipment > \$500K (including MIE)	0	0	0	0	0	0	
Plant Projects (GPP and IGPP) (<\$10M)	0	0	10,584	10,584	20,647	24,654	+4,007
Total, Capital Operating Expenses	0	0	10,584	10,584	20,647	24,654	+4,007
Capital Equipment > \$500K (including MIE)	0	0	0	0	0	0	
Total, Capital Equipment (including MIE)	0	0	10,584	10,584	20,647	24,654	+4,007

Plant Projects (GPP and IGPP) (Total Estimated Cost (TEC) <\$10M)

Savannah River

SRNL Hot Cell Window Replacement	0	0	0	0	0	8,200	+8,200
B/C Tertiary Exhaust Interlocks (DNFSB 2004-2, Gaps #8 - #12	0	0	0	0	0	250	+250
Complete Conversion of Sample Receiving Facility, B-162, 773-A (Y174)	0	0	0	0	0	710	+710
Complete Renovation of 735-A Labs D-112 and D-113	0	0	418	418	414	400	-14
Convert HB-Line Roof Temp Power to Permanent Power	0	0	0	0	374	373	-2
Establish Wi-Fi Local Area Infrastructure (SI-5b)	0	0	0	0	1,661	2,504	+844
Implement an SRNL Fissile Matl Inv Tracking Sys to for DSA Upgrade	0	0	0	0	746	0	-746
Install a Permenant Sump Transfer Pump in the 108-1K Basement	0	0	0	0	75	0	-75
Install Additional Cellular Repeaters	0	0	0	0	748	745	-3
Install Chemical Hood Behind "B" Cell Block Shielded Cells, 773-A, E-Wing	0	0	15	15	0	0	0
Install diesel generator 772-F DNFSB 2004-2 Alt Analysis Phase 4	0	0	0	0	0	702	+702
Install Ember and Cooling Reduction System (ECRS) DNFSB 2004-2 Alt Analysis Phase I	0	0	0	0	356	4,321	+3,965
Install Physical Access Equip IT Facilities (HSPD-12 Compliance)	0	0	0	0	1,122	1,118	-5

	Total	Prior Years	FY 2014 Enacted	FY 2014 Current	FY 2015 Enacted	FY 2016 Request	FY 2016 vs FY 2015
Install Wireless Lab InfoR Mgt System, LIMS, Capability, 773-A, LF1315	0	0	250	250	311	710	+399
KAC Reliable Power NMD-K-09-008	0	0	0	0	2,824	730	-2,094
K-Area Backup Power Capabilities (Diesel Generator Quick Connect)	0	0	0	0	0	224	+224
Refurbish Lab and Install Kynar GBs with Hood in Lab C135/139, 773-A,	0	0	387	387	1,537	0	-1,537
Remodel 773-A, E-Wing Sample Receiving Structure	0	0	0	0	0	429	+429
Renovate Lab B-147/151 and Replace Hoods and Gloveboxes, 773-A	0	0	0	0	0	568	+568
Renovate Lab C-143/147 and Install Hoods and Gloveboxes, 773-A	0	0	0	0	142	568	+426
Renovate Lab C-159 /163, Install Gloveboxes, Hoods, replace Halon System 773-A	0	0	0	0	400	500	+100
Renovate Laboratory C-162 and Install Hoods, 773-A	0	0	950	950	583	0	-583
Renovate Laboratory B-138 (CA), 773-A	0	0	626	626	350	0	-350
Renovate/Modernize Lab C-126/130 in 773-A	0	0	0	0	0	426	+426
Renovation of Lab A-120 in 735-A	0	0	0	0	0	750	+750
Replace / Renovate Building 773-A Public Address System	0	0	0	0	250	0	-250
Replace 285-H Unit Substations (2.4kV and 480V)	0	0	0	0	0	1,945	+1,945
Replace 735-A South Header Exhaust Ductwork	0	0	599	599	12	0	-12
Replace A-Area Fire Water Supply	0	0	225	225	450	0	-450
Replace AHU-D1 for offices D170-D174, 735-A	0	0	0	0	375	375	0
Replace AHU-D6, Low Level Count HVAC Unit	0	0	0	0	0	355	+355
Replace Degrading Radio Trunking System SS-CM-001	0	0	0	0	1,500	0	-1,500
Replace High Flux Thermal Neutron Source (HFTNS)	0	0	735	735	2,000	0	-2,000
Replace HVAC system for Lab D-126, 735-A	0	0	74	74	0	0	0
Replace HVAC Unit for Lab D-007, 735-A	0	0	600	600	625	0	-625
Replace HVAC Unit Lab D-137 / D-168 Cleanroom, 735-A	0	0	662	662	0	0	0
Replace North Header Exhaust Duct	0	0	505	505	0	0	0
Replace Return Basin (281-2H) Substation & Transformer	0	0	0	0	0	972	+972
Replace Site Network Uninterruptible Power Supply (UPS) (All comm bldgs on site)	0	0	0	0	50	50	0
Replace SRNL Central Mon & Control Programmable Logic Controller LF0405	0	0	469	469	350	2,272	+1,922

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	Total	Prior Years	FY 2014 Enacted	FY 2014 Current	FY 2015 Enacted	FY 2016 Request	FY 2016 vs FY 2015
Replace the SRNL Safety Address System (PA System) LF0610	0	0	0	0	950	0	-950
Reroute SRSOC Electrical Service from 752-22A to 752-71A	0	0	0	0	598	0	-598
SRNL Cell Block Exhaust Fans	0	0	48	48	652	0	-652
SRNL Process Monitoring & Control System (design only)	0	0	255	255	444	0	-444
SRNL Shielded Cell Windows	0	0	3,638	3,638	105	0	-105
Tie Central Sanitary Waste Treatment Facility Into The Site Domestic Water Loop	0	0	0	0	0	894	+894
Tie L-Area Fire Station Into The Site Domestic Water Loop	0	0	0	0	0	1,118	+1,118
Upgrade network infrastructure to improve cyber security (SI-2 Next Gen Network)	0	0	0	0	486	645	+159
WIPP Blenddown Process in K-Area	0	0	128	128	157	0	-157
Total, Savannah River	0	0	10,584	10,584	20,647	32,854	+12,207
Total, Plant Projects (GPP and IGPP) (Total Estimated (TEC) <\$10M	0	0	10,584	10,584	20,647	32,854	+12,207
Total, Capital Summary	0	0	10,584	10,584	20,647	24,654	+4,007

**Savannah River
Construction Summary (\$K)**

	Total	Prior Years	FY 2014 Enacted	FY 2014 Current	FY 2015 Enacted	FY 2016 Request	FY 2016 vs FY 2015
05-D-405, Salt Waste Processing Facility, Aiken, SC							
Total Estimate Cost (TEC)	1,611,117	1,223,122	92,000	92,000	107,000	134,000	+27,000
Other Project Costs (OPC)	710,883	110,983	33,000	33,000	28,000	60,000	+32,000
Total Project Cost (TPC) 05-D-405	2,322,000	1,334,105	125,000	125,000	135,000	194,000	+59,000
Saltstone Disposal Unit #6, SR (SR-0014C)							
Savannah River Tank Waste (SR-0014C)							
Total Estimate Cost (TEC)	127,934	16,397	34,618	34,618	0	0	0
Other Project Costs (OPC)	15,266	5,748	2,178	2,178	0	0	0
Subtotal, Saltstone Disposal Unit #6, SR (SR-0014C)	143,200	22,145	36,796	36,796	0	0	0
15-D-402, Saltstone Disposal Unit #6, SR (SR-0014C)							
Total Estimate Cost (TEC)	0	0	0	0	30,000	34,642	+4,642
Other Project Costs (OPC)	0	0	0	0	2,694	2,345	-349
Subtotal, 15-D-402, Saltstone Disposal Unit #6, SR (SR-0014C)	0	0	0	0	32,694	36,987	+4,293
Total Project Cost (TPC) 15-D-402	143,200	22,145	36,796	36,796	32,694	36,987	+4,293

05-D-405

Salt Waste Processing Facility, Savannah River Site, Aiken, South Carolina
 Project is for Construction Only (SR-0014C)

1. Summary and Significant Changes

Significant Changes

This Project Data Sheet is an update of the FY 2014 Congressional Notification Project Data Sheet and does not include a new start for the budget year.

The Deputy Secretary of Energy (the Chief Executive for Project Management, formerly the Secretarial Acquisition Executive) approved a Baseline Change Proposal establishing a new Total Project Cost of \$2,322,000,000 and the Critical Decision -4 (CD-4) date of January 31, 2021.

Summary

The DOE and its contractor initiated negotiations for the final phases of the project, including construction complete and commissioning, to determine the new contract value, subsequent revised Total Project Cost, and completion date change. The contract has been restructured to a Cost-Plus-Incentive Fee, plus cost cap arrangement for construction to go target cost of \$530,000,000, as of January 1, 2013. The cost cap includes construction and commissioning support during construction. The estimated cost for the commissioning phase has also increased and will be completed on a cost-reimbursable basis.

The project requires additional funding due to the delay in the receipt of the 10 large vessels which impacted both project cost and schedule. This delay contributed to a significant cost overrun. Construction Complete has been re-negotiated and the Contract Modification has been signed. Commissioning (within the scope of this project), and One Year of Operations and Six Months Support (outside the scope of this project) will remain as-is in the contract. Commissioning (Other Project Cost Funds) cost increases were driven primarily by escalation due to the construction delays and incorporation of lessons learned from other DOE Commissioning Projects (e.g., Integrated Waste Treatment Unit at Idaho). The extended time realized drove increased staffing levels and longer durations for Commissioning activities (increase from 11 months to 29 months). The Department’s internal review process, including preparation of an independent government cost estimate and performance of an external independent review, determined that the increases in duration were appropriate.

In the FY 2014 Omnibus Appropriations Bill, Congress appropriated all funding for the Total Project Cost of Project 05-D-405 Salt Waste Processing Facility within the construction line-item account. In prior years, the construction line-item account only contained appropriations for the Total Estimated Cost portion of the project. The Other Project Cost portion was included within PBS SR-0014C, Radioactive Liquid Tank Waste Stabilization and Disposition. In FY 2015, this project requested \$135,000,000 for the Total Project Cost control point. In the FY 2015 Omnibus Appropriations Bill, Congress appropriated all funding for the Total Project Cost 3of Project 05-D-405 Salt Waste Processing Facility within the construction line-item account.

2. Critical Decision (CD) and D&D Schedule

(fiscal quarter or date)

	Conceptual Design Complete	CD-1	CD-2	Final Design Complete	CD-3	D&D Complete	CD-4
FY 2005	06/25/2001	4Q FY2004	4Q FY2005	4Q FY2005	4Q FY2005	N/A	4Q FY2008

FY 2006	06/25/2001	4Q FY2004	3Q FY2006	3Q FY2006	3Q FY2006	N/A	4Q FY2009
FY 2007	06/25/2001	4Q FY2004	3Q FY2007	1Q FY2008	3Q FY2007	N/A	1Q FY2011
FY 2008	06/25/2001	4Q FY2004	3Q FY2007	1Q FY2008	3Q FY2007	N/A	1Q FY2011
FY 2007		4Q FY2004	4Q FY2007	4Q FY2008	4Q FY2008	N/A	1Q FY2014
Notification	06/25/2001						
FY 2009	06/25/2001	4Q FY2004	4Q FY2007	4Q FY2008	4Q FY2008	N/A	1Q FY2014
FY 2008							
Reprogramming	06/25/2001	4Q FY2004	4Q FY2007	4Q FY2008	1Q FY2009	N/A	1Q FY2014
FY 2010	06/25/2001	4Q FY2004	4Q FY2007	4Q FY2008	1Q FY2009	N/A	1Q FY2016
FY 2011	06/25/2001	4Q FY2004	4Q FY2007	4Q FY2008	1Q FY2009	N/A	1Q FY2016
FY 2012	06/25/2001	4Q FY2004	4Q FY2007	4Q FY2008	1Q FY2009	N/A	1Q FY2016
FY 2013	06/25/2001	4Q FY2004	4Q FY2007	4Q FY2008	1Q FY2009	N/A	1Q FY2016
FY 2012							
Reprogramming	06/25/2001	4Q FY2004	4Q FY2007	4Q FY2008	1Q FY2009	N/A	1Q FY2016
FY 2014	06/25/2001	4Q FY2004	4Q FY2007	4Q FY2008	1Q FY2009	N/A	TBD
FY 2013							
Reprogramming	06/25/2001	4Q FY2004	4Q FY2007	4Q FY2008	1Q FY2009	N/A	TBD
FY 2015	06/25/2001	4Q FY2004	4Q FY2007	4Q FY2008	1Q FY2009	N/A	TBD
FY 2014							
Notification	06/25/2001	4Q FY2004	4Q FY2007	4Q FY2008	1Q FY2009	N/A	2Q FY 2021
FY 2016	06/25/2001	4Q FY2004	4Q FY2007	4Q FY2008	1Q FY2009	N/A	2Q FY 2021

CD-0 – Approve Mission Need

Conceptual Design Complete – Actual date the conceptual design was completed (if applicable)

CD-1 – Approve Design Scope and Project Cost and Schedule Ranges

CD-2 – Approve Project Performance Baseline

Final Design Complete – Estimated/Actual date the project design will be/was complete(d)

CD-3 – Approve Start of Construction

D&D Complete –Completion of D&D work (see Section 9)

CD-4 – Approve Start of Operations or Project Closeout

PB – Indicates the Performance Baseline

	(Fiscal Quarter or Date)				
	Performance Baseline Validation	CD-2/3A	CD-3B	CD-3	CD-4
FY 2005	N/A	N/A	N/A	N/A	N/A
FY 2006	N/A	N/A	N/A	N/A	N/A
FY 2007	N/A	N/A	N/A	N/A	N/A
FY 2008	N/A	N/A	N/A	N/A	N/A
FY 2007					
Notification	4Q2007	4Q2007	2Q2008	N/A	N/A
FY 2009	4Q2007	4Q2007	3Q2008	N/A	N/A
FY 2008					
Reprogramming	4Q2007	4Q2007	4Q2008	N/A	N/A
FY 2010	4Q2007	4Q2007	4Q2008	1Q2009	N/A
FY 2010	4Q2007	4Q2007	4Q2008	1Q2009	N/A
FY 2012	4Q2007	4Q2007	4Q2008	1Q2009	N/A
FY 2013	4Q2007	4Q2007	4Q2008	1Q2009	N/A
FY 2012	4Q2007	4Q2007	4Q2008	1Q2009	N/A

**Environmental Management/
Savannah River/05-D-405 Salt Waste
Processing Facility**

Reprogramming
 FY 2014 4Q2007 4Q2007 4Q2008 1Q2009 N/A
 FY 2013 4Q2007 4Q2007 4Q2008 1Q2009 N/A
 Reprogramming
 FY 2015 4Q2007 4Q2007 4Q2008 1Q2009 N/A
 FY 2014 4Q2014 4Q2007 4Q2008 1Q2009 2Q2021
 Notification
 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, Design	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 Reprogramming	243,705	482,199	725,904	173,433	0	173,433	899,337
FY 2010	243,705	895,151	1,138,856	200,692	0	200,692	1,339,548
FY 2011	243,705	895,151	1,138,856	200,692	0	200,692	1,339,548
FY 2012	243,705	895,151	1,138,856	200,692	0	200,692	1,339,548
FY 2013	243,705	895,151	1,138,856	200,692	0	200,692	1,339,548
FY 2012 Reprogramming	243,705	929,457	1,173,162	166,386	0	166,386	1,339,548
FY 2014	243,705	929,457	1,173,162	166,386	0	166,386	1,339,548
FY 2013 Reprogramming	243,705	1,071,417	1,315,122	166,386		166,386	1,481,508
FY 2015	243,705	1,178,417	1,422,122	171,983	0	171,983	1,594,105
FY 2014 Notification	243,705	1,367,412	1,611,117	710,883	0	710,883	2,322,000
FY 2016	243,705	1,367,412	1,611,117	710,883	0	710,883	2,322,000

4. Project Scope and Justification

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 45 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 salt cake and 17,500,000 gallons of salt supernate. Continued, long-term storage of this liquid waste in underground tanks poses an environmental risk. 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.

**Environmental Management/
 Savannah River/05-D-405 Salt Waste
 Processing Facility**

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.

Justification

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 high-level 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.

The Salt Waste Processing Facility presently has a waste processing nameplate capacity of a nominal 7,300,000 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 about the impacts of potential accidents involving radiological materials, the Department of Energy Savannah River Operations Office directed on November 23, 2005, development of an Enhanced Preliminary Design that implemented a Performance Category 3 confinement approach.

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 which is a \$220,000,000 increase over an earlier rough order of magnitude estimate. The primary drivers for this increase 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 \$53,000,000 of the \$220,000,000 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 incorporated 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 \$1,339,548,586 at a 95 percent confidence level and a completion date of October 2015, which included 126 weeks of schedule contingency at an 80 percent confidence level.

Since 2009, the project experienced significant delays as a result of the procurement and delivery of American Society of Mechanical Engineers process vessels and other Nuclear Quality Assurance-1 vendor performance issues related to engineered equipment. Despite significant involvement by the DOE Federal Project Director, Integrated Project Team, and Senior DOE leadership, these issues adversely impacted the cost and completion dates for construction completion and facility commissioning. This increase also reflects additional cost contingency at the 95% confidence level. The revised project costs are based on the project's independently validated baseline updated to reflect completion of Critical Decision-4, as established in accordance with the DOE Order 413.3B on project management.

The major elements of the cost increase are as follows:

- Construction
- Commissioning
- Other Project Costs

Construction costs increased as a result of cost and schedule impacts from delay in receipt of Large ASME Vessels and as well as impacts from other NQA-1 procurements. In addition to the direct impacts from the two year schedule slip associated with the tank delay, inefficiencies while awaiting tank delivery caused a cumulative impact of nearly four years, from the January 2013 construction completion date established at Critical Decision -3 to the negotiated completion date of December 2016 represented in this baseline change. The cost increase reflects the additional periods of performance and associated overhead costs and level of effort expenses during that extended period. This increase has been approved in connection with contractual discussions with the Contractor in 2013 to establish a more appropriate contract structure, imposed a cost cap on construction, and was codified via Contract Modification 116 in June 2013. It is important to note that establishing a cost cap provided the Department with more contractual control of the construction work scope and transferred the risk associated with cost overruns from the Department to the contractor.

Commissioning increased as a result of escalation due to the construction delays and incorporation of lessons learned from other DOE Commissioning Projects (i.e., Integrated Waste Treatment Unit). This drove increased staffing levels and longer durations for Commissioning activities (increase from 11 months to 29 months).

Other Project Costs; which includes the Contractor Fee, Contingency/Management Reserve, and DOE/M&O Support; was increased. The increase in DOE/M&O support is due to the extended schedule and is based on actual costs to date projected to the end of the project. Because the schedule is extended from 2015 to 2021, this will require additional years of DOE/M&O support. The Contractor Fee has been reduced.

The total contingency increase recognizes uncertainties associated with commissioning, includes 26 months of schedule contingency, and includes the project management reserve. Under the cost reimbursable contract structure for commissioning, the Federal Project Director will manage and control all management reserve, as well as contingency. The contingency costs were informed by a DOE Risk Analysis and confirmed by the External Independent Review.

The project is being conducted in accordance with the project management requirements in DOE O 413.3B, Program and Project Management for the Acquisition of Capital Assets.

5. Financial Schedule

	Appropriations	Obligations	Costs
Design			
FY 2003	N/A	N/A	0
FY 2004	N/A	N/A	11,539
FY 2005	N/A	N/A	30,204
FY 2006	N/A	N/A	48,195
FY 2007	N/A	N/A	75,600
FY 2008	N/A	N/A	57,863
FY 2009	N/A	N/A	16,588
FY 2010	N/A	N/A	3,716
Total, Design	243,705	243,705	243,705
Construction			
FY 2005	N/A	N/A	0
FY 2006	N/A	N/A	0
FY 2007	N/A	N/A	1,907
FY 2008	N/A	N/A	63,640
FY 2009	N/A	N/A	93,367
FY 2010	N/A	N/A	151,743
FY 2011	N/A	N/A	227,296
FY 2012 ^b	N/A	N/A	197,479
FY 2013 ^c	N/A	N/A	148,911
FY 2014	N/A	N/A	144,671
FY 2015	N/A	N/A	156,728
FY 2016	N/A	N/A	132,866
FY 2017	N/A	N/A	48,804
Total, Construction	1,367,412	1,367,412	1,367,412
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

	Appropriations	Obligations	Costs
FY 2010	234,118	234,118	155,459
FY 2011	234,403	234,403	227,296
FY 2012 ^b	204,377	204,377	197,479
FY 2013 ^c	72,509	72,509	148,911
FY 2014	N/A	N/A	144,671
FY 2015	N/A	N/A	156,728
FY 2016	N/A	N/A	132,866
FY 2017	N/A	N/A	48,804
Total, TEC	N/A	N/A	1,611,117

Other Project Cost (OPC)

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	23,475	23,475	8,618
FY 2012 ^b	0	0	8,044
FY 2013	7,963	7,963	17,052
FY 2014 ^e	N/A	N/A	18,125
FY 2015 ^e	N/A	N/A	37,540
FY 2016	N/A	N/A	66,857
FY 2017	N/A	N/A	102,253
FY 2018	N/A	N/A	136,608
FY 2019	N/A	N/A	149,242
FY 2020	N/A	N/A	85,000
FY 2021	N/A	N/A	19,933
Total, OPC	N/A	N/A	710,883

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	257,878	257,878	235,914

	Appropriations	Obligations	Costs
FY 2012 ^b	204,377	204,377	205,523
FY 2013 ^c	80,472	80,472	165,963
FY 2014	125,000	125,000	162,796
FY 2015	135,000	135,000	194,268
FY 2016	194,000	194,000	199,723
FY 2017	159,995	159,995	151,057
FY 2018	150,000	150,000	136,608
FY 2019	140,000	140,000	149,242
FY 2020	75,000	75,000	85,000
FY 2021	8,900	8,900	19,933
Total, TPC ^d	2,322,000	2,322,000	2,322,000

^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 FY 2012 includes a reduction in OPC funds and a corresponding increase in Total Estimated Cost funds of \$34,305,510.

^c FY 2013 reflects a reprogramming resulting in a reduction in Total Estimate Cost funds of \$83,888,565 as a result of funding under an annualized continuing resolution.

^d Beginning in FY 2014, the OPC was appropriated from the construction line-item account. Prior to FY 2014, the OPC was appropriated within PBS SR-0014C, Radioactive Liquid Tank Waste Stabilization and Disposition.

6. Details of Project Cost Estimate

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design			
Design	243,705	243,705	206,705
Contingency	0	0	37,000
Total, Design	243,705	243,705	243,705
Construction			
Site Preparation	27,263	27,263	27,263
Equipment	171,893	171,893	89,508
Other Construction	1,132,256	1,132,256	316,428
Contingency	36,000	36,000	49,000
Total, Construction	1,367,412	1,367,412	482,199
Total, TEC	1,611,117	1,611,117	725,904
Contingency, TEC	36,000	36,000	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	257,750	257,750	96,940
Contingency	300,100	300,100	22,000

**Environmental Management/
Savannah River/05-D-405 Salt Waste
Processing Facility**

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Other OPC	138,900	138,900	40,048
Total, OPC except D&D	710,883	710,883	173,433
Total, OPC	710,883	710,883	173,433
Contingency, OPC	300,100	300,100	22,000
Total, TPC	2,322,000	2,322,000	899,337
Total, Contingency	336,100	336,100	108,000

7. Schedule of Appropriation Requests

Request		Prior Years	FY 2014	FY2015	FY 2016	FY 2017	FY 2018	FY 2019	Out- years	Total
FY 2004	TEC	69,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	69,000
	OPC	11,967	N/A	N/A	N/A	N/A	N/A	N/A	N/A	11,967
	TPC	80,967	N/A	N/A	N/A	N/A	N/A	N/A	N/A	80,967
FY 2005	TEC	69,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	69,000
	OPC	11,967	N/A	N/A	N/A	N/A	N/A	N/A	N/A	11,967
	TPC	80,967	N/A	N/A	N/A	N/A	N/A	N/A	N/A	80,967
FY 2006	TEC	336,040	0	0	0	0	0	0	0	336,040
	OPC	103,960	0	0	0	0	0	0	0	103,960
	TPC	440,000	0	0	0	0	0	0	0	440,000
FY 2007 Performance Baseline	TEC	559,600	0	0	0	0	0	0	0	559,600
	OPC	120,400	0	0	0	0	0	0	0	120,400
	TPC	680,000	0	0	0	0	0	0	0	680,000
FY 2008	TEC	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 2007 Congressional Notification	TEC	725,996	0	0	0	0	0	0	0	725,996
	OPC	170,286	3,055	0	0	0	0	0	0	173,341
	TPC	896,282	3,055	0	0	0	0	0	0	899,337
FY 2009	TEC	725,904	0	0	0	0	0	0	0	725,904
	OPC	170,286	3,147	0	0	0	0	0	0	173,433
	TPC	896,190	3,147	0	0	0	0	0	0	899,337
FY 2010	TEC	1,138,856	0	0	0	0	0	0	0	1,138,856
	OPC	200,692	0	0	0	0	0	0	0	200,692
	TPC	1,339,548	0	0	0	0	0	0	0	1,339,548
FY 2011	TEC	1,138,856	0	0	0	0	0	0	0	1,138,856
	OPC	195,289	5,403	0	0	0	0	0	0	200,692

	TPC	1,334,145	5,403	0	0	0	0	0	0	1,339,548
FY 2012	TEC	1,173,162	0	0	0	0	0	0	0	1,173,162
	OPC	160,983	5,403	0	0	0	0	0	0	166,386
	TPC	1,334,145	5,403	0	0	0	0	0	0	1,339,548
FY 2013	TEC	1,223,162	0	0	0	0	0	0	0	1,223,162
	OPC	110,983	5,403	0	0	0	0	0	0	116,386
	TPC	1,334,145	5,403	0	0	0	0	0	0	1,339,548
FY 2012 Reprogramming	TEC	1,223,162	0	0	0	0	0	0	0	1,223,162
	OPC	110,983	5,403	0	0	0	0	0	0	116,386
	TPC	1,334,145	5,403	0	0	0	0	0	0	1,339,548
FY 2014	TEC	1,321,725	92,000	0	0	0	0	0	0	1,413,725
	OPC	160,983	5,403	0	0	0	0	0	0	166,386
	TPC	1,482,708	97,403	0	0	0	0	0	0	1,580,111
FY 2013 Reprogramming	TEC	1,223,122	92,000	0	0	0	0	0	0	1,315,122
	OPC	160,983	5,403	0	0	0	0	0	0	166,386
	TPC	1,384,105	97,403	0	0	0	0	0	0	1,481,508
FY 2015	TEC	1,223,122	92,000	107,000	0	0	0	0	0	1,422,122
	OPC	110,983	33,000	28,000	0	0	0	0	0	171,983
	TPC	1,334,105	125,000	135,000	0	0	0	0	0	1,594,105
FY 2014 Notification	TEC	1,223,122	92,000	107,000	134,000	54,995	0	0	0	1,611,117
	OPC	110,983	33,000	28,000	60,000	105,000	150,000	140,000	83,900	710,883
	TPC	1,334,105	125,000	135,000	194,000	159,995	150,000	140,000	83,900	2,322,000
FY 2016	TEC	1,223,122	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,611,117
	OPC	110,983	N/A	N/A	N/A	N/A	N/A	N/A	N/A	710,883
	TPC	1,334,105	125,000	135,000	194,000	159,995	150,000	140,000	83,900	2,322,000

8. Related Operations and Maintenance Funding Requirements

Start of Operation or Beneficial Occupancy (fiscal quarter or date)
 Expected Useful Life (number of years)
 Expected Future Start of D&D

2Q21
 17
 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	63,443	1,083,957	1,083,957
Maintenance	10,785	10,785	184,273	184,273
Total, Operations & Maintenance	74,228	74,228	1,268,230	1,268,230

9. D&D Information

Area	Square Feet
N/A	N/A

The new area being constructed in this project is not replacing existing facilities. As part of the Office of Environmental Managements cleanup efforts, sites have established unique projects to perform Decontamination and Decommissioning. An estimated 2,108,087 square feet of buildings will have been removed from the Savannah River Sites inventory from Fiscal Year 2002 through Fiscal Year 2011. The square footage of this project will be offset against the Savannah River Site Decontamination and Decommissioning program's banked excess.

The location of this construction project is an environmental management closure site and, therefore, is exempt from the "one-for-one" requirement.

10. Acquisition Approach

The project acquisition strategy included the use of two separate contractors to perform conceptual design, which reduced project risk. Both contractors were awarded contracts in September 2002, and 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 in January, 2004, 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 contract has been restructured to a Cost-Plus-Incentive Fee, plus cost cap arrangement for construction to go target cost of \$530M, as of January 1, 2013. The cost cap includes construction and commissioning support during construction.

15-D-402
Saltstone Disposal Unit #6
Savannah River Site, Aiken, SC
Project is for Design and Construction

1. Summary and Significant Changes

Significant Changes

This Project Data Sheet is an update of the FY 2015 President’s Budget Request Data Sheet and does not include a new start for Fiscal Year 2016.

All design work for this Saltstone Disposal Unit #6 was completed in FY 2014.

Summary

The most recent DOE O 413.3B Critical Decision is Critical Decision-2/3 (approval to start cell construction only) was approved on July 16, 2013, with a Total Project Cost of \$143,200,000 and Critical Decision 4 of November 30, 2018.

A Federal Project Director has been assigned to this project.

This project was originally executed as an operating funded capital asset project. Beginning in FY 2015, EM requested that the Total Estimated Cost of this project be appropriated in the capital line item construction account. This data sheet includes a full accounting of the total project cost expended in prior years.

The Saltstone Disposal Unit #6 is the next in a series of projects that contain and disposition decontaminated salt solution (in the form of Saltstone grout) generated by the treatment of liquid nuclear waste at the Savannah River Site. The Saltstone Disposal Unit #6 project will construct a 30 million gallon reinforced concrete disposal cell and all infrastructures necessary to accept Saltstone grout produced by the Saltstone Production Facility. In fiscal year 2014, the foundation floor of the disposal cell was completed and construction of the wall sections begun. The Total Estimated Cost funding requested in FY 2016 will be used for construction of the disposal cell and the balance of plant that connects the cell to the Saltstone Production Facility.

2. Critical Decision (CD) and D&D Schedule

(fiscal quarter or date)

	CD-0	Conceptual Design Complete	CD-1	CD-2	Final Design Complete	CD-3 Disposal Cell	D&D Complete	CD-4
FY 2015	03/25/2010		06/22/2012	07/16/2013	4Q FY 2013	07/16/2013	N/A	1Q FY2019
FY 2016	03/25/2010	05/03/2012	06/22/2012	07/16/2013	12/18/2013	06/18/2014	N/A	1Q FY2019

CD-0 – Approve Mission Need

Conceptual Design Complete – Actual date the conceptual design was completed (if applicable)

CD-1 – Approve Design Scope and Project Cost and Schedule Ranges

CD-2 – Approve Project Performance Baseline

Final Design Complete – Estimated/Actual date the project design will be/was completed

CD-3 – Approve Start of Construction

D&D Complete –Completion of D&D work (see Section 9)

CD-4 – Approve Start of Operations or Project Closeout

PB – Indicates the Performance Baseline

**Environmental Management/
Savannah River/15-D-402/
Saltstone Disposal Unit #6**

FY 2016 Congressional Budget

CD-1: The project originally had an approved CD-0/1 on March 25, 2010; however, the project was revised through a baseline change proposal on June 22, 2012.

(Fiscal Quarter or Date)			
	Performance Baseline Validation		CD-3 Balance of Plant
FY 2015	07/16/2013		2QFY2014
FY 2016	07/16/2013		06/17/2014

CD-3 Disposal Cell – Approval to start disposal cell construction only

CD-3 Balance of Plant - Approval to start remaining project construction

3. Baseline and Validation Status

(Fiscal Quarter)

	TEC, Design	TEC, Construction	TEC, Total	OPC Except D&D	OPC, D&D	OPC, Total	TPC
FY 2015	20,458	107,170	127,628	15,572	N/A	15,572	143,200
FY 2016 ^a	10,617	117,317	127,934	15,266	N/A	15,266	143,200

^a Please note that the prior year cost breakdown are different than the FY 2015 Project Data Sheet. When the FY 2015 Project Data Sheet was drafted, Saltstone Disposal Unit #6 Project was operationally funded for FY 2011 through FY 2014 and there was not a division between Total Estimated Cost and Other Project Cost funds. When the FY 2015 Project Data Sheet was created, errors were made when separating these categories. This FY 2016 Project Data Sheet corrects errors made in the previous Project Data Sheet and gives an accurate representation of the separate funding categories.

4. Project Scope and Justification

Scope

The Saltstone Disposal Unit #6 project will design and construct a 30 million gallon reinforced concrete disposal cell and all necessary infrastructure to accept Saltstone grout produced by the Saltstone Production facility. Infrastructure includes Saltstone grout line, drain water return line, power, monitoring instrumentation, drain wells, cameras and ventilation systems.

Justification

Built in the 1980s, the Z-Area Saltstone Facility applies a process that immobilizes low level radioactive salt solution waste in grout. Dry materials are unloaded from dry bulk pneumatic trailers and conveyed to storage silos. The dry solids (fly ash, slag, and cement), are then discharged from the silos, weighed, and blended to produce a premix dry feed. Salt solution which is received from H-Area Waste Tank 50 through the Inter-Area Transfer System through the Salt Feed Tank and premix are proportionally measured and fed to a mixer in the 210-Z process room to produce a saltstone grout, which is pumped to the disposal units for permanent disposal. The grout hardens to form saltstone that is a leach-resistant, non-hazardous solid waste form as defined by South Carolina Department of Health and Environmental Control regulations. The combination of the monolithic non-hazardous solid saltstone waste form, concrete vault cell, and closure cap system controls migration of chemical and radioactive constituents to the environment. The Saltstone Disposal Unit projects have been initiated to provide landfill capacity for receipt of Low Activity Treated Waste grout. The need for the Saltstone Disposal Units is driven by the Savannah River Site Liquid Waste Disposition Program Plan to accomplish clean-up objectives. Saltstone Disposal Unit projects provide the benefits of lower disposal cost for decontaminated salt solutions.

The grout itself provides primary containment of the waste, and the walls, floor, and roof of the Disposal Units provide secondary containment. Saltstone Disposal Units will be constructed in coordination with salt processing production rates.

The need date for all Saltstone Disposal Units are recorded in the Savannah River Site 'Liquid Waste System Plan'. This plan documents the strategy of dispositioning the liquid waste in the Savannah River Site tank farm and meeting the Federal Facility Agreement for tank closure. It is a living document that is routinely updated to account for any changes that may affect the liquid waste system (e.g., changes in technology, facility availability, etc.).

In 2012, a value engineering study concluded that building 'Mega' cells could take advantage of economies of scale by reducing the total concrete and steel needed to build 72 small cells (2.9 million gallon capacity), which was the previous plan, as opposed to 8 large cells.

The project contingency is based upon previous experience and risks associated with adapting a commercial reinforced concrete tank to a nuclear grade low level waste disposal cell.

The project is being conducted in accordance with the project management requirements in DOE O 413.3B, Program and Project Management for the Acquisition of Capital Assets.

5. Financial Schedule

(dollars in thousands)

	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
Prior Operating Funding			
Design			
FY 2011 ^a	N/A	N/A	539
FY 2012 ^a	N/A	N/A	4,423
FY 2013 ^a	N/A	N/A	3,180
FY 2014 ^a	N/A	N/A	2,475
Total, Operating Funded Design	N/A	N/A	10,617
Construction			
FY 2013 ^a	N/A	N/A	1,662
FY 2014 ^a	N/A	N/A	26,089
FY 2015	0	0	1,374
Total, Operating Funded Construction	N/A	N/A	29,125
Total, Prior Operating Funding	39,742	39,742	39,742
Specifically Appropriated Funding			
Construction			
FY 2015	N/A	N/A	30,000
FY 2016	N/A	N/A	34,642
FY 2017	N/A	N/A	20,813
FY 2018	N/A	N/A	2,737
Total, Specifically Appropriated Construction	N/A	N/A	88,192
Total, Specifically Appropriated Funding	88,192	88,192	88,192

TEC

(dollars in thousands)

	Appropriations	Obligations	Costs
FY 2011 ^a	539	539	539
FY 2012 ^a	4,423	4,423	4,423
FY 2013 ^a	7,318	7,318	4,842
FY 2014 ^a	27,462	27,462	28,564
FY 2015	30,000	30,000	31,374
FY 2016	34,642	34,642	34,642
FY 2017	23,550	23,550	20,813
FY 2018	0	0	2,737
Total, TEC	127,934	127,934	127,934

Other Project Cost (OPC)

	Appropriations	Obligations	Costs
OPC			
FY 2011 ^a	140	140	133
FY 2012 ^a	4,278	4,278	4,064
FY 2013 ^a	1,416	1,416	1,345
FY 2014 ^a	714	714	678
FY 2015	2,694	2,694	2,624
FY 2016	2,345	2,345	2,345
FY 2017	3,679	3,679	2,610
FY 2018	0	0	1,467
Total, OPC	15,266	15,266	15,266

Total Project Cost (TPC)

FY 2011 ^a	679	679	672
FY 2012 ^a	8,701	8,701	8,487
FY 2013 ^a	8,734	8,734	6,187
FY 2014 ^a	28,176	28,176	29,242
FY 2015	32,694	32,694	33,998
FY 2016	36,987	36,987	36,987
FY 2017	27,229	27,229	23,423
FY 2018	0	0	4,204
Total, TPC	143,200	143,200	143,200

^a This FY 2016 Project Data Sheet corrects errors made in the project estimate in the previous Project Data Sheet and now gives an accurate representation of the project's estimated costs.

Note: Project construction cost profile reflects accelerated schedule to complete construction in FY 2018 before Critical Decision 4 date.

6. Details of Project Cost Estimate

(dollars in thousands)

Current Total Estimate ^a	Previous Total Estimate	Original Validated Baseline
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Total Estimated Cost (TEC)

Design

**Environmental Management/
Savannah River/15-D-402/
Saltstone Disposal Unit #6**

(dollars in thousands)

	Current Total Estimate ^a	Previous Total Estimate	Original Validated Baseline
Design	10,617	17,490	N/A
Contingency	0	2,968	N/A
Total	10,617	20,458	N/A
Construction			
Building & Site Work	94,286	81,361	N/A
Contingency	23,031	25,809	N/A
Total, Construction	117,317	107,170	N/A
Total, TEC	127,934	127,628	N/A
Contingency, TEC	23031	28,777	N/A
Other Project Cost (OPC)			
OPC			
Conceptual Design	3,976	3,552	N/A
Start-Up	7,836	3,435	N/A
Other OPC	1,917	5,079	N/A
Contingency, OPC	1,537	3,506	
Total, OPC except D&D	15,266	15,572	N/A
Total, TPC	143,200	143,200	143,200
Total, Contingency	24,568	32,283	32,902^b

^a This FY 2016 Project Data Sheet corrects errors made in the project estimate in the previous Project Data Sheet and now gives an accurate representation of the project's estimated costs.

^b Project was baselined as an operating project and, as an operating project, the baseline consisted of only the TPC and the contingency. This corrects the FY 2015 data sheet that erroneously showed individual amounts.

7. Schedule of Appropriation Requests

Request		(\$K)							Outyears	Total
		Prior Years	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020		
FY 2015	TEC	41,414	34,642	34,110	17,462	0	0	0	0	127,628
	OPC	8,907	2,694	2,626	1,345	0	0	0	0	15,572
	TPC	50,321	37,336	36,736	18,807	0	0	0	0	143,200
FY 2016 ^a	TEC	39,742	30,000	34,642	23,550	0	0	0	0	127,934
	OPC	6,548	2,694	2,345	3,679	0	0	0	0	15,266
	TPC	46,290	32,694	36,987	27,229	0	0	0	0	143,200

^a Please note that the prior year cost breakdown are different than the FY 2015 Project Data Sheet. When the FY 2015 Project Data Sheet was drafted, Saltstone Disposal Unit 6 Project was operationally funded for FY 2011 through FY 2014 and there was not a division between TEC and OPC funds. When the FY 2015 Project Data Sheet was created, errors were made when separating these categories. This FY 2016 Project Data Sheet corrects errors made in the previous Project Data Sheet and gives an accurate representation of the separate funding categories.

8. Related Operations and Maintenance Funding Requirements

Start of Operation or Beneficial Occupancy (fiscal quarter or date)	11/30/2018
Expected Useful Life (number of years)	3-5
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	700	700	3,500	3,500
Maintenance	37	37	185	185
Total, Operations & Maintenance	737	737	3,685	3,685

9. Required D&D Information

Area	Square Feet
------	-------------

Project licensed by the State of South Carolina as a landfill. D&D is not applicable for this project.

The new area being constructed in this project is not replacing existing facilities.

The location of this construction project is an environmental management closure site and, therefore, is exempt from the "one-for-one" requirement.

10. Acquisition Approach

The overall Acquisition approach is to continue to build Saltstone Disposal Unit #6 at the Savannah River Site in Z-Area using Savannah River Remediation as the Prime Contractor to manage overall Saltstone Disposal Unit design and construction including procurement actions and subcontracts, as necessary tank design, tank installation, and Balance of Plant services and infrastructure necessary to make the tank fully operational to receive Saltstone grout in accordance with the Liquid Waste System Plan.

The construction of the disposal cell was awarded to small business under a firm fixed fee subcontractor managed by Savannah River Remediation. The majority of the balance of plant work scope is also planned to be a firm fixed fee subcontract with the exception of facility tie-in and installation of safety significant equipment.

(Related Funding requirements)

(Dollars in Thousands)

	Annual Costs		Life Cycle Costs	
	Current Total Estimate	Previous Total Estimate	Current Total Estimate	Previous Total Estimate
Operations	700	700	3,500	3,500
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Total, Operations & Maintenance	737	737	3,685	3,685

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The construction of the disposal cell was awarded to small business under a firm fixed fee subcontractor managed by Savannah River Remediation. The majority of the balance of plant work scope is also planned to be a firm fixed fee subcontract with the exception of facility tie-in and installation of safety significant equipment.

Lawrence Livermore National Laboratory

Overview

The 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. Cleanup of the Lawrence Livermore National Laboratory Main site led to the final disposition of legacy waste inventories and the build-out of the Lawrence Livermore National Laboratory Livermore Site Environmental Restoration Project. The Lawrence Livermore National Laboratory Hazardous Waste Management Program and Long-Term Stewardship associated with the Lawrence Livermore National Laboratory Main Site Environmental Restoration Project transferred from EM to National Nuclear Security Administration under Long -Term Stewardship at the end of FY 2006.

Lawrence Livermore National Laboratory Site 300 is a remote experimental testing facility where the Department conducts research, development, and testing of high explosives and integrated non-nuclear weapons components operated by the Lawrence Livermore National Security, Limited Liability Company. The site was placed on the U.S. Environmental Protection Agency's National Priority List in 1990 due to legacy contamination from past operations. Remedial action selection and build-out is complete for Operable Units 1 through 8, with the exception of perchlorate ground water contamination at Building 850 (which is part of Operable Unit 5). The responsibility for Long-Term Stewardship for the implemented cleanup remedies in Operable Units 1-8 has been transferred to the National Nuclear Security Administration. The remaining characterization and/or remedy selection and implementation for Building 812/Operable Unit 9, Building 865 (which is part of Operable Unit 8), and perchlorate contamination in Building 850/Operable Unit 5 ground water is the responsibility of the Office of Environmental Management. Within the nine Operable Units, there are 73 contaminant release sites at Site 300, of which 69 have been completed.

Twenty-one 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 was completed in FY 2010. The remaining characterization and/or remedy selection and implementation for soil and groundwater for Building 812/Operable Unit 9, Building 865/Operable Unit 8, and perchlorate contamination in Building 850/Operable Unit 5 ground water are currently scheduled for completion by the end of FY 2020. Other activities associated with this cleanup work at Lawrence Livermore National Laboratory Site 300 are support for site investigations, hydrogeologic studies, and stakeholder liaisons; and payment of state grants.

The remaining EM investigations and actions at Lawrence Livermore National Laboratory Site 300 are required by the Lawrence Livermore National Laboratory Site 300 Federal Facility Agreement, Comprehensive Environmental Response Compensation and Liability Act and the National Contingency Plan. The Federal Facility Agreement describes remedial investigations and action requirements primarily by establishing schedules and deliverables. The Comprehensive Environmental Response Compensation and Liability Act and the National Contingency Plan provide the federal statutory and regulatory requirements for cleanup of legacy contamination.

The benefits of completing the remaining EM restoration work at Lawrence Livermore National Laboratory Site 300 include the overall reduction of potential human health and ecological risk by focusing on 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 cleanup soil and groundwater using a risk-based methodology.

Highlights of the FY 2016 Budget Request

The majority of activities scheduled for FY 2016 are in support of the development of remedial solutions for contamination at Building 812, Building 865, and Building 850, and include completion of the Building 812 Remedial Investigation and the Focused Feasibility Study for Perchlorate in the Ground Water at Building 850. Activities to support the development of these documents include:

- Completion of the Building 812 site-specific baseline human health and ecological risk assessment
- Development of risk-based soil cleanup standards for uranium in the Building 812 Operable Unit
- Completion of Building 812 groundwater fate and transport modeling

- Completion of the Building 850 Perchlorate in Ground Water Remedial Investigation

FY 2015 and FY 2016 Key Milestones/Outlook

- (September 2015) Final Focused Remedial Investigation for Building 850 Perchlorate in Ground Water
- (September 2015) Final Remedial Investigation/Feasibility Study for Building 865
- (September 2016) Complete Building 812 Remedial Investigation
- (September 2016) Complete Building 850 Perchlorate in Ground Water Final Focused Feasibility Study

Regulatory Framework

- Federal Facility Agreement with the US Environmental Protection Agency and two State of California Regulatory Agencies (1992)
- Comprehensive Environmental Response, Compensation and Liability Act

Contractual Framework

The current contract with Lawrence Livermore National Security, LLC, for the operation of Lawrence Livermore National Laboratory is a Management and Operations contract under the management and oversight of the National Nuclear Security Administration. The current contract began in 2007 with a 7 year base and up to 13 one year award terms. Program planning and management at Lawrence Livermore National Laboratory is conducted through the issuance and execution of subcontracts to large and small businesses. Lawrence Livermore National Laboratory develops near- and long-term planning approaches in order to develop contract strategies and program/project plans at a more detailed level. Selected subcontractors then execute these plans to support the Site 300 cleanup project.

EM work is typically executed through work authorizations under the National Nuclear Security Administration's Management and Operations contract, with cleanup work typically performed by Lawrence Livermore National Security and subcontractors.

Strategic Management

Position the Department of Energy to meet the challenges of the 21st century and the nation's Manhattan Project and Cold War legacy responsibilities:

- Prevent contamination of water supply wells and associated risk to human health and loss of beneficial uses of groundwater.
- Prevent exposure of onsite workers to contaminants and reduce the current unacceptable risk.
- Control and prevent further offsite plume migration.
- Reduce contaminant concentration and mass in the vadose zone and groundwater.
- Control contaminant sources.

The following factors could have significant impacts on individual projects and may impact the overall cleanup scope, schedule, and cost. Potential impacts follow:

- New Environmental Protection Agency and State of California Water Board regulators for the Site 300 project have been performing in-depth reviews of previously addressed areas and revisiting past cleanup decisions. This has the potential to increase cost and delay schedule in multiple areas of Site 300.
- The major uncertainty is the remediation of the depleted uranium contaminated soil at the Building 812 Firing Table (Operable Unit 9).
- 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.

Lawrence Livermore National Laboratory

Funding (\$K)

FY 2014 Enacted	FY 2014 Current	FY 2015 Enacted	FY 2016 Request	FY 2016 vs FY 2015
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Defense Environmental Cleanup

NNSA Sites

Lawrence Livermore National Laboratory

VL-FOO-0013B-D / Solid Waste Stabilization and Disposition Support -
Lawrence Livermore National Laboratory (Defense)

238 238 238 238 0

VL-LLNL-0031 / Soil and Water Remediation-Lawrence Livermore
National Laboratory - Site 300

1,238 1,238 1,128 1,128 0

Subtotal, Lawrence Livermore National Laboratory

1,476 1,476 1,366 1,366 0

Lawrence Livermore National Laboratory Explanation of Major Changes (\$K)

FY 2016 vs FY 2015 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)

• No change.	0
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VL-LLNL-0031 / Soil and Water Remediation-Lawrence Livermore National Laboratory - Site 300	
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• No change.	0
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Total, Lawrence Livermore National Laboratory	0
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Solid Waste Stabilization and Disposition Support (PBS:VL-FOO-0013B-D)

Overview

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

The activities in this PBS support the EM cleanup activities at Site 300 that will be completed with the remediation of contaminated soil and build out of the remedy for remediation of ground water at the Building 812 Firing Table in Operable Unit 9, remedy selection and/or build out at Building 865 in Operable Unit 8, and remedy selection and build out for perchlorate in ground water at the Building 850 firing table in Operable Unit 5. 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 Comprehensive Environmental Response, Compensation, and Liability Act oversight. This funding is mandated by the Federal Facility Agreement signed by DOE, Environmental Protection Agency, and the State of California.
- 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 the EM environmental restoration activities at Site 300 as described above are completed, and these areas turned over to NNSA under Long-Term Stewardship currently projected for FY 2020.

Solid Waste Stabilization and Disposition Support - Lawrence Livermore National Laboratory (Defense) (PBS: VL-FOO-0013B-D)

Activities and Explanation of Changes

FY 2015 Enacted	FY 2016 Request	Explanation of Changes FY 2016 vs FY 2015
\$238	\$238	0
<ul style="list-style-type: none"> • Support the Lawrence Livermore National Laboratory Site 300 Environmental Restoration Project and the State of California grants for oversight of the Comprehensive Environmental Response, Compensation, and Liability Act activities. 	<ul style="list-style-type: none"> • Support the Lawrence Livermore National Laboratory Site 300 Environmental Restoration Project and the State of California grants for oversight of the Comprehensive Environmental Response, Compensation, and Liability Act activities. 	<ul style="list-style-type: none"> • No change.

Soil and Water Remediation (PBS: VL-LLNL-0031)

Overview

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

The remedial actions required by regulatory decision documents will reduce the risks, overall liability, and mortgage at Site 300 associated with the 4 remaining EM contaminant release sites:

- Release Site 0035: Building 865 (Advanced Test Accelerator)
- Release Site 0038: Building 812 Firing Table (Operable Unit 9)
- Release Site 0040: Building 850 Firing Table Ground Water Project (Building 850 portion of Operable Unit 5)
- Release Site 0049: Building 812 Waste-Water Outflow (Operable Unit 9)

Additional characterization, the human health and ecological baseline risk assessment, and fate and transport modeling of the Building 812 Firing Table/Operable Unit 9 area are underway. The Treatability Study for Enhanced *In Situ* Bioremediation of Perchlorate in Ground water at Building 850/Operable Unit 5 is planned to continue in FY 2015, and the Feasibility Study reviewed and approved in September 2016. The Building 865 Remedial Investigation/Feasibility Study has been reviewed by the regulatory agencies. Additional characterization has been requested prior to regulatory approval of Remedial Investigation/Feasibility Study.

Remedial investigation and remedial build-out at the Building 812/Operable Unit 9, Building 865/Operable Unit 8, and for perchlorate in Building 850/Operable Unit 5 groundwater remain the responsibility of EM. When remedial investigations and remedial action selection build-out in these areas are complete, responsibility for the management and funding of Comprehensive Environmental Response Compensation and Liability Act required Long-Term Stewardship activities will be transferred from EM to National Nuclear Security Administration.

Soil and Water Remediation-Lawrence Livermore National Laboratory - Site 300 (PBS: VL-LLNL-0031)

Activities and Explanation of Changes

FY 2015 Enacted	FY 2016 Request	Explanation of Changes FY 2016 vs FY 2015
\$1,128	\$1,128	0
<ul style="list-style-type: none"> • Complete Building 850 Perchlorate in Ground Water Remedial Investigation. • Complete the Building 865 Final Remedial Investigation/Feasibility Study. 	<ul style="list-style-type: none"> • Complete Building 812 Remedial Investigation. • Complete Building 850 Perchlorate in Ground Water Final Focused Feasibility Study. 	<ul style="list-style-type: none"> • No change.

Los Alamos National Laboratory

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 to the Waste Isolation Pilot Plant or other offsite disposal locations.

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), disposition of legacy waste, and decontamination and decommissioning and demolition of process-contaminated facilities at Technical Area-21 (Material Disposal Areas: A, T, U and V), and waste management facilities at Technical Area-54 (Material Disposal Areas: G, H, and L), that allow for characterization and cleanup of Solid Waste Management Units which are collocated in the footprint of the structures. Los Alamos National Laboratory's highest priorities for the cleanup mission are to maintain safety, reduce urgent risk, and move toward compliance with the March 1, 2005, Order on Consent (Consent Order). The Environmental Management program is operated by the Los Alamos National Security, Limited Liability Company under contract to the Department of Energy's National Nuclear Security Administration.

In FY 2012 the Department initiated discussions with the State of New Mexico to reprioritize the near-term scheduled activities within the Consent Order based on a risk-based approach. This reprioritization is documented in the Framework Agreement. The Framework Agreement is a shared commitment between DOE and the State of New Mexico but, unlike the Consent Order, it is not an enforceable agreement. Inherent in reaching this agreement was the acknowledgement by DOE that the current completion date of the Consent Order (2015) would not be met. The Framework Agreement contains a milestone to complete disposition of 3,706 cubic meters of above-ground transuranic waste by June 30, 2014. This milestone was not met due to factors associated with February 2014 operational events that led to the suspension of the Waste Isolation Pilot Plant operations and the subsequent identification of the breached container contributing to the radiological release having originated from the Los Alamos National Laboratory's legacy transuranic waste inventory. Significant progress was made, however, only 10% of the 3,706 cubic meters of above-ground transuranic waste remains at Los Alamos National Laboratory. In April 2014, a portion of the remaining 3706 inventory was shipped to a commercial waste management facility for staging pending the resumption of operations at the Waste Isolation Pilot Plant. The balance of the 3706 campaign inventory and other transuranic wastes at Los Alamos will continue to be safely stored on site pending the completion of the Waste Isolation Pilot Plant recovery efforts.

Due to findings associated with the breached container, the processing of legacy transuranic waste at Los Alamos National Laboratory has been suspended. In May 2014, the New Mexico Environment Department issued an Administrative Order requiring the safe isolation and further treatment of nitrate salt bearing wastes remaining at Los Alamos; the activities required to comply with this Order are among the FY 2015 priorities at the site. In December 2014, the New Mexico Environment Department also assessed fines and penalties associated with perceived Resource Conservation and Recovery Act requirements at the site.

In September 2014, the Secretary of Energy directed the Office of Environmental Management and the National Nuclear Security Administration to transition the management of the legacy environmental cleanup activities at Los Alamos to the of Environmental Management. This transition is in process and involves both organizational and contractual changes. In parallel, DOE is in the process of updating the lifecycle baseline for completion of environmental cleanup activities necessary to satisfy the Consent Order requirements. DOE anticipates that these changes will provide a foundation for the renegotiation of the Consent Order with the New Mexico Environment Department.

Highlights of the FY 2016 Budget Request

By the end of FY 2016, the remainder of the above-ground stored, non-cemented, transuranic waste will be characterized and certified for future disposal at the Waste Isolation Pilot Plant. Consistent with the priorities established with the New Mexico Environment Department in the Framework Agreement, other FY 2016 priorities will focus on surface and

groundwater management. Obtaining individual storm water permits and cleanup of several aggregate areas continues. Investigation and development of corrective measures for hexavalent chromium remediation continues in Mortandad and Sandia Canyon watersheds with emphasis on interim measures for boundary protection in FY 2016.

Groundwater remedies will be determined for the high explosives plume in Cañon de Valle. Planning for retrieval and repackaging of the below-grade contact-handled transuranic waste will be conducted, including the evaluation and recommendation regarding disposition of the 33 remote-handled transuranic waste shafts. Demolition activities will continue in Technical Area-21 for balance of plant facilities and planning for the radiologically contaminated facilities, the Laboratory property closest to Los Alamos County. Remediation activities on public and Los Alamos County properties will be completed during FY 2016. The FY 2016 request will support the decision of the regulator for prompting remedy projects development in possibly three Material Disposal Areas (A, C, and T).

FY 2015 and FY 2016 Key Milestones/Outlook

- (May 2015) 2015 Interim Facility-Wide Groundwater Monitoring Plan
- (May 2015) Annual Report Documenting Geomorphic Changes in Los Alamos and Pueblo Canyons
- (September 2016) Fulfill requirements of the Nitrate Salt Bearing Waste Isolation Plan
- (September 2016) Complete evaluation and recommendation related to the disposition of 33 shaft
- (September 2016) Complete the investigation and submittal of a Corrective Measures Evaluation of hexavalent chromium contamination of the groundwater beneath Mortandad and Sandia Canyons
- (September 2016) Submittal of Certificates of Completion for historical townsites in the Los Alamos Canyon

Regulatory Framework

The primary regulatory driver for Environmental Management Projects at Los Alamos National Laboratory is the Consent Order. Signed by the New Mexico Environment Department, Los Alamos National Laboratory and DOE on March 1, 2005, the Consent Order provides the primary requirements for the Los Alamos National Laboratory Environmental Restoration Project and establishes an enforceable scope and schedule and milestones for corrective actions. As mentioned previously, the Department has acknowledged its inability to meet the enforceable milestones contained in the current Consent Order. For this reason, it is expected that a new Consent Order will be issued by New Mexico Environment Department sometime during FY 2015/FY 2016.

As a result of wildfires, the Department and the State of New Mexico have revisited the prioritization of activities at Los Alamos National Laboratory to ensure that the highest risk stored combustible transuranic waste can be addressed in an expeditious manner. In early FY 2012, the Department and the State developed a Framework Agreement which documents the shared commitment to reduce risks and propose revisions to the schedules of some compliance-driven, but lower risk activities.

Other drivers include the 1995 Federal Facilities Compliance Agreement, Public Law 105-119, 10 Code of Federal Regulations, Part 830, Nuclear Safety Management, a hazardous waste facility permit for storage and treatment, Federal Facility Compliance Order, the Atomic Energy Act, the Toxic Substances Control Act, the Resource Conservation and Recovery Act, the Clean Air Act, Settlement Agreement and Stipulated Final Order (Chromium) 2007 and the Individual Permit issued by the U. S. Environmental Protection Agency in February 2009 for storm water management at Los Alamos National Laboratory.

Contractual Framework

The current contract at Los Alamos National Laboratory is a Management and Operations contract with Los Alamos National Security, LLC (LANS). The contract performance period runs through September 30, 2018, with the potential to extend until September 30, 2026.

EM work has typically been executed through work authorizations under National Nuclear Security Administration's Management and Operations contract, with cleanup work typically performed by subcontractors to the Management and Operations contractor.

Consistent with the September 2014 Secretarial direction described above, DOE is in the process of transitioning its acquisition strategy for completion of the legacy environmental cleanup scope at Los Alamos National Laboratory. In December 2014, DOE published its intent to enter into a sole source bridge contract with LANS, distinct from the current laboratory Management and Operations contract, for environmental cleanup activities in FY 2015 and FY 2016. In parallel, the Office of Environmental Management has initiated a competitive acquisition for the future cleanup activities. This acquisition process is anticipated to require up to two years and will complete in late 2016.

Strategic Management

Position the Department of Energy to meet the challenges of the 21st century and the nation's Manhattan Project and Cold War legacy responsibilities.

The cleanup strategy at the Los Alamos National Laboratory involves the following activities:

- As a result of the wildfires in 2011, the Department and the State of New Mexico have reprioritized some activities at Los Alamos National Laboratory to ensure the highest risk of stored combustible transuranic waste can be addressed in an expedited manner.
- Continued retrieval and disposition of legacy Transuranic waste, closure of multiple Resource Conservation and Recovery Act operable units, decommissioning and decontamination of excess facilities at Technical Area-54, and final remedy and site completion at remaining Solid Waste Management Units will drive the critical path for completion of the Compliance Order on Consent between Los Alamos National Laboratory and the regulator.
- Assessments and corrective actions at contaminated sites to reduce unacceptable human health and ecological risks and reduce the inventory of legacy transuranic waste.
- Decontamination, decommissioning, and demolition of process-contaminated facilities at Technical Area-21 and waste management facilities at Technical Area-54 allows for the characterization and cleanup of Solid Waste Management Units which are co-located in the footprint of the structures.

The following factors and assumptions could have significant impacts on individual projects and may impact the overall cleanup scope, schedule, and costs identified:

- In most cases, it is assumed that some form of active treatment for some period of time to address groundwater contaminants will be accepted as the remedy rather than monitored natural attenuation. FY 2014 activities indicated that an active remediation process may be implemented for potentially significant durations in several groundwater areas before a reliance on monitored natural attenuation could be relied on, thus possibly adversely impacting the current completion estimates.
- It is assumed that regulators will approve cleanup levels for individual sites that correspond to the intended land use, thereby leaving in place some contaminants that do not pose unacceptable health and environmental risks.

Los Alamos National Laboratory

Funding (\$K)

FY 2014 Enacted	FY 2014 Current	FY 2015 Enacted	FY 2016 Request	FY 2016 vs FY 2015
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Defense Environmental Cleanup

NNSA Sites

Los Alamos National Laboratory

VL-FAO-0101 / Miscellaneous Programs and Agreements in Principle	4,103	4,103	2,355	3,394	+1,039
VL-LANL-0013 / Solid Waste Stabilization and Disposition-LANL					
Legacy	136,421	134,105	75,600	65,001	-10,599
VL-LANL-0030 / Soil and Water Remediation-LANL	83,615	85,949	110,145	117,230	+7,085
VL-LANL-0040-D / Nuclear Facility D&D-LANL (Defense)	650	632	1,500	3,000	+1,500
Subtotal, Los Alamos National Laboratory	224,789	224,789	189,600	188,625	-975

Los Alamos National Laboratory Explanation of Major Changes (\$K)

FY 2016 vs FY 2015

Defense Environmental Cleanup

NNSA Sites

Los Alamos National Laboratory

VL-FAO-0101 / Miscellaneous Programs and Agreements in Principle

- Increase reflects the independent sampling and monitoring activities performed by local Pueblos and additional support of the Natural Resource Damages Assessment process, injury assessment, quantification, and restoration planning and Trustee Council. +1,039

VL-LANL-0013 / Solid Waste Stabilization and Disposition-LANL Legacy

- Decrease reflects reduction in efforts related to below grade transuranic waste. -10,599

VL-LANL-0030 / Soil and Water Remediation-LANL

- Increase supports progress in high-risk groundwater and soil remediation activities in Mortandad and Sandia canyons. +7,085

VL-LANL-0040-D / Nuclear Facility D&D-LANL (Defense)

- Increase reflects demolition activities to complete the balance of plant facilities within Technical Area-21. +1,500

Total, Los Alamos National Laboratory	-975
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Miscellaneous Programs and Agreements in Principle (PBS: VL-FAO-0101)

Overview

This PBS is within the Defense Environmental Cleanup appropriation.

This PBS includes historic support for the New Mexico Agreement in Principle and continued community, Tribal and site wide programs, including the Natural Resource Damage Assessment at Los Alamos National Laboratory. A pre-assessment 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 has begun the full assessment.

Miscellaneous Programs and Agreements in Principle (PBS: VL-FAO-0101)

Activities and Explanation of Changes

FY 2015 Enacted	FY 2016 Request	Explanation of Changes FY 2016 vs FY 2015
\$2,355	\$3,394	+\$1,039
<ul style="list-style-type: none"> • Support the Regional Coalition activities. • Support the Natural Resource Damage Assessment including preliminary assessment development and Trustee Council activities. • Support the Los Alamos Pueblo Program to develop and implement environmental monitoring programs for air, soil, and water and establish an independent monitoring program. 	<ul style="list-style-type: none"> • Support the Regional Coalition activities. • Support the Natural Resource Damage Assessment including preliminary assessment development and Trustee Council activities. • Support the Los Alamos Pueblo Program to develop and implement environmental monitoring programs for air, soil, and water and establish an independent monitoring program. 	<ul style="list-style-type: none"> • Increase reflects the independent sampling and monitoring activities performed by local Pueblos and additional support of the Natural Resource Damages Assessment process, injury assessment, quantification, and restoration planning and Trustee Council.

Solid Waste Stabilization and Disposition-LANL Legacy (PBS: VL-LANL-0013)

Overview

This PBS is within the Defense Environmental Cleanup appropriation.

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

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 drivers requiring disposition of this waste is DOE Order 435.1-1, Radioactive Waste Management and 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 newly generated, mixed, low-level waste. These activities are supported by Central Characterization Program resources provided by the Carlsbad Field Office.

Solid Waste Stabilization and Disposition-LANL Legacy (PBS: VL-LANL-0013)

Activities and Explanation of Changes

FY 2015 Enacted	FY 2016 Request	Explanation of Changes FY 2016 vs FY 2015
\$75,600	\$65,001	-\$10,599
<ul style="list-style-type: none"> Continue Solid Waste Stabilization and Disposition services and actions to maintain safe storage of stored transuranic inventory (above and below grade), such as safe configuration and within prescribed Material-at-Risk limits and in fulfillment of Framework Agreement milestones. Complete corrective actions necessary to support resumption of operations of processing lines at Waste Characterization Reduction Repackaging Facility, Dome 231, Dome 375 and Building 412. Plan and develop/plan for treatment of nitrate salt bearing wastes in fulfillment of the Nitrate Salt Bearing Waste Isolation Plan. 	<ul style="list-style-type: none"> Continue Solid Waste Stabilization and Disposition services and actions to maintain safe storage of stored transuranic inventory (above and below grade), such as safe configuration and within prescribed Material-at-Risk limits and in fulfillment of Framework Agreement milestones. Support continued staging of a portion of the 3706 transuranic waste inventory at an offsite commercial facility, pending the resumption of operations at the Waste Isolation Pilot Plant. Continue management and disposition of mixed low-level waste/low-level waste and transuranic waste per regulatory agreement with the State of 	<ul style="list-style-type: none"> Decrease reflects reduction in efforts related to below grade transuranic waste.

- Continue disposition of mixed low-level waste/low-level waste.
 - Support continued staging of a portion of the 3706 transuranic waste inventory at an offsite commercial facility, pending the resumption of operations at the Waste Isolation Pilot Plant.
- New Mexico.
- Conduct planning for retrieval of contact-handled transuranic wastes from below grade retrievable storage.
 - Conduct safe operations of processing lines at Waste Characterization Reduction Repackaging Facility, Dome 231, Dome 375 and Building 412.
 - Plan and complete treatment of nitrate salt bearing wastes in fulfillment of the Nitrate Salt Bearing Waste Isolation Plan.
 - Conduct evaluation and recommendation on 33 remote-handled transuranic waste shafts.
-

Soil and Water Remediation-LANL (PBS: VL-LANL-0030)

Overview

This PBS is 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 and storm water 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, with the implementation of the Framework Agreement with the New Mexico Environmental Department.

This PBS also includes scope associated with the design, construction, and startup of Hexavalent Chromium Pump and Treatment Remedy Project (15-D-406) in Mortandad Canyon. However, in FY 2016, efforts are focused on the interim measures related to the plume to support reaching regulatory agreement on the proposed remedy. Following regulatory approval, the design activities for the line item project will resume.

Soil and Water Remediation-LANL (PBS: VL-LANL-0030)

Activities and Explanation of Changes

FY 2015 Enacted	FY 2016 Request	Explanation of Changes FY 2016 vs FY 2015
\$110,145	\$117,230	+\$7,085
<ul style="list-style-type: none"> Continue groundwater monitoring and reporting requirements consistent with the Framework Agreement, Consent Order on Compliance, and the Resource Conservation and Recovery Act Operating Permit; install several monitoring wells under the Consent Order; continue storm-water sampling to protect the regional drinking water supplies, sediment monitoring, mitigation and reporting requirements consistent with the Individual Permit. Continue to provide critical database 	<ul style="list-style-type: none"> Continue groundwater monitoring and reporting requirements consistent with the Framework Agreement, Consent Order on Compliance, and the Resource Conservation and Recovery Act Operating Permit; install several monitoring wells under the Consent Order; continue storm-water sampling to protect the regional drinking water supplies, sediment monitoring, mitigation and reporting requirements consistent with the Individual Permit. Continue to provide critical database 	<ul style="list-style-type: none"> Increase supports progress in high-risk groundwater and soil remediation activities in Mortandad and Sandia canyons.

management and infrastructure support to meet Consent Order requirements.

- Conduct authorization basis surface inspections at several Nuclear Environmental Sites and implement required changes.
- Initiate and complete design for the remedy for Material Disposal Area C.
- Complete the Investigation Report and Corrective Measures Evaluation of Material Disposal Area T in support of obtaining final regulatory remedy selection.
- Completion of Townsite cleanup of solid waste management units from the 1940s and 1950s production sites.
- Support Technical Area-21/Delta Prime Site aggregate area and other aggregate area cleanups.
- Conduct Three Mile Canyon investigation and remediation.
- Continuation of activities for Chromium plume investigation and interim measure progression towards a Corrective Measures Evaluation.
- Prepare groundwater Corrective Measures Evaluation report for high explosives plume in Cañon de Valle.
- Begin project development activities for removal of General Tanks at Technical Area-21 as a DOE radiological removal action.
- Conduct design activities on the Hexavalent Chromium Pump and Treat Remedy line-item construction project for remediation of chromium contamination in Mortandad and Sandia canyons.

management and infrastructure support to meet Consent Order requirements.

- Conduct authorization basis surface inspections at several Nuclear Environmental Sites and required repairs.
- Complete the Investigation Report and Corrective Measures Evaluation of Material Disposal Area T in support of obtaining final regulatory remedy selection.
- Completion of Townsite cleanup of solid waste management units from the 1940s and 1950s production sites.
- Support Technical Area-21/Delta Prime Site aggregate area and other aggregate area cleanups.
- Continuation of activities for Chromium plume investigation and interim measure progression towards a Corrective Measures Evaluation.
- Prepare groundwater Corrective Measures Evaluation report for high explosives plume in Cañon de Valle.

Nuclear Facility D&D-LANL (Defense) (PBS: VL-LANL-0040-D)

Overview

This PBS is 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.

Nuclear Facility D&D-LANL (Defense) (PBS: VL-LANL-0040-D)

Activities and Explanation of Changes

FY 2015 Enacted	FY 2016 Request	Explanation of Changes FY 2016 vs FY 2015
\$1,500	\$3,000	+\$1,500
<ul style="list-style-type: none"> Continue decontamination and decommissioning activities for process-contaminated facilities at Technical Area-21 which are co-located in the footprint of the structures. Continue demolishing the balance of plant facilities at Technical Area-21. 	<ul style="list-style-type: none"> Continue decontamination and decommissioning activities for process-contaminated facilities at Technical Area-21 which are co-located in the footprint of the structures. Complete demolition of the balance of plant facilities at Technical Area-21. 	<ul style="list-style-type: none"> Increase reflects demolition activities to complete the balance of plant facilities within Technical Area-21.

**LANL
Construction Summary (\$K)**

	Total	Prior Years	FY 2014 Enacted	FY 2014 Current	FY 2015 Enacted	FY 2016 Request	FY 2016 vs FY 2015
Hexavalent Chromium Pump and Treatment Remedy Project, LANL (VL-LANL-0030)							
LANL Soil and Water (VL-LANL-0030)							
Total Estimate Cost (TEC)	89,600	0	0	0	0	0	0
Other Project Costs (OPC)	7,400	0	500	500	0	0	0
Subtotal, Hexavalent Chromium Pump and Treatment Remedy Project, LANL (VL-LANL-0030)	97,000	0	500	500	0	0	0
15-D-406, Hexavalent Chromium Pump and Treatment Remedy Project, LANL (VL-LANL-0030)							
Total Estimate Cost (TEC)	0	0	0	0	4,600	0	-4,600
Other Project Costs (OPC)	0	0	0	0	2,500	1,400	-1,100
Subtotal, 15-D-406, Hexavalent Chromium Pump and Treatment Remedy Project, LANL (VL-LANL-0030)	0	0	0	0	7,100	1,400	-5,700
Total Project Cost (TPC) 15-D-406	TBD	0	500	500	7,100	1,400	-5,700

Nevada

Overview

The near-term and long-term benefits from the Nevada Field 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 at the Nevada National Security Site.

The benefit of maintaining low-level and mixed low-level radioactive waste disposal capabilities is to support cleanup at the Nevada National Security Site and at other DOE sites without onsite disposal capability, and to enable other DOE missions. Disposing radioactive waste from storage locations 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 across the nation.

Highlights of the FY 2016 Budget Request

At the Nevada Field Office the main activities in FY 2016 are associated with Underground Test Area drilling of one post-closure monitoring well in Frenchman Flat, the initiation of Multiple Well Aquifer Testing of the Pahute Mesa wells and continuation of low-level and mixed low-level waste disposal facilities.

FY 2015 and FY 2016 Key Milestones/Outlook

- (September 2015) Continue disposal of Low-Level Waste and Mixed Low-Level Waste; continue audits and certification program; and maintain documents.
- (September 2016) Continue disposal of Low-Level Waste and Mixed Low-Level Waste; continue audits and certification program; and maintain documents.

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) for environmental restoration activities.
- The Federal Facility Compliance Act under the waste management activities.

Contractual Framework

Program planning and management for the Nevada National Security Site is conducted through the issuance and execution of contracts to large and small businesses. Nevada National Security Site develops near-term and long-term planning approaches in order to develop contract strategies and program/activity plans at a more detailed level. Selected contractors then execute these plans to complete cleanup on schedule.

The current prime contract at the Nevada National Security Site is a Management and Operations contract with National Security Technologies, LLC, and is managed by the National Nuclear Security Administration. The contract had a base performance period of 2006 to 2011 with award term options granted through FY 2016. Work Authorizations are placed to cover EM work under the National Nuclear Security Administration Management and Operations contract. This contract includes the EM funded operation of the waste disposal facilities and some environmental cleanup scope.

A second prime contract is in place to support environmental characterization and remediation activities at the site. The current contract with Navarro-Intera is also managed by the National Nuclear Security Administration and was awarded on October 1, 2010, with a two year base performance period and three one-year options, which expired on September 30, 2014, The current contract has been extended for six months pending a new Environmental Program Services contract decision.

Strategic Management

Position the Department of Energy to meet the challenges of the 21st century and the nation's Manhattan Project and Cold War legacy responsibilities:

- Plan and conduct environmental restoration activities in a risk-informed and cost-effective manner in order to complete cleanup of legacy contamination and fulfill legal and regulatory commitments.
- Provide safe, compliant and cost-effective disposal for DOE-generated low-level waste and mixed low-level waste streams, supporting the reduction in both Nevada National Security Site contaminated site footprint, as well as, the cleanup of other DOE sites contaminated footprint.

The following activities directly support the Department's mission and goals to enhance nuclear security through environmental efforts:

- Environmental restoration scope addresses surface and shallow subsurface radiological soil contamination on the Nevada National Security Site and Nevada Test and Training Range. It includes all activities required 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. Industrial-type site restorations address facility decontamination and decommissioning, various legacy systems, structures and sites (e.g., septic systems, mud pits, storage tanks, disposal sites), and conventional weapons disposition including unexploded ordnance.
- Underground test area activities involve geologic and hydrologic characterization, contaminated groundwater transport modeling, and contaminant boundary definition and establishment of a monitoring system to protect against the inadvertent use of contaminated groundwater.
- Waste management scope supports the completion of cleanup at DOE sites across the United States by maintaining the capability to dispose low-level waste and mixed low-level waste. It also supports disposal of waste generated by environmental restoration activities at the Nevada National Security Site.

Nevada

Funding (\$K)

FY 2014 Enacted	FY 2014 Current	FY 2015 Enacted	FY 2016 Request	FY 2016 vs FY 2015
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Defense Environmental Cleanup

NNSA Sites

Nevada

VL-NV-0030 / Soil and Water Remediation-Nevada

41,826

46,587

44,416

38,560

-5,856

VL-NV-0080 / Operate Waste Disposal Facility-Nevada

16,578

11,817

16,940

20,996

+4,056

VL-NV-0100 / Nevada Community and Regulatory Support

3,493

3,493

3,495

2,829

-666

Subtotal, Nevada

61,897

61,897

64,851

62,385

-2,466

Nevada Explanation of Major Changes (\$K)

FY 2016 vs FY 2015

Defense Environmental Cleanup

NNSA Sites

Nevada

VL-NV-0030 / Soil and Water Remediation-Nevada

- Decrease reflects the completion of Frenchman Flat closure activities, the Western and Central Pahute Mesa flow and transport model presentations, Ranier Mesa peer review, and the reprioritization of remaining work. -5,856

VL-NV-0080 / Operate Waste Disposal Facility-Nevada

- Increase supports increased expansion of disposal capacity to meet complex needs and maintenance and/or replacement of equipment to optimize operations. +4,056

VL-NV-0100 / Nevada Community and Regulatory Support

- Decrease reflects level assessed based on proposed scope of work consistent with the Agreement-in-Principle and the Memorandum of Understanding grants with the State of Nevada. -666

Total, Nevada	-2,466
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Soil and Water Remediation-Nevada (PBS: VL-NV-0030)

Overview

This PBS is within the Defense Environmental Cleanup appropriation.

The overall objective of this PBS is to provide for appropriate risk-based remediation of contaminated support facilities and soils, and groundwater modeling on the Nevada National Security 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 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 most of the 1,000 industrial-type sites have been completed, and activities at approximately 1,000 other sites are in progress.

Soil and Water Remediation-Nevada (PBS: VL-NV-0030)

Activities and Explanation of Changes

FY 2015 Enacted	FY 2016 Request	Explanation of Changes FY 2016 vs FY 2015
\$44,416	\$38,560	-\$5,856
<ul style="list-style-type: none"> Continue progress toward closure of approximately 900 subsurface contaminated groundwater sites. Continue Frenchman Flat closure activities including drilling one post closure well. Continue Western and Central Pahute Mesa flow and transport model presentations. Continue annual sampling activities in Pahute Mesa. Continue Pahute Mesa hydrologic and geologic analysis. Conduct mandatory surveillance and maintenance of industrial-type and soil remedial systems to prevent contamination spread. 	<ul style="list-style-type: none"> Continue progress toward closure of approximately 900 subsurface contaminated groundwater sites. Complete Frenchman Flat closure activities including drilling one post closure well. Complete Western and Central Pahute Mesa flow and transport model presentations. Continue annual sampling activities in the Underground Test Area. Continue Pahute Mesa hydrologic and geologic analysis. Conduct mandatory surveillance and maintenance of industrial-type and soil remedial systems to prevent contamination spread. 	<ul style="list-style-type: none"> Decrease reflects the completion of Frenchman Flat closure activities, the Western and Central Pahute Mesa flow and transport model presentations, Ranier Mesa peer review, and the reprioritization of remaining work.

- Complete closure activities for 21 contaminated soils sites.
 - Complete characterization activities for 6 contaminated soils sites.
 - Continue characterization activities for 9 contaminated soils sites.
 - Continue Rainier Mesa peer review.
 - Complete closure activities for 1 contaminated soil site.
 - Complete characterization activities for 5 contaminated soils sites (CAU 541, Small Boy, which has 2 sites, CAU 573, and Alpha).
 - Initiate characterization activities for 2 contaminated soils sites (CAU 413, and Clean Slate II Plutonium Dispersion).
 - Initiate closure activities for 2 contaminated soils sites (CAU 541 and Small Boy).
 - Initiate Yucca Flat Corrective Action Decision Document/Corrective Action Plan.
 - Complete Rainier Mesa peer review.
 - Initiate mandatory Frenchman Flat post-closure monitoring.
-

Operate Waste Disposal Facility-Nevada (PBS: VL-NV-0080)

Overview

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 2030 for waste that requires offsite disposal and for which commercial disposal is not available or cost effective. The funding requested in this PBS supports EM's allocated share of annual disposal costs and therefore is dependent on total waste volumes from all DOE programs. Continuing the practice begun in FY 2009, non-EM programs will fund a share of this activity based upon each program's share of the waste disposed at the Nevada National Security Site – EM's share has increased in recent years. 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 material from approved generators throughout the DOE complex. Preservation of this capability is vital to DOE missions because some DOE waste streams cannot be disposed onsite or at commercial facilities.

Operate Waste Disposal Facility-Nevada (PBS: VL-NV-0080)

Activities and Explanation of Changes

FY 2015 Enacted	FY 2016 Request	Explanation of Changes FY 2016 vs FY 2015
\$16,940	\$20,996	+\$4,056
<ul style="list-style-type: none"> Continue developing and maintaining plans, permits, safety basis, and technical and regulatory support for activities such as the Nevada National Security Site Resource Conservation and Recovery Act Part B Permit. Continue audits and waste certification reviews in support of generator programs to ensure compliance with the Nevada National Security Site Waste Acceptance Criteria. Continue operation of Resource Conservation and Recovery Act mixed low-level waste disposal cell. Support cleanup activities across the DOE complex by disposing approximately 34,000 cubic meters (1,200,000 cubic feet) of low-level and mixed low-level radioactive waste. Excavate one additional low-level waste disposal 	<ul style="list-style-type: none"> Continue developing and maintaining plans, permits, safety basis, and technical and regulatory support for activities such as the Nevada National Security Site Resource Conservation and Recovery Act Part B Permit. Continue audits and waste certification reviews in support of generator programs to ensure compliance with the Nevada National Security Site Waste Acceptance Criteria. Continue operation of Resource Conservation and Recovery Act mixed low-level waste disposal cell. Support cleanup activities across the DOE complex by providing disposal capacity and services for up to 34,000 cubic meters (1,200,000 cubic feet) of low-level and mixed low-level radioactive waste. Excavate one additional low-level waste disposal 	<ul style="list-style-type: none"> Increase supports increased expansion of disposal capacity to meet complex needs and maintenance and/or replacement of equipment to optimize operations.

trench.

trench.

- Replace aging equipment and prepare for future expansion of mixed waste disposal facility/capacity.
-

Nevada Community and Regulatory Support (PBS: VL-NV-0100)

Overview

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

This PBS provides support for Agreements in Principle with two state agencies - the Nevada Division of Emergency Management and the Nevada Division of Environmental Protection. This PBS also includes funding for following: the annual Federal Facilities Agreement; Consent Order fee; and a grant with the State of Nevada to perform programmatic oversight and environmental and natural resource planning.

Nevada Community and Regulatory Support (PBS: VL-NV-0100)

Activities and Explanation of Changes

FY 2015 Enacted	FY 2016 Request	Explanation of Changes FY 2016 vs FY 2015
\$3,495	\$2,829	-\$666
<ul style="list-style-type: none"> • Provide support for State of Nevada regulatory oversight of the Nevada National Security Site. • Provide support for the State of Nevada grant to perform programmatic oversight and to carry out environmental and natural resources planning as it pertains to the Nevada National Security Site. 	<ul style="list-style-type: none"> • Provide support for State of Nevada regulatory oversight of the Nevada National Security Site. • Provide support for the State of Nevada grant to perform programmatic oversight and to carry out environmental and natural resources planning as it pertains to the Nevada National Security Site. 	<ul style="list-style-type: none"> • Decrease reflects level assessed based on proposed scope of work consistent with the Agreement-in-Principle and the Memorandum of Understanding grants with the State of Nevada.

Sandia National Laboratory

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 2010, 265 of 265 soil release sites were considered DOE remediation complete. Three additional soil release sites, bringing the total to 268, are considered "deferred active-mission" sites and will bring a future cleanup liability when mission activities are complete. The remaining cleanup scope will be addressed under Environmental Restoration Operations and currently includes administrative closure activities for the Mixed Waste Landfill, which is one of the soil release sites; administrative closure activities for 23 solid waste management units; three groundwater areas of concern currently in various stages of characterization that require final remedies; and five soil release sites re-opened by the New Mexico Environment Department in 2010. The completion of this scope continues to be regulated by the April 2004 Compliance Order on Consent pursuant to the New Mexico Hazardous Waste Act.

Highlights of the FY 2016 Budget Request

The FY 2016 budget request enables the continuation of groundwater characterization at the Burn Site and Tijeras Arroyo groundwater areas to help deliver current conceptual models of the contamination. Additional characterization may require the installation of groundwater wells. At Burn Site, the weight-of-evidence approach recommended by the EM Internal Remedy Review Team is expected to identify characterization needs in coordination with New Mexico Environment Department. At Technical Area-V Groundwater, additional characterization will help update the conceptual model.

FY 2015 and FY 2016 Key Milestones/Outlook

- (September 2015) Transfer Mixed Waste Landfill to Long-Term Stewardship
- (September 2015) Submit updated Conceptual Model/Corrective Measures Evaluation Report for Technical Area V
- (September 2016) Complete additional characterization at Tijeras Arroyo Groundwater in coordination with EM and New Mexico Environment Department.
- (September 2016) Complete Weight-of-Evidence process at Burn Site Groundwater in coordination with EM and New Mexico Environment Department.

Regulatory Framework

The regulatory driver for completing this work is the April 2004 New Mexico Environment Department Compliance Order on Consent. As of August 2014, 259 of 265 sites considered DOE remediation complete have been approved by the State for no further action through the entire regulatory process. The remaining 6 sites remediated, including the Mixed Waste Landfill, are in various stages of final state regulatory approval. In addition to the soil sites, there are three groundwater areas of concern that are being characterized to determine the remedial action to implement. It is expected that public interactions to arrive at final groundwater remedies will bring project complexities.

Contractual Framework

The current contractor at Sandia National Laboratories is the Sandia Corporation, a Management and Operations contractor who is a subsidiary of the Lockheed Martin Company. This contract is overseen and managed by the National Nuclear

Security Administration. Program planning and management at Sandia National Laboratory is conducted through the issuance and execution of cleanup subcontracts to large and small businesses. Sandia National Laboratory develops near-term and long-term planning approaches in order to develop contract strategies and program/project plans at a more detailed level. Selected subcontractors then execute these plans to complete the cleanup on schedule.

EM work at Sandia is performed under Work Authorizations against the National Nuclear Security Administration's Management and Operations contract with Lockheed Martin.

Strategic Management

Position the Department of Energy to meet the challenges of the 21st century and the nation's Manhattan Project and Cold War legacy responsibilities.

The Sandia National Laboratory's Environmental Restoration Operations mission is to complete all necessary corrective actions at the three groundwater areas of concern, the five re-opened soil release sites and the administrative activities associated with closure of the Mixed Waste Landfill. Three soil release sites that will remain are considered "deferred active-mission" sites and bring a future cleanup liability. The status of these activities and closure goals are : (1) the Mixed Waste Landfill's long-term monitoring and maintenance plan was approved by New Mexico Environment Department and the three 400 foot deep soil vapor wells were installed in July 2014; the majority of the Corrective Action Complete process is to be completed in FY 2015 with transfer to Long-Term Stewardship in early FY 2016, (2) addendums to the Corrective Action Complete binders will be submitted to New Mexico Environment Department in September 2014 for the five re-opened soil release sites that underwent groundwater assessments, and (3) New Mexico Environment Department is engaged in the weight-of-evidence process to determine the source of nitrates at the Burn Site groundwater area. New Mexico Environment Department is in alignment with the DOE EM Internal Remedy Review recommendation to conduct an interim measure at the Technical Area-V groundwater area and the Tijeras Arroyo groundwater area Corrective Measures Evaluation Report requires conceptual model updates. Lessons learned from progressing one of the three groundwater areas to the remedy phase will be applied to the remaining two groundwater areas to help accelerate obtaining final remedies.

Sandia Site Office

Funding (\$K)

FY 2014 Enacted	FY 2014 Current	FY 2015 Enacted	FY 2016 Request	FY 2016 vs FY 2015
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Defense Environmental Cleanup

NNSA Sites

Sandia National Laboratories

VL-SN-0030 / Soil and Water Remediation-Sandia

2,814	2,814	2,801	2,500	-301
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Sandia Site Office Explanation of Major Changes (\$K)

FY 2016 vs FY 2015

Defense Environmental Cleanup

NNSA Sites

Sandia National Laboratories

VL-SN-0030 / Soil and Water Remediation-Sandia

- Decrease reflects completion pre-fieldwork preparations and transfer of Mixed Waste Landfill to NNSA for Long-Term Stewardship.

-301

Total, Sandia Site Office

-301

Soil and Water Remediation-Sandia (PBS: VL-SN-0030)

Overview

This PBS is within the Defense Environmental Cleanup appropriation.

The Sandia National Laboratories Environmental Restoration Operations mission is to complete all necessary corrective actions at the three groundwater areas of concern, the administrative regulatory closure activities associated with the Mixed Waste Landfill, 23 solid waste management units and five soil release sites re-opened by New Mexico Environment Department for groundwater characterization.

Three groundwater areas are expected to transition to long-term stewardship following completion of characterization/evaluation, remedy selection via public hearing and implementation of the determined remedy.

Soil and Water Remediation-Sandia (PBS: VL-SN-0030)

Activities and Explanation of Changes

FY 2015 Enacted	FY 2016 Request	Explanation of Changes FY 2016 vs FY 2015
\$2,801	\$2,500	-\$301
<ul style="list-style-type: none"> • Transfer the Mixed Waste Landfill to the Long-Term Stewardship program. • Submit the Tijeras Arroyo Groundwater Area Corrective Measures Implementation Plan to the New Mexico Environment Department. • Submit Mixed Waste Landfill Class III Permit Mod request to New Mexico Environment Department for regulatory closure. • Submit updated Technical Area-V Current Conceptual Model/Corrective Measures Evaluation Report to New Mexico Environmental Department. • Install up to 8 new groundwater wells at Burn Site. 	<ul style="list-style-type: none"> • Support the continuation of additional groundwater characterization at the Burn Site and Tijeras Arroyo groundwater areas to help deliver current conceptual models of the contamination. • Complete additional characterization at Tijeras Arroyo Groundwater in coordination with New Mexico Environment Department. • Complete Weight of Evidence process at Burn Site Groundwater in coordination with New Mexico Environment Department. 	<ul style="list-style-type: none"> • Decrease reflects completion pre-fieldwork preparations and transfer of Mixed Waste Landfill to NNSA for Long-Term Stewardship.

West Valley Demonstration Project

Overview

The cleanup of the West Valley Demonstration Project will support the Department's Strategic Plan to position the Department of Energy to meet the challenges of the 21st century and the nation's Manhattan Project and Cold War legacy responsibilities. The West Valley Demonstration Project is responsible for stabilizing and dispositioning low-level and transuranic waste and decontaminating and decommissioning of excess facilities, tanks, and equipment.

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. DOE's principal mission at the site 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.

In meeting the Department's strategic goal, the Department will work aggressively to reduce the footprint at the West Valley Demonstration Project site. This involves treating, packaging and disposal of low-level and transuranic waste, cleaning up the environment, and removing or deactivating excess facilities.

Highlights of the FY 2016 Budget Request

The major activities planned for the West Valley Demonstration Project for FY 2016 focus on the relocation of the high-level waste canisters from the Main Plant Process Building to an interim, on-site storage facility. In the FY 2015 Budget this work was previously scheduled to be completed in FY 2015. Due to incorporation of material differences from the previous contract, scope has been rescheduled and will continue in FY 2016. DOE is in negotiations to incorporate material differences into CH2MHill-B&W West Valley contract incorporating removal of the Head-End Cell drums from the Chemical Processing Cell. When the negotiations are completed, the milestone for the completion of the movement of the high-level waste canisters will be revised. Both the removal of the Head-End Cell Drums and the high-level waste canisters are currently on the critical path for the demolition of the Main Plant Process Building (the former reprocessing facility). Removal of the Head-End Cell Drums and the high-level waste will be performed in campaigns throughout FY 2016. After incorporation of the removal of the Head-End Cell drums into the contract, additional milestones will be finalized.

FY 2015 & FY 2016 Key Milestones/Outlook

- (January 2015) Interim Milestone (MS03-09): MPPB-Deactivation of Extraction Cells and Crane Room Complete.
- (June 2015) Interim Milestone (MS01-10): Complete Relocation of High Level Waste, Evacuated Canisters, and Spent Nuclear Fuel debris.
- (July 2015) Complete the High Level Waste Canister Relocation Project (Major Milestone #1).
- (July 2015) Balance of Site Facilities - LSA-3 Demo/Removal Complete (CHBWV MS04-35).
- (August 2015) Balance of Site Facilities - LSA-4 Demo/Removal Complete (CHBWV MS04-36).
- (September 2015) Meet Fiscal Year Shipping requirements as specified in the Site Treatment Plan.
- (December 2015) NRC Licensed Disposal Area North Slope Armoring Complete.
- (March 2016) MPPB Deactivation: Lower Warm Aisle Complete. (Pending)
- (August 2016) MPPB Deactivation: Chemical Operating Aisle South Complete. (Pending)

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) provides for the implementation 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 regarding the Nuclear Regulatory Commission review and consultation during the course of the Project. In accordance with this Memorandum of Understanding, the Nuclear Regulatory Commission reviewed and issued a Technical Evaluation Report supporting the DOE submitted 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.
- Second Supplemental Cooperative Agreement, Supplemental Agreement to the Cooperative Agreement between DOE and the New York State Research and Development Authority Setting Forth Special Provisions for the Identification, Implementation and Management of the Phase I Studies for the Decommissioning and/or Long-Term Stewardship at the West Valley Demonstration Project and Western Nuclear Service Center (dated March 14, 2011).
- 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, 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.

Contractual Framework

Program planning and management at West Valley Demonstration Project is conducted through the issuance and execution of contracts to large and small businesses. The major contracts at the West Valley Demonstration Project include:

- West Valley Demonstration Project CH2M Hill B&W West Valley, LCC, which has a contract period of performance from August 29, 2011, through estimated completion date of April 8, 2019. There are no options on this cost plus award fee contract.
- Safety and Ecology Corporation, an IDIQ task order for Environmental Characterization Services at the West Valley Demonstration Project. This task order to a small business is made against its nationwide indefinite delivery/ indefinite quantity contract. It is a time and materials order for remedial action surveys to evaluate surface soils associated with the Characterization of Balance of Site Facilities.

Strategic Management

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) storage and 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 the Vitrification Facility, 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 has installed 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 Processing Building (the original reprocessing facility) to a new on-site interim storage facility. After the high-level waste canisters are moved, the Main Plant Processing Building and the Vitrification Facility will be decontaminated and demolished consistent with the Environmental Impact Statement Record of Decision.

The following assumptions will impact the overall achievement of the program's strategic goal:

- The Project will be able to disposition higher activity low-level waste off-site, without obstruction, consistent with the 2005 Waste Management Record of Decision.
- Supplemental analyses and amendments to the Record of Decision, as necessary, will allow for off-site disposition of other Project waste.
- The Project's transuranic waste has been included within the Department's ongoing Greater Than Class C low-level Radioactive Waste and Greater Than Class C-like Waste Disposal Environmental Impact Statement. Transuranic waste will be packaged and interim stored until a disposition path is available.

West Valley Demonstration Project

Funding (\$K)

	FY 2014 Enacted	FY 2014 Current	FY 2015 Enacted	FY 2016 Request	FY 2016 vs FY 2015
Defense Environmental Cleanup					
Safeguards and Security					
OH-WV-0020 / Safeguards and Security-West Valley	2,015	2,015	1,471	1,891	+420
Non-Defense Environmental Cleanup					
West Valley Demonstration Project					
OH-WV-0013 / Solid Waste Stabilization and Disposition-West Valley	15,500	8,825	7,938	7,938	0
OH-WV-0040 / Nuclear Facility D&D-West Valley	48,500	55,175	51,048	51,275	+227
Subtotal, West Valley Demonstration Project	64,000	64,000	58,986	59,213	+227
Total, West Valley Demonstration Project	66,015	66,015	60,457	61,104	+647

West Valley Demonstration Project Explanation of Major Changes (\$K)

FY 2016 vs FY 2015

Defense Environmental Cleanup

Safeguards and Security

OH-WV-0020 / Safeguards and Security-West Valley

- Increase supports improvements in cybersecurity. +420

Non-Defense Environmental Cleanup

West Valley Demonstration Project

OH-WV-0040 / Nuclear Facility D&D-West Valley

- Increase supports procuring an additional 5 Vertical Storage Cask casks in FY 2016 to meet relocation requirements. +227

Total, West Valley Demonstration Project	+647
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Safeguards and Security-West Valley (PBS: OH-WV-0020)

Overview

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

The Safeguards and Security Program at the West Valley Demonstration Project protects government assets, information, and technology systems to support the cleanup of this spent fuel reprocessing facility.

This scope will continue until DOE’s mission at the West Valley Demonstration Project is complete.

Safeguards and Security-West Valley (PBS: OH-WV-0020)

Activities and Explanation of Changes

FY 2015 Enacted	FY 2016 Request	Explanation of Changes FY 2016 vs FY 2015
\$1,471	\$1,891	+\$420
<ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> • 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. 	<ul style="list-style-type: none"> • Increase supports improvements in cybersecurity.

Solid Waste Stabilization and Disposition-West Valley (PBS: OH-WV-0013)

Overview

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 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. Transuranic waste will be packaged and interim stored until a disposition path is available.

Solid Waste Stabilization and Disposition-West Valley (PBS: OH-WV-0013)

Activities and Explanation of Changes

FY 2015 Enacted	FY 2016 Request	Explanation of Changes FY 2016 vs FY 2015
\$7,938	\$7,938	0
<ul style="list-style-type: none"> • Process and dispose of legacy mixed low-level waste to be in compliance with the Site Treatment Plan. • Continue processing and disposal of the balance of legacy and low-level waste. • Process and store legacy and transuranic waste. 	<ul style="list-style-type: none"> • Process and dispose of legacy mixed low-level waste to be in compliance with the Site Treatment Plan. • Process and dispose of newly generated mixed low-level waste. • Process and store legacy and transuranic waste. • Ship newly generated Low Level Waste. • Relocate Head End Cell drums out of Main Plant Process Building. • Process and store legacy and transuranic waste. 	<ul style="list-style-type: none"> • No change.

Nuclear Facility D&D-West Valley (PBS: OH-WV-0040)

Overview

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

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. DOE has selected a phased approach for decommissioning activities at the West Valley Demonstration Project. In August 2011, DOE awarded a contract to CH2M Hill-B&W West Valley, LLC to conduct the first phase of decommissioning (Phase I Decommissioning - Facility Disposition) at the West Valley Demonstration Project. The decontamination and decommissioning will be performed consistent with the Nuclear Regulatory Commission criteria per and approved Decommissioning Plan. The Decommissioning Plan includes the relocation of 275 high-level waste canisters from the 50-year old Main Plant Process Building to a new on-site interim storage facility, and the removal of the Main Plant Process Building, the Vitrification Facility, and the Water Treatment Lagoons (Waste Management Areas 1 and 2). In the 2015 Budget request high-level waste relocation was scheduled to be completed in FY 2015. The incorporation of material differences into CH2MHill-B&W West Valley contract resulted in a revised schedule for this work and canister relocation will continue in 2016. Vertical storage casks for the high-level waste canisters continue to be acquired. 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.

Nuclear Facility D&D-West Valley (PBS: OH-WV-0040)

Activities and Explanation of Changes

FY 2015 Enacted	FY 2016 Request	Explanation of Changes FY 2016 vs FY 2015
\$51,048	\$51,275	+\$227
<ul style="list-style-type: none"> • Maintain Site Services. • Continue the relocation of High Level Waste Canisters to a new on-site storage system. • Continue deactivation of the Main Plant Process Building, including deactivation of lab and sample cells and deactivation and deactivation of extraction cells and crane room. • Continue removal of excess ancillary facilities. 	<ul style="list-style-type: none"> • Maintain Site Services. • Continue the relocation of High Level Waste Canisters to a new on-site storage system. • Continue deactivation of the Main Plant Process Building: deactivate Acid Recovery Pump Room, Ram Equipment Room, Uranium Load Out and Lower Warm Aisle. • Continue removal of excess ancillary facilities. 	<ul style="list-style-type: none"> • Increase supports procuring an additional 5 Vertical Storage Cask casks in FY 2016 to meet relocation requirements.

Energy Technology Engineering Center

Overview

Cleanup at the Energy Technology Engineering Center will support the Department's Strategic Plan to continue cleanup of radioactive and chemical waste resulting from the Manhattan Project and Cold War activities. Cleanup activities at the Energy Technology Engineering Center involve completion of site characterization, completion of a court-ordered Environmental Impact Statement, deactivation, decommissioning, and demolition of excess facilities; remediation of contaminated groundwater and soil, and disposition of resulting radioactive and hazardous waste.

The Energy Technology Engineering Center, which was DOE's laboratory for nuclear and liquid metal research (non-defense) at the Santa Susana Field Laboratory, owned by The Boeing Company, is a collection of facilities within Area IV of Santa Susana Field Laboratory. The Energy Technology Engineering Center is surplus to DOE's mission. There are 18 numbered structures remaining, consisting of two radiological facilities, two sodium facilities, and other miscellaneous structures. Current activities at the site involve characterization and investigation to support development of an Environmental Impact Statement, decontamination and decommissioning of the remaining structures, remediation of soil and groundwater contamination, and closure.

The Energy Technology Engineering Center project, including the work in FY 2016, is being performed in accordance with the requirements of three compliance orders as follows:

- 2007 order by the U.S. District Court for the Northern District of California requiring DOE to complete an Environmental Impact Statement.
- 2007 Consent Order with the State of California requiring remediation of chemically contaminated soils and completion of a Resource Conservation and Recovery Act Facility Investigation for groundwater. Soil remediation is to be complete and a cleanup remedy for groundwater is to be in place by 2017.
- 2010 Administrative Order on Consent with the State of California requiring soil remediation to be complete by 2017.

Direct maintenance and repair at the Energy Technology Engineering Center site is estimated to be \$265,000.

Highlights of the FY 2016 Budget Request

The Energy Technology Engineering Center's FY 2016 request will enable the site to continue progress toward completion of cleanup, including the completion of the required Environmental Impact Statement. Completion of cleanup, including decontamination and decommissioning and soil remediation, by 2017 is a Resource Conservation and Recovery Act milestone established by the 2007 Consent Order and further supported by the 2010 Administrative Order on Consent. The FY 2016 budget request provides funding to carry out the requirements of the National Environmental Policy Act, including completion of an Environmental Impact Statement and Record of Decision and to meet the Resource Conservation and Recovery Act requirements of the 2007 Consent Order and the requirements of the 2010 Administrative Order on Consent; however, planned progress on required cleanup activities may be impacted due to the time required to complete the Environmental Impact Statement and issue the Record of Decision.

FY 2015 & FY 2016 Key Milestones/Outlook

- (Jul 2015) Issue Draft Environmental Impact Statement for public comment and response.
- (Aug 2015) Conduct Environmental Impact Statement public comment meetings and comment resolution.
- (Sep 2015) Complete Resource Conservation and Recovery Act Facility Investigation groundwater character program.
- (Sep 2015) Submit the Final Remedial Investigation Plan to State Regulators towards approval of Remedial Plan.
- (Sep 2015) Submit the conceptual groundwater model report to the Regulators.
- (Sep 2015) Begin work on Final Environmental Impact Statement and Record of Decision.
- (Apr 2016) Revise & submit Resource Conservation and Recovery Act groundwater Remedial Investigation Report in accordance with the Resource Conservation and Recovery Act requirements of the 2007 Consent Order.
- (Sep 2016) Complete Final Environmental Impact Statement.

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 were conducted under Atomic Energy Act authority. The U.S. District Court for the Northern District of California directed 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 in May 2007. A Notice of Intent to prepare an Environmental Impact Statement was published in the Federal Register in May 2008. Since DOE's 2008 Notice of Intent, extensive studies of the site for radiological and chemical contamination have been ongoing and are nearing completion. Based on the 2010 Administrative Order on Consent that DOE and the California Department of Toxic Substances Control signed for soil cleanup, and due to information now available from site characterization, DOE published an Amended Notice of Intent to prepare an Environmental Impact Statement in February 2014.

The Resource Conservation and Recovery Act groundwater cleanup is regulated by the California Department of Toxic 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 completed negotiation of an Administrative Order on Consent with the California Department of Toxic Substance Control in December 2010 for all remaining soil characterization and remediation.

Contractual Framework

North Wind Incorporated is the contractor performing general environmental monitoring, surveillance & maintenance. Under the contract there are options for decontamination and decommissioning, which may be exercised after the Environmental Impact Statement and Record of Decision determine the scope of work.

Strategic Management

In meeting the Department's strategic goal, Position the Department of Energy to meet the challenges of the 21st century and the nation's Manhattan Project and Cold War legacy responsibilities, the Department will work aggressively to reduce the footprint at the Energy Technology Engineering Center. This involves the planning and characterization activities required for cleaning up the environment, and removing or deactivating unneeded facilities.

Energy Technology Engineering Center

Funding (\$K)

FY 2014 Enacted	FY 2014 Current	FY 2015 Enacted	FY 2016 Request	FY 2016 vs FY 2015
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Non-Defense Environmental Cleanup

Small Sites

Energy Technology Engineering Center

CBC-E TEC-0040 / Nuclear Facility D&D-Energy Technology
Engineering Center

9,404	9,367	8,959	10,459	+1,500
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Energy Technology Engineering Center Explanation of Major Changes (\$K)

FY 2016 vs FY 2015

Non-Defense Environmental Cleanup	
Small Sites	
Energy Technology Engineering Center	
CBC-ETEC-0040 / Nuclear Facility D&D-Energy Technology Engineering Center	
• Increase reflects increased costs associated with the completion of the final Environmental Impact Statement in FY 2016.	+1,500
<hr/>	
Total, Energy Technology Engineering Center	+1,500

Nuclear Facility D&D-Energy Technology Engineering Center (PBS: CBC-E TEC-0040)

Overview

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

The purpose of this PBS scope is to: 1) clean up contaminated release sites; 2) decontaminate, decommission, and demolish radioactively and chemically contaminated facilities for eventual release of the property to the Boeing Company (the site owner); 3) perform 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, decontamination, decommissioning, and demolition are complete except for the Sodium Pump Test Facility, Building 4024, Hazardous Waste Management Facility, Radioactive Materials Handling Facility complex, and a number of other miscellaneous structures. Soil and groundwater characterization is being performed.

In 2007, DOE received Court-ordered direction to prepare an Environmental Impact Statement regarding the cleanup of the ETEC facilities. Additionally, the State of California issued an Administrative Order on Consent (2007) for groundwater remediation and a Consent Order (2010) for cleanup of soils to a background level established by the State by 2017. Due to the 2007 Court decision, DOE is unable to conduct further decontamination and decommissioning activities until the completion of a site-wide Environmental Impact Statement and issuance of the associated Record of Decision. The Environmental Impact Statement and the Record of Decision are planned to be completed in 2016.

The end-state is to complete cleanup for both radiological contamination and chemical contamination and demolition of remaining structures. The site will then be transferred to the Boeing Company, which owns the land.

Nuclear Facility D&D-Energy Technology Engineering Center (PBS: CBC-E TEC-0040)

Activities and Explanation of Changes

FY 2015 Enacted	FY 2016 Request	Explanation of Changes FY 2016 vs FY 2015
\$8,959	\$10,459	+\$1,500
<ul style="list-style-type: none"> Perform ongoing program support and operational services. Complete the Resource Conservation and Recovery Act Facility Investigation groundwater characterization program. Submit the Final Remedial Investigation Plan to the State Regulators towards the approval of the Remedial Plan. 	<ul style="list-style-type: none"> Perform ongoing program support and operational services. Respond to comments received on Draft Environmental Impact Statement. Develop and issue Final Environmental Impact Statement. Prepare for issuance of the Record of Decision. 	<ul style="list-style-type: none"> Increase reflects increased costs associated with the completion of the final Environmental Impact Statement in FY 2016.

- Submit the site conceptual groundwater model report.
 - Submit Soils Remedial Action Implementation Plan to the State Regulators.
 - Complete Draft Environmental Impact Statement and provide to the State Regulators.
 - Begin work on Final Environmental Impact Statement and Record of Decision.
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Moab

Overview

The cleanup of the Moab site will support the Department's Strategic Plan to continue cleanup of radioactive and chemical waste resulting from the Manhattan Project and cold war activities. In October 2000, the Floyd D. Spence National Defense Authorization Act of 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. The project involves the excavation and transportation of a 16,000,000 ton pile of uranium mill tailings from near the Colorado River at the Moab site, and placement/disposal at an engineered disposal cell constructed at Crescent Junction, Utah. Through September 30, 2014, the project has hauled 7,172,196 tons of uranium mill tailings from the Moab site to the disposal site. On November 18, 2014, an unexpected rock fall occurred on the hillside above the rail bench which stopped hauling operations. Safety measures are being considered to mitigate the risks which include radar monitoring, a 12 foot high berm, realignment of the haul road, and a shelter in place on the rail bench.

Direct maintenance and repair at the Moab Site is estimated to be \$201,000.

Highlights of the FY 2016 Budget Request

Year round shipping of approximately 900,000 tons of tailings; place interim cover in a timely manner; and address deferred maintenance.

FY 2015 & FY 2016 Key Milestones/Outlook

- (Sep 2015) Excavate, transport, and dispose of 700,000 tons of tailings adjusted due to haul stoppage from rock fall.
- (Sep 2016) Excavate, transport, and dispose of 900,000 tons of tailings.

Regulatory Framework

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.

Contractual Framework

The term contract for removing and transporting waste from the site by rail was awarded to Portage, Inc. on a cost plus award fee basis for performance from April 29, 2012, through September 30, 2016. This contract includes a fixed unit price fee. There are no options under the contract. DOE will conduct acquisition planning to support award of a follow-on contract prior to the end of the current contract term.

Strategic Management

In meeting the Department's strategic goal, Position the Department of Energy to meet the challenges of the 21st century and the nation's Manhattan Project and Cold War legacy responsibilities, the Department will work aggressively to address cleanup at the Moab site. This involves the transport of uranium mill tailings away from its current location near the Colorado River and Arches National Park to a DOE disposal facility in Crescent Junction, Utah.

Moab

Funding (\$K)

FY 2014 Enacted	FY 2014 Current	FY 2015 Enacted	FY 2016 Request	FY 2016 vs FY 2015
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Non-Defense Environmental Cleanup

Small Sites

Moab

CBC-MOAB-0031 / Soil and Water Remediation-Moab

38,000	36,478	35,663	37,629	+1,966
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Moab Explanation of Major Changes (\$K)

FY 2016 vs FY 2015

Non-Defense Environmental Cleanup

Small Sites

Moab

CBC-MOAB-0031 / Soil and Water Remediation-Moab

- Increase supports shipping of approximately 900,000 tons of tailings and accelerated placement of disposal cell cover and excavation of the next cell phase. +1,966

Total, Moab	+1,966
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Soil and Water Remediation-Moab (PBS: CBC-MOAB-0031)

Overview

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

The project scope is to remediate radioactive uranium 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 requires 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.

Soil and Water Remediation-Moab (PBS: CBC-MOAB-0031)

Activities and Explanation of Changes

FY 2015 Enacted	FY 2016 Request	Explanation of Changes FY 2016 vs FY 2015
\$35,663	\$37,629	+\$1,966
<ul style="list-style-type: none"> Conduct Moab and Crescent Junction sites operation and maintenance. Operate interim remedial action for contaminated groundwater including extracting 12,000,000 gallons and diverting/injecting 8,000,000 gallons. Excavate tailings and transport from mill site to the disposal cell (700,000 tons). Place tailings into the disposal cell. Place protective interim cover on filled section of the disposal cell. Implement actions to mitigate impact and reduce future risks associated with rock fall(s). 	<ul style="list-style-type: none"> Conduct Moab and Crescent Junction sites operation and maintenance. Operate interim remedial action for contaminated groundwater including extracting 12,000,000 gallons and diverting/injecting 8,000,000 gallons. Excavate tailings and transport from mill site to the disposal cell (900,000 tons). Place tailings into the disposal cell. Place protective interim cover on filled section of the disposal cell. Continue actions to mitigate impact and reduce future risks associated with rock fall(s). 	<ul style="list-style-type: none"> Increase supports shipping of approximately 900,000 tons of tailings and accelerated placement of disposal cell cover and excavation of the next cell phase.

Other Sites

Overview

In supporting the Department's Strategic Plan, Position the Department of Energy to meet the challenges of the 21st century and the nation's Manhattan Project and Cold War legacy responsibilities, the Environmental Management Program manages program scope that 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 have continuing EM mission requirements; however, some may have no funding requirements in FY 2016. The sites included in this section are in the final stages of cleanup and closure or have actually transitioned to the post-closure phase. These sites have contributed to the Department's strategic goal on footprint reduction and now only 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.). This account also includes a site/facility for which DOE has no liability or mission requirement, but for which Congress has provided funds.

Lawrence Berkeley National Laboratory

The Consolidated Appropriations Act Conference Report, 2012 (Public Law 112-331), directed DOE to utilize \$10,000,000 of the Non-Defense Environmental Cleanup funds to "improve health and safety by cleaning up existing contamination and improving the seismic standards of buildings within Department laboratory grounds". In the FY 2013 full-year Continuing Resolution, DOE received another \$9,478,000. In the FY 2014 Omnibus Appropriations Bill, DOE received another \$17,786,000 toward this effort. DOE will utilize these funds to deactivate, decommission and demolish various facilities in the "Old Town" area of Lawrence Berkeley National Laboratory and remove associated contaminated soil to fulfill this Congressional mandate. There is no FY 2016 funding request for additional efforts.

Southwest Experimental Fast Oxide Reactor (SEFOR)

Congress mandated in the FY 2014 Omnibus Appropriations Act that DOE develop a plan for the decommissioning and decontamination of the University of Arkansas' Southwest Experimental Fast Oxide Reactor and provided \$1,000,000. The plan for the cleanup of the Southwest Experimental Fast Oxide Reactor is to be submitted to the Committees on Appropriations of the House and Senate. DOE has no liability at this facility. There is no FY 2016 funding request for additional efforts.

EM Consolidated Business Center

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 within this Other Sites budget. The Consolidated Business Center provides defense post-closure administrative and litigation support for the Fernald, Miamisburg, Rocky Flats and other Small Sites. The Consolidated Business Center also provides oversight of the cleanup efforts ongoing at Lawrence Berkeley National Laboratory, the Moab Uranium Mill Tailings Remedial Action Project, the West Valley Demonstration Project, the Separations Process Research Unit, and the Energy Technology Engineering Center. The EM Consolidated Business Center also serves as the lead EM office for new cleanup contract acquisitions as need to support the EM program mission.

Highlights of the FY 2016 Budget Request

Continue regulatory support of the Fernald Closure Project, the ongoing Rocky Flats Closure Project's legal requirements and court orders for the Cook case and small sites litigation requirements.

Strategic Management

In supporting the Department's Strategic Plan, the Environmental Management program will conduct closure and post-closure administrative activities at a number of geographic sites across the nation.

Other Sites

Funding (\$K)

	FY 2014 Enacted	FY 2014 Current	FY 2015 Enacted	FY 2016 Request	FY 2016 vs FY 2015
Defense Environmental Cleanup					
Closure Sites					
Closure Sites Administration					
CBC-0100-FN / CBC Post Closure Administration - Fernald	1,500	800	1,500	1,300	-200
CBC-0100-MD / CBC Post Closure Administration - Mound	0	285	0	0	0
CBC-0100-RF / CBC Post Closure Administration - Rocky Flats	3,202	3,617	3,389	3,589	+200
Subtotal, Closure Sites Administration	4,702	4,702	4,889	4,889	0
Non-Defense Environmental Cleanup					
Small Sites					
Closure Sites Administration					
CBC-ND-0100 / CBC - Non-Defense Post Closure Administration and Program Support	0	0	8,408	0	-8,408
DOE-Sponsored Facilities (per P.L. 112-74)					
CBC-LBNL-0040 / Decontamination and Decommissioning-Lawrence Berkeley National Laboratory	17,786	17,786	0	0	0
Southwest Experimental Fast Oxide Reactor (SEFOR)					
SEFOR / SEFOR	1,000	1,000	0	0	0
Total, Small Sites	18,786	18,786	8,408	0	-8,408
Total, Other Sites	23,488	23,488	13,297	4,889	-8,408

Other Sites Explanation of Major Changes (\$K)

FY 2016 vs FY 2015

Defense Environmental Cleanup

Closure Sites

Closure Sites Administration

CBC-0100-FN / CBC Post Closure Administration - Fernald

- Decrease reflects funding requirements for Fernald Workers II Settlement and post-closure administrative costs. -200

CBC-0100-RF / CBC Post Closure Administration - Rocky Flats

- Increase due to increased activity in legal claims. +200

Non-Defense Environmental Cleanup

Small Sites

CBC-ND-0100 / CBC - Non-Defense Post Closure Administration and Program Support

- Decrease reflects repayment of the Judgment Fund to the Treasury in FY 2015 for the MK Ferguson payment made in April 2013. -8,408

Total, Other Sites	-8,408
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CBC Post Closure Administration – Fernald (PBS: CBC-0100-FN)

Overview

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

This Post-Closure Administration PBS scope includes the Fernald Closure Project post closure administration and litigation support.

CBC Post Closure Administration - Fernald (PBS: CBC-0100-FN)

Activities and Explanation of Changes

FY 2015 Enacted	FY 2016 Request	Explanation of Changes FY 2016 vs FY 2015
\$1,500	\$1,300	-\$200
<ul style="list-style-type: none"> Ongoing Fernald Workers II class action lawsuit and contract closeout funding requirements. 	<ul style="list-style-type: none"> Fund the Fernald Workers II class action lawsuit and contract closeout at the Fernald closure site. 	<ul style="list-style-type: none"> Decrease reflects funding requirements for Fernald Workers II Settlement and post-closure administrative costs.

CBC Post Closure Administration – Rocky Flats (PBS: CBC-0100-RF)

Overview

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

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. 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 PBS also funds the records management vault and the labor for the vault classifiers.

CBC Post Closure Administration - Rocky Flats (PBS: CBC-0100-RF)

Activities and Explanation of Changes

FY 2015 Enacted	FY 2016 Request	Explanation of Changes FY 2016 vs FY 2015
\$3,389	\$3,589	+\$200
<ul style="list-style-type: none"> • Fund the ongoing Rocky Flats Closure Project's legal requirements and court orders for the Cook and Stone cases. • Fund the Rocky Flats records vault lease and records management costs. • Fund Workers Comp, Contract Closeout and other litigation support for the Small Sites. • Fund payment of additional contract liability related to Rocky Flats contract (Kaiser Hill). 	<ul style="list-style-type: none"> • Fund the ongoing Rocky Flats Closure Project's legal requirements and court orders for the Cook case. • Fund the Rocky Flats records vault lease and records management costs. • Fund Workers Comp, Contract Closeout and other litigation support for the Small Sites. • Fund payment of additional contract liability related to Rocky Flats contract (Kaiser Hill). 	<ul style="list-style-type: none"> • Increase due to increased activity in legal claims.

CBC – Non-Defense Post Closure Administration and Program Support (PBS: CBC-ND-0100)

Overview

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

This Post-Closure Administration PBS scope includes contract closeout, litigation support, settlement claims, Freedom of Information Act/Privacy Act compliance, and contractor workman's compensation claims for Non-Defense contracts in closeout. The Judgment Fund paid \$8,408,000 for the MK Ferguson judgment against DOE in April 2013 and funds for repayment to the Treasury were requested in FY 2015.

CBC - Non-Defense Post Closure Administration and Program Support (PBS: CBC-ND-0100)

Activities and Explanation of Changes

FY 2015 Enacted	FY 2016 Request	Explanation of Changes FY 2016 vs FY 2015
\$8,408	0	-\$8,408
<ul style="list-style-type: none"> The Treasury Judgment Fund paid the settlement for MK Ferguson in April 2013. All Contract Dispute Act judgments must be repaid. Invoice received on April 12, 2013. DOE responded to the Department of Treasury indicating that the funding would be requested in FY 2015 to repay the Judgment Fund. 	<ul style="list-style-type: none"> No activities. 	<ul style="list-style-type: none"> Decrease reflects repayment of the Judgment Fund to the Treasury in FY 2015 for the MK Ferguson payment made in April 2013.

Southwest Experimental Fast Oxide Reactor – SEFOR (PBS: SEFOR)

Overview

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

Congress mandated in the FY 2014 Omnibus Appropriations Act that DOE develop a plan for the decommissioning and decontamination of the Southwest Experimental Fast Oxide Reactor. This facility is not owned by DOE, and DOE has no cleanup liability at the site. The requested plan has been provided to the Committees on Appropriations.

SEFOR (PBS: SEFOR)

Activities and Explanation of Changes

FY 2015 Enacted	FY 2016 Request	Explanation of Changes FY 2016 vs FY 2015
0	0	0
<ul style="list-style-type: none"> DOE has not requested FY 2015 funding for Southwest Experimental Fast Oxide Reactor. 	<ul style="list-style-type: none"> DOE has not requested FY 2016 funding for Southwest Experimental Fast Oxide Reactor. 	<ul style="list-style-type: none"> No change.

Decontamination and Decommissioning-Lawrence Berkeley National Laboratory (PBS: CBC-LBNL-0040)

Overview

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

This PBS includes the deactivation and demolition of various facilities and removal of associated contaminated soil in the Old Town Vicinity of the Lawrence Berkeley National Laboratory. Critical Decision 1, Approve Alternative Selection and Cost Range, was approved for the project in October 2013 and reflected the plan to conduct the project in two phases. Critical Decision 2/3, Approve Performance Baseline/Start Construction, for Phase 1 of the project was approved in December 2014. Phase 1 includes the deactivation and removal of Buildings 5, 16, and 16A and associated slabs, as well as removal of slabs from four former buildings, remediation of adjacent soil and disposition of wastes generated by these activities. Field work will begin early in calendar year 2015 for these Phase 1 activities.

Decontamination and Decommissioning-Lawrence Berkeley National Laboratory (PBS: CBC-LBNL-0040)

Activities and Explanation of Changes

FY 2015 Enacted	FY 2016 Request	Explanation of Changes FY 2016 vs FY 2015
0	0	0
<ul style="list-style-type: none"> Initiate Phase 1 facility decontamination and decommissioning activities in the Old Town Vicinity of the Lawrence Berkeley National Laboratory with funding previously provided by Congress. 	<ul style="list-style-type: none"> Continue Phase 1 facility deactivation and demolition activities and removal of associated contaminated soil in the Old Town Vicinity of the Lawrence Berkeley National Laboratory with funding previously provided by Congress. 	<ul style="list-style-type: none"> No change.

Mission Support

Overview

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 federal government.

The EM Minority Serving Institution Partnership Program for the Department is also supported within the Headquarters Operations program.

Minority Serving Institutions Partnership Program

In FY 2010, EM began managing the Minority Serving Institution Partnership Program for the Department to achieve the DOE goals of the partnership. This includes aligning the processes and outcomes with the departmental mission in order to develop the needed skills and talent for DOE's enduring technical workforce at its laboratories and production plants, and to enhance research and education in science, technology, engineering, and mathematics at under-represented colleges and universities.

EM Traineeship Program

In order to address the ongoing technical challenges of the EM program, EM established an EM Traineeship Program that focuses on Subsurface Contaminant Migration and Remediation and Project Management for Nuclear-Hazardous Waste Management Projects. This program is University led graduate training, developed in collaboration/partnership with the DOE National Laboratories and provides significant training for students as a part of the traineeship. The training program supports term-limited postdoctoral appointments at DOE laboratories for practical, hands-on experience supporting a broad range of subsurface remediation and project management applications, ensuring cross-disciplinary training.

Strategic Sourcing Initiative

In FY 2012, EM embarked on this effort led by the EM Consolidated Business Center in conjunction with the National Nuclear Security Administration. This is an effort whereby materials such as concrete, steel, etc., are located and purchased corporately, netting EM economies of scale savings. This effort resulted in savings of approximately \$10,000,000 in FY 2013 and \$17,800,000 in FY 2014. This investment is expected to result in savings to the Department in excess of \$20,000,000 in FYs 2015 and 2016.

Technology Development and Deployment

The Technology Development and Deployment program focuses on resolving technical challenges using science and innovation to develop practical solutions for environmental cleanup in response to the highest priority needs of the Office of Environmental Management sites. The program provides key investments in mid- and long-range research and development projects focused on developing new cleanup methods where none previously existed, reducing the cost, and accelerating the schedule of high priority cleanup issues. The program addresses issues related to: (1) tank waste, (2) soil and water remediation, (3) nuclear materials management and disposition, and (4) deactivation and decommissioning of contaminated excess facilities including nuclear reactors and chemical separation plants.

These research and development projects are aimed at improving the technical maturity for current baseline technologies and improving or providing next-generation technologies for insertion into program projects, all leading to developing more cost-effective alternative cleanup solutions. In FY 2014, EM enhanced its Technology Development and Deployment efforts

with a coordinated two-prong approach where select activities would be managed at Headquarters while others would be managed at the field sites:

- Longer-term activities with low technology readiness levels (high technology risk) are managed at Headquarters and are reflected in this budget chapter.
- Shorter-term activities with higher technology readiness levels (low technology risk) are managed at the sites where the technology will result in direct mission-related benefits. These activities are discussed in their respective site budgets.

Within the FY 2016 Budget Request, EM supports the Departmental crosscut for Subsurface Engineering at \$8,000,000, \$2,000,000 of which is included within this account. The goal of the Subsurface Engineering crosscut includes understanding geochemical and geophysical responses in natural and engineered subsurface environments; improving the safety and cost-effectiveness of drilling; developing and maintaining specific subsurface conditions in challenging environments; and advancing the understanding of multi-scale complexities in the subsurface over long time scales.

This crosscut funding supports plans for a deep borehole field test through the use of test platforms for technologies or methodologies and infrastructure development, led by the Department's Office of Nuclear Energy. It also supports Office of Environmental Management investigation of potential candidate wastes and waste forms suitable for borehole disposal.

Reimbursement and Review of Claims for Uranium and Thorium Licensees

Pursuant to Title X of the Energy Policy Act of 1992 (Public Law 102-486 as amended) and 10 CFR Part 765, the Reimbursement to Uranium and Thorium licensees includes reimbursements to fourteen active uranium and thorium processing site licensees for that portion of the environmental cleanup costs attributable to nuclear material sold to the federal government during the Cold War Era. Title X authorizes the Department to reimburse eligible costs to licensees.

The intent of Title X is to reimburse eligible costs previously incurred by licensees, and does not relieve licensees of their liability to complete environmental restoration of their former mill sites. Through September 2014, three of the fourteen sites have completed remediation and have transferred their disposal facilities to DOE for long-term stewardship; one of these sites is still eligible for reimbursements. One site, Moab, was transferred to DOE by Public Law 106-398 and is no longer within the Title X program. Ten sites have continuing remediation programs, one of which may complete cleanup in 2015.

Mercury Export Ban Act of 2008

The Mercury Export Ban Act of 2008, which banned 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 Act required that a storage facility be operational by January 1, 2013. Additionally, DOE's mercury storage operations will be subject to the requirements of the Resource Conservation and Recovery Act. DOE began preparation of an Environmental Impact Statement in May 2009 to identify a location for a long-term elemental mercury management and storage facility. The final Environmental Impact Statement was issued in January 2011. In June 2012, DOE announced its intention to evaluate additional locations near the Waste Isolation Pilot Plant in Carlsbad, New Mexico, in a Supplement to the Environmental Impact Statement. The final Supplement to the Environmental Impact Statement was issued in October 2013. The timing of issuance of a record of decision and final decision on site selection has not been determined.

Greater-than-Class-C Waste

DOE anticipates issuing the final environmental impact statement for the disposal of greater-than-class-C low-level radioactive waste and greater-than-class-C-like waste in calendar year 2015. Once the final environmental impact statement is issued and as required under Section 631 of the Energy Policy Act of 2005 (Public Law 109-58), DOE will submit a report to Congress that includes information on greater-than-class-C waste, alternatives evaluated for the safe disposal of the waste, options for cost recovery, and identification of any statutory authority required for disposal of the waste. Per Section 631, DOE must await action by Congress prior to issuing a Record of Decision for the disposal of greater-than-class-C low-level radioactive waste.

FY 2016 Crosscuts (\$K)

Subsurface Engineering

Technology Development and Deployment

2,000

Mission Support

Funding (\$K)

	FY 2014 Enacted	FY 2014 Current	FY 2015 Enacted	FY 2016 Request	FY 2016 vs FY 2015
Defense Environmental Cleanup					
Program Support					
Mission Support					
EM-HBCU-0100 / Minority Serving Institution Partnerships Program	8,000	8,000	8,000	8,000	0
HQ-MS-0100 / Policy, Management, and Technical Support	9,979	9,979	6,979	6,979	0
Subtotal, Mission Support	17,979	17,979	14,979	14,979	0
Technology Development and Deployment					
Mission Support					
HQ-TD-0100 / Technology Development	18,000	17,424	14,000	14,510	+510
Total, Defense Environmental Cleanup	35,979	35,403	28,979	29,489	+510
Uranium Enrichment Decontamination and Decommissioning Fund					
U/Th Reimbursements					
Mission Support					
HQ-UR-0100 / Reimbursements to Uranium/Thorium Licensees	0	0	10,000	32,959	+22,959
Total, Mission Support	35,979	35,403	38,979	62,448	+23,469

Mission Support Explanation of Major Changes (\$K)

FY 2016 vs FY 2015

Defense Environmental Cleanup	
Technology Development and Deployment	
Mission Support	
HQ-TD-0100 / Technology Development	
<ul style="list-style-type: none"> Increase reflects that within the technology development request, \$2,000,000 in FY 2016 will support the deep borehole field test. 	+510
Uranium Enrichment Decontamination and Decommissioning Fund	
U/Th Reimbursements	
HQ-UR-0100 / Reimbursements to Uranium/Thorium Licensees	
<ul style="list-style-type: none"> Increase supports increased payment of approved claims to the eligible licensees, fulfilling DOE’s statutory responsibilities and reducing the backlog of approved but unpaid claims. 	+22,959
<hr/>	
Total, Mission Support	+23,469

Minority Serving Institution Partnership Program (PBS: EM-HBCU-0100)

Overview

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

The office of Environmental Management supports the Minority Serving Partnership Program to attract, develop, and retain the technical workforce at its national laboratories and production plants required to execute its mission.

Goals for this partnership include:

- Increase number of Minority Serving Institution students who graduate with Science, Technology, Engineering, and Mathematics degrees relevant to DOE mission areas and have had exposure to career opportunities at DOE sites.
- Strengthen and expand Minority Serving Institution research experience and competitiveness in DOE mission areas of interest.
- Increase visible participation of Minority Serving Institution faculty in DOE technical engagements and activities, such as collaborative research, technical workshops, and competitive processes.
- Target collaborations between accredited Minority Serving Institutions and DOE laboratories and plants that increase scientist-to-scientist interactions, applied research and engineering collaborations and/or implementation of research results, and access of Minority Serving Institutions to DOE facilities.
- Increase number of Minority Serving Institution graduates/postdocs hired into DOE’s technical and scientific workforce.

The Minority Serving Institutional Partnership Program aligns Minority Serving Institutional investments with the departmental mission in order to develop the needed skills and talent for DOE’s enduring technical workforce at the laboratories and production plants, and to enhance the research and education at under-represented colleges and universities.

Minority Serving Institution Partnerships Program (PBS: EM-HBCU-0100)

Activities and Explanation of Changes

FY 2015 Enacted	FY 2016 Request	Explanation of Changes FY 2016 vs FY 2015
\$8,000	\$8,000	0
<ul style="list-style-type: none"> • Continue support for the Department’s Minority Serving Institution Partnerships Program to attract, develop, and retain the technical workforce at its national laboratories and production plants required to execute its mission. 	<ul style="list-style-type: none"> • Continue support for the Department’s Minority Serving Institution Partnerships Program to attract, develop, and retain the technical workforce at its national laboratories and production plants required to execute its mission. 	<ul style="list-style-type: none"> • No change.

Policy, Management, and Technical Support (PBS: HQ-MS-0100)

Overview

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

This PBS scope includes management and direction for various crosscutting EM and DOE programs and 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 and associated implementation activities for Greater-Than-Class C radioactive waste disposal, as required by Section 631 of the Energy Policy Act of 2005. This PBS also supports the Department’s Strategic Sources Initiative.

Policy, Management, and Technical Support (PBS: HQ-MS-0100)

Activities and Explanation of Changes

FY 2015 Enacted	FY 2016 Request	Explanation of Changes FY 2016 vs FY 2015
\$6,979	\$6,979	0
<ul style="list-style-type: none"> • Provide support for DOE’s Strategic Sources Initiative to purchase commodities through a supply chain framework, which results in cost avoidance on purchases. • Support for EM’s Traineeship Program that focuses on Subsurface Contaminant Migration and Remediation and Project Management for Nuclear-Hazardous Waste Management Projects. • Provide support for various Secretarial and Departmental initiatives, including the Defense Contracts Audit Agency audits, Government Industry Data Exchange Program and Consolidated Accounting Investment System. • Provide expertise in the areas of safety, health and security, emergency management, quality assurance, nuclear criticality safety, and risk 	<ul style="list-style-type: none"> • Continue support for DOE’s Strategic Sources Initiative to purchase commodities through a supply chain framework, which results in cost avoidance on purchases. • Continue support for EM’s Traineeship Program that focuses on Subsurface Contaminant Migration and Remediation and Project Management for Nuclear-Hazardous Waste Management Projects. • Continue support for various Secretarial and Departmental initiatives, including the Defense Contracts Audit Agency audits, Government Industry Data Exchange Program and Consolidated Accounting Investment System. • Continue to provide expertise in the areas of safety, health and security, emergency 	<ul style="list-style-type: none"> ▪ No change.

management.

- Provide support to 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.
- 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.
- Provide support to packaging and transportation stakeholders outreach grants.
- 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.
- Perform analysis for long-term elemental mercury management and storage facility.

management, quality assurance, nuclear criticality safety, and risk management.

- Continue to provide support to 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.
- Continue to 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.
- Continue to provide support to packaging and transportation stakeholders outreach grants.
- Continue to provide rapid response from technical experts or “External/Internal” review teams to address emerging, imminent technical issues impeding site cleanup and closure.
- Continue to provide technical solution projects designed to reduce near-term technical risks and technical assistance to include site troubleshooting, consulting, scientific or technical problem solving.
- Continue to perform analysis for long-term elemental mercury management and storage facility.

Technology Development (PBS:HQ-TD-0100)

Overview

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

The Environmental Management Technology Development and Deployment program matures technologies from concept/basic science through feasibility assessment and technology development (bench scale and scale-up testing and flow-sheet evaluation), then production-level demonstration, and finally to full deployment. The program provides key investments in mid- and long-range research and development projects focused on developing new cleanup methods where none previously existed, and where improvements would result in reducing the cost, and accelerating the schedule of high-priority cleanup issues. The program addresses issues related to: (1) tank waste, (2) soil and groundwater remediation, (3) nuclear materials management and disposition, and (4) deactivation and decommissioning of contaminated excess facilities, including nuclear reactors and chemical separation plants.

Within the FY 2016 Budget Request, the Technology Development and Deployment program provides \$2,000,000 to the Departmental crosscut for Subsurface Engineering. The crosscut funding supports plans for a deep borehole field test through the use of test platforms for technologies or methodologies and infrastructure development, led by the Department's Office of Nuclear Energy. It also supports Office of Environmental Management investigation of potential candidate wastes and waste forms suitable for borehole disposal.

Tank Waste

Tank Waste develops technologies to safely retrieve, stabilize, and dispose of radioactive tank waste and to close the waste tanks. These technologies will optimize tank waste processing by increasing processing rates and/or efficiencies to reduce life-cycle cost and schedule; removing material from the process flow to reduce life-cycle cost and schedule; accelerating tank waste retrieval and closure; and developing and reducing identified project and safety risks.

Next Generation Waste Processing Technologies – Develop Advanced Separation Technologies, Enhanced Glass Compositions and Alternative Waste Forms for increased waste throughput. Advanced Separation Technologies encompasses the development and deployment of innovative pretreatment separation methods (e.g., next generation solvents, technetium, actinides, phosphate, sulfate, aluminum, sodium, and chromium separations, as well as solids filtration) which cover a range of processing regimes as well as alternative treatment technologies. Enhanced Glass Compositions encompasses development of glass formulations for increased waste loading and melt rates to substantially reduce the volume of glass produced, stored, transported and disposed; thereby, reducing the cost and schedule of tank waste disposition. Alternative Waste Forms included the development of waste forms acceptable for disposal on-site for the pretreated Low Activity Waste, aqueous streams from the Low Activity Waste melter off-gas treatment system, and other secondary liquid waste streams. Waste form development and qualification would include a broad range of Low Activity Waste streams by processes other than vitrification to reduce cost and accelerate schedules. The proposed projects to accomplish these activities include:

- Approaches for Managing Technetium Issues – The purpose of this investment is to develop methods to manage the Technetium-99 in the Low Activity Waste, secondary wastes, and off-gas recycle streams. If the Technetium-99 could be effectively removed from the off-gas stream, the removed Technetium-99 could either be combined with high-level waste feed to the high-level waste melter, vitrified in a small purpose built melter or disposed of off-site which would significantly reduce the cost of vitrifying the high-level tank waste. Activities would also focus on filtration, concentration, and corrosion of radionuclides on processes and equipment.

- Development of in-, at-, or near-tank treatment and separation technologies for possible deployment at the Hanford and Savannah River Sites.

Decrease Waste Processing Technical Risk through Predictive Processes and Science and Engineering – Develop waste processing models to enhance the predictive capability of the waste treatment process to include incorporating cost and uncertainty in lifecycle forecast models. Develop technologies or other improvements to the baseline that either enable timely startup of facilities or accelerate waste processing. Develop predictive models that can be used in process flow development, process operations, process upset avoidance and waste systems optimization. This initiative also develops the data and understanding necessary for an international consensus on the behavior of glass waste form corrosion over geologic time scales in a variety of disposal environments. The proposed projects to accomplish these activities include:

- Long Term Glass Corrosion – The goal of this investment, a joint DOE Office of Environmental Management-Office of Nuclear Energy-Office Science-international study of glass behavior over geologic time scales, is to enhance the understanding of the long-term behavior of glass and to develop a more robust and universal glass performance model. This model will increase our understanding of the behavior of vitrified High-Level Waste forms in deep geological repositories thereby improving public safety.
- Enhanced Understanding of Waste Slurry Stream Characteristics – The goal of this investment is development of improved characterization techniques, ability to predict waste stream properties, investigation and development of novel slurry mixing methods, and real-time monitoring of key properties to significantly improve the process baseline.

Tank Retrieval and Closure – Develop the technical basis for a risk-informed tank closure approach; develop analytical methods and instrumentation to characterize waste composition in situ and develop state-of-the-art environmental and waste modeling. This includes the development of tools to predict the performance of cementitious barriers and waste forms that incorporate and extend the current state of understanding of underlying aging and degradation phenomena that occur in response to diverse environmental exposure conditions. The proposed projects to accomplish these activities include:

- Cementitious Barriers Partnership – The goal of this investment is to develop tools to predict the performance of cementitious barriers that incorporate the underlying degradation phenomenon with diverse environmental exposures. This will reduce conservatism in DOE’s tank waste treatment and closure activities thereby significantly reducing cost while enhancing public safety.
- Cost-Effective Characterization Approaches – Develop strategies and technologies to understand, optimize scale and accelerate tank waste characterization enabling waste processing and tank closure schedules to be accelerated and costs reduced.
- Tailored Tank Cleaning Processes – Develop targeted cleaning methods focusing on longer-lived radionuclides of interest, leading to enhanced cleaning of problematic species, a reduction in cleaning time and volume of materials used and elimination of conservative assumptions thus enabling tank cleaning and closure to be accelerated and costs reduced.

Soil and Groundwater Remediation

Soil and Groundwater Remediation develops technologies and approaches to expedite environmental cleanup at Office of Environmental Management sites. Conventional engineered remedies cannot resolve all of the technical obstacles to achieving remediation and meeting compliance goals in complex contaminated environments. Alternative tools and methods are required. The Soil and Groundwater Remediation program uses strategic, highly leveraged investments to develop, test, and demonstrate innovative technical approaches to remediation that reduce life-cycle cleanup costs and mitigate risks to human health and environmental resources.

Advancements in site characterization, remediation, monitoring, and modeling are essential to improving our understanding of the fate and transport of contaminants, identifying associated ecological and health risks, developing risk-informed remediation endpoints, meeting remediation objectives, and addressing stakeholder concerns. The Soil and Groundwater Remediation program is making significant progress in all of these areas. For example, its Advanced Simulation Capability for Environmental Management initiative has developed a state-of-the-art tool and framework to simulate and predict the behavior of complex, contaminated subsurface systems; to visualize dynamic environments intuitively; and to translate evolving knowledge of site and contaminant behavior into cost-effective, risk-informed remediation and disposal solutions. Advanced Simulation Capability for Environmental Management will support faster transitioning of active remediation approaches to monitored natural attenuation, potentially saving billions of dollars in life-cycle costs. A second endeavor, the Attenuation-Based Remedies Applied Field Research Initiative, addresses economic and technical challenges associated with remediation and long-term monitoring of radionuclides and inorganic contaminants. Ongoing work is elucidating the biogeochemistry and long-term stability of immobilized metals and radionuclides in aquifers, and in conjunction with Advanced Simulation Capability for Environmental Management it is also improving the defensibility of modeling long-term contaminant sequestration and associated risks and uncertainties. A third effort, the Deep Vadose Zone Applied Field Research Initiative, focuses on similar concerns in the thick unsaturated region above the water table in arid environments. Here, excavation of contaminants is impractical or too costly, as are typical borehole-based approaches to subsurface characterization and monitoring. New methods for less-invasively accessing, characterizing, and treating contaminants in the deep vadose zone will directly reduce life-cycle costs and provide rich data sources for remediation performance assessments through Advanced Simulation Capability for Environmental Management. Finally, the Remediation of Mercury and Industrial Contaminants Applied Field Research Initiative is focused on developing advanced technologies and approaches for characterizing, remediating, monitoring, and modeling mercury. Mercury's behavior in the environment remains poorly understood and is complicated by its unique physical and biogeochemical characteristics. For example, it is able to bioaccumulate and increase in toxicity in aquatic ecosystems. Applied research and technology development in this area is intensively focused on developing in situ treatments for mercury contamination and new approaches for rapid characterization and treatment of debris and other wastes.

Activities proposed for FY 2016 are described as follows:

- Advanced Simulation Capability for Environmental Management is an integrated modeling and analysis framework that improves current capabilities in environmental simulation and prediction, data management and visualization, and uncertainty analysis. It also facilitates performance assessments, regulatory reviews, and improved communication of modeling results. Advanced Simulation Capability for Environmental Management's modular design permits the use of detailed process models and high-performance computing, helping to reduce reliance on oversimplification and conservative assumptions. A version of Advanced Simulation Capability for Environmental Management was made available to selected users in FY 2014. Continued development through FY 2016 will prepare the code for use by EM sites and other end users. Work will include adding capabilities in data management, visualization, model setup, statistical analysis, and post-simulation analysis including risk analysis, decision support, uncertainty analysis, and parameter estimation.
- The Attenuation-Based Remedies Applied Field Research Initiative focuses on long-term stabilization of metal and long-lived radionuclide contaminants in aquifers, which is paramount for in situ remediation but often reversible and dependent on contaminants' chemical and physical properties, subsurface mineralogy, and geochemical gradients. Remediation approaches will be tested that combine natural attenuation mechanisms with engineered remedies for long-term stabilization without continuous operations. Additionally, a new paradigm for long-term monitoring is being developed that incorporates leading indicators of plume instability, such as boundary conditions, master geochemical variables, and contaminant surrogates that are easier and less costly to monitor. Guidance will be developed for using new characterization strategies and tools to parameterize predictive modeling. Remote sensing will be explored for support of long-term monitoring, and a pilot demonstration incorporating boundary conditions and indicative sensors for decommissioning into long-term monitoring will be completed.
- The Deep Vadose Zone Applied Field Research Initiative will develop a template for evaluating monitored and enhanced natural attenuation in the Central Plateau area at Hanford, WA. It will also provide a foundation for developing remediation approaches for comingled contaminant plumes. Finally, it will work with

Advanced Simulation Capability for Environmental Management to develop robust conceptual and numerical vadose zone and groundwater models of the Central Plateau for the Hanford Site's graded approach to modeling in site assessments. During FY 2016, Advanced Simulation Capability for Environmental Management transport code advances will enable additional scenarios and complexity at Hanford and other DOE sites to be simulated and analyzed.

- The Remediation of Mercury and Industrial Contaminants Applied Field Research Initiative has successfully developed new methods for noninvasively identifying mercury source zones and improved conceptual models of mercury flux at DOE's Oak Ridge Reservation. Work in FY 2016 will focus on in-situ stabilization processes for mercury-contaminated soil and ex situ characterization and treatment of debris expected from deactivation and decommissioning activities. Modules for surface water and mercury biogeochemistry modeling will be developed for use with Advanced Simulation Capability for Environmental Management, enabling the risks associated with various remediation scenarios to be determined and helping to optimize the Oak Ridge site's mercury remediation strategy.

Nuclear Materials Management and Disposition

Nuclear Materials Management and Disposition develops technologies to support the cleanup mission in the management and disposition of nuclear material, spent nuclear fuel and other challenging materials. Recent technology development activity has focused on ensuring safe, extended storage of the Department's spent nuclear fuel. One project supporting this effort is:

- Aging Management Program for DOE Spent Nuclear Fuel – Technology development to assure safe extended storage of the Department's spent nuclear fuel was begun in FY 2012 to close some of the technology gaps for long-term spent nuclear fuel storage. The Aging Management Research and Development Program focused on two gaps: early detection of structural degradation, and long term materials monitoring. The Aging Management task has already achieved the development and demonstration of remote monitoring technology. The benefits derived have gone beyond the original work scope to demonstrate a remote monitoring technology to verify safe extended storage of spent nuclear fuel. Results from the deployment of remote inspection technologies have been used to support Nuclear Regulatory Commission storage license renewals and demonstrate compliance with Nuclear Regulatory Commission regulations.

Deactivation and Decommissioning

The Deactivation and Decommissioning program supports the identification, development and timely deployment of adaptive and transformational technologies needed for the safe closure of nuclear, radiological, and industrial DOE facilities. Technology alternatives, technical assistance, and applied research activities within the Deactivation and Decommissioning program are selected and prioritized based on the leveraging of resources and on the potential to meet the major safety and cost goals. The program develops innovative characterization technologies for high-radiation areas, low-energy radiation surveys, hazardous materials, multiple contaminants of concern and closed systems. It improves technologies and technical approaches to remove equipment and other materials from high hazard areas, including size reduction and packaging for disposal. The program facilitates a better understanding of the interactions between contamination and building materials to provide significant advances in decontamination, immobilization, segregation, and passivating methods and technologies. It develops the next generation remote and robotic platforms and smart tooling systems to reduce the risk to workers and improves the efficiency of decontamination and demolition operations. It also expands basic understanding of solutions for the technical challenges of the permanent isolation of contaminants fill materials with a reduced environmental impact, embedded sensors, and network systems for improved long term monitoring and performance modeling. The projects supporting this effort include:

- Adaptive and Transformational Deactivation & Decommissioning Technologies – Develop and deploy adaptive and transformational deactivation and decommissioning technologies needed for safe closure of nuclear, radiological, and industrial DOE facilities. Develop innovative characterization technologies for high-radiation areas, low-energy radiation surveys, hazardous materials, multiple contaminants of concern and closed systems. This effort will include the development of capability for a long-term monitoring systems that would be operated collaboratively with the EM Field Offices to determine the effectiveness of meeting long-term compliance goals and develop innovative technologies needed to comply with some of the Defense Nuclear Facility Safety Board recommendations for facilities such as 235-F at DOE's Savannah River Site. Eventual application will be for complex-wide efficient and improved Deactivation & Decommissioning technology alternatives, technical assistance, and applied research activities to meet the major safety and cost goals.

- Robotics and Smart Tooling Systems – Continue development of robotics and smart tooling systems that are needed to facilitate characterization, equipment removal, and dismantlement under complex, unsafe or inaccessible conditions for human entry. This initiative focuses on development of next generation remote and robotic platforms and smart tooling systems to improve the efficiency of decontamination and demolition efforts. It will develop: modular platforms that can be rapidly assembled into a task-specific configuration; anthropomorphic mesofluidic end effectors that can interface with tools and the environment like human hands; and smart tooling systems that can adapt to a variety of Deactivation & Decommissioning tasks too difficult or dangerous for humans. This work will be coordinated with sites’ compliance efforts, and will include robotics and smart tooling systems to aid in meeting risk goals by use of innovative technologies developed by the program.
- Reliable Sensors and Remote Network Monitoring Systems – Develop, test and conduct a pilot project, installing reliable sensors and remote network systems for long-term monitoring of containment release and movement from permanently entombed Deactivation & Decommissioning facilities. The project will further demonstrate the feasibility of embedded sensor systems to operate and monitor key parameters, notably: temperature, moisture movement, and micro-cracking in and in-situ decommissioning facility. Results from this project will effectively achieve end-state requirements for facility closures. It will result in significant cost savings, yet be equally or more protective of human health and the environment. The successful end result from In-Situ Decommissioning will reduce the need for additional landfill space. In addition, it will contribute to meeting EM’s sustainability goals by reducing carbon emissions by decreasing transportation requirements.

Technology Development (PBS: HQ-TD-0100)

Activities and Explanation of Changes

FY 2015 Enacted	FY 2016 Request	Explanation of Changes FY 2016 vs FY 2015
\$14,000	\$14,510	+\$510
<u>Tank Waste</u> <ul style="list-style-type: none"> • Provide the technical basis, evaluate and recommend cost and environmentally acceptable strategies and technologies to manage Technetium-99, including removal of Technetium-99 from off-gas recycle processing streams. • Demonstrate performance of alternate waste forms, support the Cementitious Barriers Partnership and long-term glass studies, and develop improved capabilities to optimize slurry mixing and transport waste loading including investigation and development of novel mixing methods. • Continue development of strategies and technologies to understand, optimize scale and 	<u>Tank Waste</u> <ul style="list-style-type: none"> • Develop the technical basis to identify, evaluate, and recommend cost-effective and environmentally-acceptable strategies and technologies to characterize, mitigate, and manage Technetium-99 in tank waste, including removal of Technetium-99 processing recycle streams. • Develop predictive tools to predict and demonstrate the performance of alternate waste forms, support the Cementitious Barrier’s Partnership, continue long-term glass studies, and develop improved capabilities such as computational fluid dynamic tools to optimize slurry mixing and transport waste loading 	<ul style="list-style-type: none"> • Increase reflects that within the technology development request, \$2,000,000 in FY 2016 will support the deep borehole field test.

accelerate tank waste characterization and continue development of targeted cleaning methods thus enabling waste processing and tank closure schedules to be accelerated and costs reduced.

- Develop near-source tank separations, treatment and removal technologies for radionuclides of interest for possible development at the Hanford and Savannah River Sites.

Nuclear Waste Management and Disposition

- Build on previous aging management efforts to monitor safe storage of Spent Nuclear Fuel. An example of a potential application is the integration of the remote inspection camera with the corrosion monitoring module to monitor cask materials.

Soil and Groundwater Remediation

- Enhance Uncertainty Quantification, Parameter Estimation, and Sensitivity Analysis toolsets of the Advanced Simulation Capability for Environmental Management user released toolset.
- Support the utilization of Advanced Simulation Capability for Environmental Management. Initially Hanford, Savannah River, and the Nevada National Security Site will be targeted.
- Provide the scientific foundation for the advanced modeling, characterization, assessments, and remediation scenarios by the Applied Field Research Initiatives.
- Complete pilot demonstration of a new paradigm for long-term monitoring, Phase I – master geochemical variables.

Deactivation and Decommissioning

- Continue development of next generation remote and robotic platforms and smart tooling systems.
- Conduct a pilot project installing reliable sensors and remote network systems for long-term monitoring of containment release from

including investigation and development of novel mixing methods.

- Pursue technical efforts to develop strategies and technologies to understand, evaluate, optimize scale, and accelerate tank waste characterization and continue development of targeted cleaning methods thus enabling waste processing and tank closure schedules to be accelerated and costs reduced.
- Identify, develop, evaluate, and demonstrate near-source tank separations, treatment and removal technologies for radionuclides of interest for possible development at the Hanford and Savannah River Sites.

Nuclear Waste Management and Disposition

- Build on previous aging management efforts to monitor safe storage of Spent Nuclear Fuel. New Technology will support requirements for NRC license.

Soil and Groundwater Remediation

- Enhance Uncertainty Quantification, Parameter Estimation, and Sensitivity Analysis toolsets of the Advanced Simulation Capability for Environmental Management user released toolset.
- Support the utilization of Advanced Simulation Capability for Environmental Management. Initially Hanford, Savannah River, and the Nevada National Security Site will be targeted.
- Provide the scientific foundation for the advanced modeling, characterization, assessments, and remediation scenarios by the Applied Field Research Initiatives.
- Complete pilot demonstration of a new paradigm for a long-term monitoring, Phase I – master geochemical variables.
- Conduct deep borehole field test.

Deactivation and Decommissioning

- permanently entombed Deactivation and Decommissioning facilities.
- Continue development of various technologies to ensure the safe and cost-effective removal of Plutonium-238 from Savannah River Site's Building 235-F.
 - Develop the prerequisite level of project plans to facilitate and initiate development of next generation remote and robotic platforms and smart tooling systems to improve efficiency of decontamination and demolition operations.
 - Continue development/testing of the GrayQb 3-D Radiation Mapping Device to validate and provide real time intensity and location readouts. Develop and test automated digital non-destructive assay methods optimization resulting in near-real time defensible data.
 - Develop and test advanced coatings and materials to significantly reduce/eliminate radiolysis effects in radiological waste containment bags.
 - Conduct final testing and seek commercialization of incombustible agents and fixatives with delivery systems for remote decontamination operations.
 - Develop, test and conduct a pilot project, installing reliable sensors and remote network systems for long-term monitoring of containment release and movement from permanently entombed D&D facilities.
 - Continue with further application of the ISD Sensor Network at entombed and/or facilities awaiting entombment to establish data to augment the existing compliance monitoring network.
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Uranium Enrichment Decontamination and Decommissioning Fund Uranium/Thorium Reimbursements (PBS: HQ-UR-0100)

Overview

This PBS can be found within the Uranium Environment D&D Fund appropriation.

The Office of Environmental Management implements DOE’s statutory responsibilities pursuant to Title X of the Energy Policy Act of 1992, Public Law 102-486, as amended, and 10 CFR Part 765. This Title X Program includes reimbursements to fourteen active uranium and thorium processing site licensees for that portion of the environmental cleanup costs attributable to nuclear material sold to the federal government during the Cold War Era. Title X authorizes the Department to reimburse eligible costs to licensees.

The intent of Title X is to reimburse eligible costs previously incurred by licensees, and does not relieve licensees of their liability to complete environmental restoration of their former mill sites. Through September 2014, three of the fourteen sites have completed remediation and have transferred their disposal facilities to DOE for long-term stewardship; one of these sites is still eligible for reimbursements. One site, Moab, was transferred to DOE by Public Law 106-398 and is no longer within the Title X program. Ten sites have continuing remediation programs in which one site may complete cleanup in 2015.

Reimbursements to Uranium/Thorium Licensees (PBS: HQ-UR-0100)

Activities and Explanation of Changes

FY 2015 Enacted	FY 2016 Request	Explanation of Changes FY 2016 vs FY 2015
\$10,000	\$32,959	+\$22,959
<ul style="list-style-type: none"> Implement statutorily required program to reimburse eligible uranium and thorium licensees for a portion of remediation costs attributable to nuclear material sold to the federal government during the Cold War Era. Provide payment to licensees of approved but unpaid claims from FY 2014 and prior. 	<ul style="list-style-type: none"> Implement statutorily required program to reimburse eligible uranium and thorium licensees for a portion of remediation costs attributable to nuclear material sold to the federal government during the Cold War Era. Provide payment to licensees of approved but unpaid claims from FY 2015 and prior. 	<ul style="list-style-type: none"> Increase supports increased payment of approved claims to the eligible licensees, fulfilling DOE’s statutory responsibilities and reducing the backlog of approved but unpaid claims.

**Title X of the Energy Policy Act of 1992: Uranium/Thorium Reimbursement Program
Status of Payments through Fiscal Year 2014 and Estimated Maximum Program Liability
(\$ Thousands)**

<u>Licensees</u>	Total Payments FY 1994- FY 2014 ^d	Approved but Unpaid Claim Balances After FY 2014 Payments	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	1,279	1	813
Atlantic Richfield Company ^a	32,306	0	0
Atlas Corporation/Moab Mill Reclamation Trust ^a	9,694	0	0
Cotter Corporation	3,100	311	3,480
Dawn Mining Company	10,352	1,282	8,751
Homestake Mining Company	54,005	8,246	88,179
Pathfinder Mines Corporation	10,782	8	291
Petrotomics Company ^a	2,850	0	0
Rio Algom Mining LLC ^b	41,713	646	6,328
Tennessee Valley Authority	15,990	9,140	9,140
Umetco Minerals Corporation-CO	56,099	19,382	33,591
Umetco Minerals Corporation-WY	20,694	4,365	6,125
Western Nuclear, Incorporated	32,062	391	1,553
Subtotal, Uranium	291,746	43,772	158,251
Thorium			
West Chicago ^c	351,549	27,860	46,653
Subtotal, Thorium	351,549	27,860	46,653
Total, Uranium and Thorium	643,295	71,632	204,904

^a Reimbursements have been completed to the Atlantic Richfield Company, the licensees of the Moab site, and the Petrotomics Company.

^b Formerly Quivira Mining Company.

^c Includes former licensees, Kerr-McGee Chemical Corp. & Tronox, LLC. Effective 2011, the thorium site license was transferred to the West Chicago Environmental Response Trust. The remaining program liability for the thorium site is the total of the remaining reimbursement authority allowed under Title X plus the unpaid claim balance.

^d Since there was no FY 2014 funding for the Title X Program, the “Total Payments FY 1994-FY2014” amounts remain the same as the prior year.

Strategic Plan and Performance Measures

In accordance with the GPRA Modernization Act of 2010, the Department sets targets for, and tracks progress toward, achieving performance goals for each program. For more information, refer to the Department FY 2014 Annual Performance Report.

	FY 2014	FY 2015	FY 2016
Performance Goal (Measure)	Liquid Waste in Inventory eliminated (Thousands of Gallons)		
Target	7,343	7,592	9,492
Result	6,592/Not Met	Not applicable	Not applicable
Endpoint Target	This metric has a life cycle estimate of 90,814 thousand gallons.		
Performance Goal (Measure)	Liquid Waste Tanks closed (Number of Tanks)		
Target	13	15	15
Result	13/Met	Not applicable	Not applicable
Endpoint Target	This metric has a life cycle estimate of 239 tanks.		
Performance Goal (Measure)	High-Level Waste packaged for final disposition (Number of Containers)		
Target	4,153	4,405	4,680
Result	4,154/Met	Not applicable	Not applicable
Endpoint Target	This metric has a life cycle estimate of 24,054 containers.		
Performance Goal (Measure)	Plutonium Metal or Oxide packaged for long-term storage (Number of Containers)		
Target	Measure Completed		
Environmental Management/ Corporate Metrics	430		FY 2016 Congressional Budget

Result	Measure Completed		
Endpoint Target	This metric has a life cycle of 5,089 containers and was completed in FY 2005.		

Performance Goal (Measure)	Enriched Uranium packaged for disposition (Number of Containers)		
Target	8,016	8,016	8,016
Result	8,016/Met	Not applicable	Not applicable
Endpoint Target	This metric has a life cycle estimate of 8,603 containers.		

Performance Goal (Measure)	Plutonium or Uranium Residues packaged for disposition (Kilograms of Bulk)		
Target	Measure Completed		
Result	Measure Completed		
Endpoint Target	This metric has a life cycle of 107,828 kilograms and was completed in FY 2007.		

Performance Goal (Measure)	Depleted and Other Uranium packaged for disposition (Metric Tons)		
Target	68,730	93,624	125,124
Result	68,624/Not Met	Not applicable	Not applicable
Endpoint Target	This metric has a life cycle estimate of 737,408 metric tons.		

Performance Goal (Measure)	Material Access Areas eliminated (Number of Material Access Areas)		
Target	30	30	34
Result	30/Met	Not applicable	Not applicable
Endpoint Target	This metric has a life cycle estimate of 35 Material Access Areas eliminated.		

Performance Goal (Measure)	Spent Nuclear Fuel packaged for final disposition (Metric Tons of Heavy Metal)		
Environmental Management/ Corporate Metrics	431		

Target	2,128	2,130	2,130
Result	2,130/Met	Not applicable	Not applicable
Endpoint Target	This metric has a life cycle estimate of 2,451 metric tons of heavy metal.		

Performance Goal (Measure)	Transuranic Waste Dispositioned (Cubic meters) - Total		
Target	102,591	Not Applicable [Note]	Not Applicable [Note]
Result	99,179/Not Met	Not applicable	Not applicable
Endpoint Target	This metric has a life cycle estimate of 148,526 cubic meters.		
	[Note] Due to the suspension of WIPP operations and the ongoing recovery efforts, targets for the corporate performance metric, "Transuranic Waste Dispositioned," cannot be provided at this time. Efforts continue at TRU sites to process and characterize transuranic waste activities. These activities will result in low and mixed low level waste that will be disposed; however, transuranic waste will remain at these sites in storage pending the resumption of WIPP operations. Updated performance metric targets will be reported in the future.		

Performance Goal (Measure)	Transuranic Waste Dispositioned (Cubic meters) - Remote Handled		
Target	479	Not Applicable [Note]	Not Applicable [Note]
Result	323/Not Met	Not applicable	Not applicable
Endpoint Target	This metric has a life cycle estimate of 7,289 cubic meters.		
	[Note] Due to the suspension of WIPP operations and the ongoing recovery efforts, targets for the corporate performance metric, "Transuranic Waste Dispositioned," cannot be provided at this time. Efforts continue at TRU sites to process and characterize transuranic waste activities. These activities will result in low and mixed low level waste that will be disposed; however, transuranic waste will remain at these sites in storage pending the resumption of WIPP operations. Updated performance metric targets will be reported in the future.		

Performance Goal (Measure)	Transuranic Waste Dispositioned (Cubic meters) - Contact Handled		
Target	102,112	Not Applicable [Note]	Not Applicable [Note]
Result	98,856/Not Met	Not applicable	Not applicable
Endpoint Target	This metric has a life cycle estimate of 141,237 cubic meters.		
	[Note] Due to the suspension of WIPP operations and the ongoing recovery efforts, targets for the corporate performance metric, "Transuranic		

Waste Dispositioned," cannot be provided at this time. Efforts continue at TRU sites to process and characterize transuranic waste activities. These activities will result in low and mixed low level waste that will be disposed; however, transuranic waste will remain at these sites in storage pending the resumption of WIPP operations. Updated performance metric targets will be reported in the future.

Performance Goal (Measure)	Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed (Cubic meters)		
Target	1,298,854	1,305,096	1,314,398
Result	1,292,571/Not Met	Not applicable	Not applicable
Endpoint Target	This metric has a life cycle estimate of 1,573,667 cubic meters.		

Performance Goal (Measure)	Nuclear Facility Completions (Number of Facilities)		
Target	138	153	164
Result	146/Met	Not applicable	Not applicable
Endpoint Target	This metric has a life cycle estimate of 487 facilities.		

Performance Goal (Measure)	Radioactive Facility Completions (Number of Facilities)		
Target	561	563	593
Result	561/Met	Not applicable	Not applicable
Endpoint Target	This metric has a life cycle estimate of 960 facilities.		

Performance Goal (Measure)	Industrial Facility Completions (Number of Facilities)		
Target	2,070	2,107	2,184
Result	2,095/Met	Not applicable	Not applicable
Endpoint Target	This metric has a life cycle estimate of 4,107 facilities.		

Performance Goal	Remediation Complete (Number of Release Sites)		
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(Measure)				
Target		8,035	8,201	9,312
Result		7,945/Not Met	Not applicable	Not applicable
Endpoint Target	This metric has a life cycle estimate of 10,992 release sites.			

Performance Goal (Measure)	Geographic Sites Eliminated (Number of Geographic Sites)			
Target		91	91	91
Result		91/Met	Not applicable	Not applicable
Endpoint Target	The EM program has a life cycle estimate for this metric of 107 geographic sites.			

Program Direction

Overview

Program Direction provides for the Federal workforce responsible for the overall direction and administrative support of the Office of Environmental Management (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) requiring 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 supporting EM activities for the Department of Energy (DOE).

Highlights of the FY 2016 Budget Request

The Department of Energy has made significant progress over the last five years in improving its overall project management, and in 2013 the Government Accountability Office narrowed its High-Risk list focus for the Department to the Office of Environmental Management's and the National Nuclear Security Administration's projects with total costs of more than \$750 million. To address these issues and to enhance the probability of project execution success, the Secretary established a special working group in August 2013 to analyze factors that contribute to the success or failure of DOE projects and recommend changes to improve project performance. This group's in-depth analysis culminated in the *Improving Project Management* report¹, which provides valuable case studies and recommendations regarding project ownership, independent oversight, funding, front-end planning, and culture from experienced project management leaders. In response to the report, on December 1, 2014, the Secretary directed key actions for improving the Department's management of projects:

- Strengthening the Energy Systems Acquisition Advisory Board
- Establishing a Project Management Risk Committee
- Improving the Lines of Responsibility and the Peer Review Process

Regarding lines of responsibility and peer review, the Secretary directed each Under Secretary to establish its own project assessment office that does not have line responsibility for project execution. Beginning in FY 2016, the Department will transfer the functions of project assessment from EM to the Office of Management and Administration (MA), coincident with the establishment of the new Project Assessment office reporting to the Under Secretary for Management and Performance. In addition to the previous project management functions that occurred within MA, this new office will now also provide independent oversight and assessments of EM construction and capital asset projects greater than \$100 million, including all activities involved with cost, schedule, technical and management status review, as well as performance progress of the projects. With this transfer of function, EM provides a one-time funds transfer of \$3,000,000 and 10 FTEs to MA's Program Direction budget in FY 2016. This is reflected in both EM and MA's FY 2016 funding request and supports salary and benefits, travel, support services, and other related expenses for those 10 FTEs.

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<http://www.energy.gov/sites/prod/files/2014/12/f19/Project%20Mgt%20Working%20Group%20Report%20Final%20final.pdf>

To address the contract administration and project management issues raised in this report, EM continues to actively hire contract, financial, project management, safety, and quality assurance specialists across the complex.

Although EM has made progress in hiring these critical positions at EM's field offices including Idaho, Office of River Protection, Savannah River, Portsmouth and Paducah, Carlsbad, and the Consolidated Business Center, the attrition rate of employees is offsetting the FTE usage. EM has seen an increase of retirements over the past several years as EM's current attrition rate has increased to 7 percent and not expected to decrease as the average age of the EM employee is 52 years of age. EM is participating in the Department's Recent Graduates Program, and plans to hire 20 recent graduates in a variety of disciplines to help develop the next generation of experts and leaders capable of carrying on EM's mission as the current aging workforce continues to retire. Of the 20 recent graduate positions, EM has hired 9 as of December 2014 and the remaining 11 will be onboard by Spring 2015.

Like DOE generally, the vast majority of EM's budget is used to fund contracts for a broad range of services, including physical cleanup work, waste treatment and transportation, site and laboratory management and operations, and security, among many others. EM's ability to not only award, but also effectively oversee the hundreds of contracts it issues each year depends on the size, experience, skill, and expertise of its acquisition workforce. EM's current acquisition workforce needs to be augmented to maximize value to the U.S. Government, to support robust pre-award planning and post-award administration and avoid post-award problems that result in work delays and cost increases. This initiative will hire 28 new contracting specialists, who will be located at 9 sites with the greatest need for more contracting expertise. Of the 28 contracting positions, EM has hired 21 as of December 2014 and the remaining 7 will be onboard by Spring 2015.

EM's ability to negotiate contracts that provide the best value for the government depends in large part on EM's ability to determine independently the fair value of the services being contracted. This task falls to EM's cost estimators, who must have highly specialized expertise and experience in a range of technical and professional areas, including many different types of engineering, nuclear-facility decontamination and decommissioning, groundwater remediation, information technology, and security services, among others. Cost estimators also play a vital role in providing EM's budgeting and planning processes with the cost forecasts needed to anticipate future resource needs. This initiative will add 19 additional cost estimators to EM's human capital. They will be located at the sites with mission critical contracting responsibilities. As part of this initiative, EM's Consolidated Business Center will create and oversee a new Cost Estimating and Analysis Program, to develop and disseminate complex-wide principles, standards, and professional-development plans, as well as ensure an active forum for exchanging best practices and other lessons learned. In addition, EM will plan and execute the contract specialists initiative and cost estimators initiative jointly, to ensure a coordinated and holistic approach to developing these critical human-capital resources. EM has hired 6 of the 19 cost estimator positions as of December 2014 and the remaining 13 will be onboard by Spring 2015.

Funding (\$K)
Program Direction Summary

	FY 2014 Enacted	FY 2014 Current	FY 2015 Enacted	FY 2016 Request	FY 2016 vs FY 2015
Carlsbad					
Salaries and Benefits	7,498	8,151	7,656	11,448	+3,792
Travel	306	843	306	330	+24
Other Related Expenses	1,149	988	561	546	-15
Total, Carlsbad	8,953	9,982	8,523	12,324	+3,801
Idaho					
Salaries and Benefits	5,928	6,407	6,053	7,131	+1,078
Travel	140	147	140	170	+30
Support Services	240	0	107	94	-13
Other Related Expenses	969	1,008	501	487	-14
Total, Idaho	7,277	7,562	6,801	7,882	+1,081
Oak Ridge					
Salaries and Benefits	10,084	11,388	10,293	11,859	+1,566
Travel	125	126	125	157	+32
Support Services	1,383	455	690	606	-84
Other Related Expenses	3,418	3,490	1,655	1,609	-46
Total, Oak Ridge	15,010	15,459	12,763	14,231	+1,468
Portsmouth/Paducah Project Office					
Salaries and Benefits	8,241	9,071	9,311	10,707	+1,396
Travel	274	345	300	274	-26
Support Services	1,067	1,380	525	461	-64
Other Related Expenses	1,276	1,233	713	633	-80
Total, Portsmouth/Paducah Project Office	10,858	12,029	10,849	12,075	+1,226
Richland					
Salaries and Benefits	35,604	37,311	36,340	38,407	+2,067
Travel	385	377	385	459	+74
Support Services	1,285	1,595	441	386	-55
Other Related Expenses	8,416	5,819	4,341	4,221	-120
Total, Richland	45,690	45,102	41,507	43,473	+1,966
River Protection					
Salaries and Benefits	20,518	22,382	24,581	25,717	+1,136
Travel	450	367	518	543	+25
Support Services	1,757	2,123	720	631	-89
Other Related Expenses	4,155	3,008	2,528	2,131	-397
Total, River Protection	26,880	27,880	28,347	29,022	+675
Savannah River					
Salaries and Benefits	38,589	41,083	42,020	43,097	+1,077
Travel	470	491	497	574	+77
Support Services	1,849	3,394	794	697	-97
Other Related Expenses	4,264	2,288	2,399	2,210	-189
Total, Savannah River	45,172	47,256	45,710	46,578	+868

	FY 2014 Enacted	FY 2014 Current	FY 2015 Enacted	FY 2016 Request	FY 2016 vs FY 2015
Small Sites					
Salaries and Benefits	4,501	4,569	4,597	5,293	+696
Travel	290	166	290	245	-45
Support Services	1,306	750	696	611	-85
Other Related Expenses	1,217	697	581	565	-16
Total, Small Sites	7,314	6,182	6,164	6,714	+550
Nevada Site Office					
Salaries and Benefits	2,744	2,931	2,800	2,766	-34
Travel	55	82	55	71	+16
Support Services	376	76	226	198	-28
Other Related Expenses	84	3	46	45	-1
Total, Nevada Site Office	3,259	3,092	3,127	3,080	-47
Los Alamos Site Office					
Salaries and Benefits	3,041	2,785	3,104	3,130	+26
Travel	125	101	125	144	+19
Support Services	689	173	413	380	-33
Other Related Expenses	325	115	160	155	-5
Total, Los Alamos Site Office	4,180	3,174	3,802	3,809	+7
Field					
Salaries and Benefits	136,748	146,078	146,755	159,555	+12,800
Travel	2,620	3,045	2,741	2,967	+226
Support Services	9,952	9,946	4,612	4,064	-548
Other Related Expenses	25,273	18,649	13,485	12,602	-883
Total, Field	174,593	177,718	167,593	179,188	+11,595
Headquarters Operations					
Salaries and Benefits	53,204	57,048	54,311	54,209	-102
Travel	2,165	2,430	2,165	2,122	-43
Support Services	21,921	18,563	10,003	5,075	-4,928
Other Related Expenses	18,648	15,530	9,869	12,050	+2,181
Total, Headquarters Operations	95,938	93,571	76,348	73,456	-2,892
Consolidated Business Center					
Salaries and Benefits	20,751	21,771	30,984	24,106	-6,878
Travel	680	1,007	1,290	927	-363
Support Services	2,352	2,662	1,185	1,158	-27
Other Related Expenses	5,686	3,271	3,384	3,116	-268
Total, Consolidated Business Center	29,469	28,711	36,843	29,307	-7,536
Environmental Management					
Salaries and Benefits	210,703	224,897	232,050	237,870	+5,820
Travel	5,465	6,482	6,196	6,016	-180
Support Services	34,225	31,171	15,800	10,297	-5,503
Other Related Expenses	49,607	37,450	26,738	27,768	+1,030
Total, Environmental Management	300,000	300,000	280,784	281,951	+1,167
Full Time Equivalents	1,376	1,376	1,500	1,490	-10

Support Services and Other Related Expenses

	FY 2014 Enacted	FY 2014 Current	FY 2015 Request	FY 2016 Request	FY 2016 Request vs FY 2015 Request
Support Services					
Technical Support					
Feasibility of Design Considerations	4,046	3,685	1,868	1,217	-651
System Definition	89	81	41	27	-14
Economic and Environmental Analysis	6,073	5,531	2,803	1,827	-976
Test and Evaluation Studies	80	73	37	24	-13
Surveys or Reviews of Technical Operations	9,413	8,573	4,346	2,832	-1,513
Total, Technical Support	19,701	17,943	9,095	5,927	-3,168
Management Support					
Directives Management Studies	2,056	1,873	950	619	-330
Automatic Data Processing	1,958	1,784	904	589	-315
Training and Education	210	192	97	63	-34
Analysis of DOE Management Processes	761	693	351	229	-122
Reports and Analyses Management and General Administrative Support	9,539	8,686	4,403	2,870	-1,533
Total, Management Support	14,524	13,228	6,705	4,370	-2,335
Total, Support Services	34,225	31,171	15,800	10,297	-5,503
Other Related Expenses					
Rent to GSA	9,471	6,229	3,279	0	-3,279
Rent to Others	1,345	885	466	0	-466
Communication, Utilities, Misc.	8,524	5,572	2,859	0	-2,859
Printing and Reproduction	176	150	152	0	-152
Other Services	9,085	6,077	2,441	0	-2,441
Training	1,314	762	1,159	0	-1,159
Purchases from Gov. Accounts	197	130	68	0	-68

Operation and Maintenance of Equipment	1,978	1,301	685	0	-685
Supplies and Materials	211	139	73	0	-73
Equipment	3,215	2,114	1,113	0	-1,113
Working Capital Fund	14,091	14,091	14,443	27,768	+13,325
Total, Other Related Expenses	49,607	37,450	26,738	27,768	+1,030

Program Direction (PBS: HQ-PD-0100)

Activities and Explanation of Changes

FY 2015 Enacted	FY 2016 Request	Explanation of Changes FY 2016 vs FY 2015
\$280,784	\$281,951	+\$1,167
Salaries and Benefits	\$232,050	\$237,870
Supports Federal salaries and benefits for EM's planned FTE level of 1,500.	Supports Federal salaries and benefits for EM's planned FTE level of 1,490.	Reflects Federal pay raise and increased benefits contributions for EM's 1,490 FTEs.
Travel	\$6,196	\$6,016
Maintain a reduced travel level in compliance with Executive Order 13589. Additionally, EM will continue to scrutinize conference sponsorship as well as overall conference attendance to further influence reductions in travel costs.	Maintain a reduced travel level in compliance with Executive Order 13589. Additionally, EM will continue to scrutinize conference sponsorship as well as overall conference attendance to further influence reductions in travel costs.	No significant change.
Support Services	\$15,800	\$10,297
Support for services in the areas of administrative, procurement and human capital support; technical oversight support; IT to support new systems; operation and maintenance of equipment; and operation and maintenance of facilities occupied by	Support for services in the areas of administrative, procurement and human capital support; technical oversight support; IT to support new systems; operation and maintenance of equipment; and operation and maintenance of facilities occupied by	EM will use uncosted carryover for administrative, technical, and IT-related support services. EM is shifting activities from contractor performance to execution by Federal staff.

EM staff.

EM staff.

Other Related Expenses	\$26,738	\$27,768	+\$1,030
EM will fund items such as the field rent, utilities, communications, building and ground maintenance, site-wide health services, and headquarters Working Capital Fund. EM will continue efficiencies for the reintegration of Federal staff to Government-owned facilities.		EM will fund the Headquarters Working Capital Fund minus the CyberOne business line. EM will continue efficiencies for the reintegration of Federal staff to Government-owned facilities.	Increase reflects absorption of the Working Capital Fund (other than CyberOne business line). Absorbing the Working Capital Fund within Program Direction is offset partially by the reduction to support services; other reductions will include funding for field rent and communications/utilities, training, supplies, and IT equipment.

UE D&D Fund Deposit

Overview

The Defense Environmental Cleanup, Federal Contribution to the Uranium Enrichment Decontamination and Decommissioning Fund, provides the Federal Government contribution to the Fund, as required by the Energy Policy Act of 1992 (The Act). Prior to October 24, 2007, the Act authorized annual fund contributions which came from both a special assessment on domestic utilities and annual Congressional appropriations.

The Administration will submit legislation to reauthorize section 1802 of the Atomic Energy Act of 1954 (42 U.S.C. 2297g-1) to reinstate a special assessment on domestic utilities, as well as allow for additional Federal deposits into the Fund. The amount collected from industry for a fiscal year would total no more than \$204,000,000 (to be annually adjusted for inflation using the Consumer Price Index for all-urban consumers published by the Department of Labor), and annual deposits from both industry and the Federal government would total no more than \$676,000,000 (also adjusted for inflation), with the remainder above the industry assessment to come from appropriated funds from the Defense Environmental Cleanup account. This proposal reflects the ongoing need to decontaminate, decommission, and remediate the uranium processing facilities, and the shared responsibility of both industry and the Federal government for these costs.

Highlights of the FY 2016 Budget Request

This Fund is responsible for maintaining, decontaminating, decommissioning, and remediating uranium processing facilities. This includes the environmental management responsibilities at the nation's three gaseous diffusion plants at Paducah, Kentucky; Portsmouth, Ohio; and Oak Ridge, Tennessee.

As the cleanup and decommissioning at the gaseous diffusion plants progresses, the risk and hazard to human health and the environment is greatly reduced. In addition, as cleanup is completed, the financial resources needed to maintain site infrastructure will be reduced.

UE D&D Fund Deposit Funding

(\$K)

FY 2014 Enacted	FY 2014 Current	FY 2015 Enacted	FY 2016 Request	FY 2016 vs FY 2015
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Defense Environmental Cleanup

Federal Contribution to the Uranium Enrichment D&D Fund

HQ-DD-0100 / Federal Contribution to the Uranium Enrichment D&D Fund

0	0	463,000	471,797	+8,797
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UE D&D Fund Deposit Explanation of Major Changes (\$K)

FY 2016 vs FY 2015

Defense Environmental Cleanup

Federal Contribution to the Uranium Enrichment D&D Fund

HQ-DD-0100 / Federal Contribution to the Uranium Enrichment D&D Fund

- Increase is to align the rate of the Federal government contribution to Uranium Enrichment Decontamination and Decommissioning Fund, as required by the Energy Policy Act of 1992 based on the CPI-U estimate.

+8,797

Total, D&D Fund Deposit

+8,797

Federal Contribution to the Uranium Enrichment D&D Fund (PBS: HQ-DD-0100)

The Energy Policy Act of 1992 created the Uranium Enrichment Decontamination and Decommissioning Fund to pay for the cost of cleanup of the gaseous diffusion facilities located in Oak Ridge, Tennessee; Paducah, Kentucky; and Portsmouth, Ohio. The purpose of this activity is to provide the annual Federal contribution to the Uranium Enrichment Decontamination and Decommissioning Fund to cover the costs of cleanup at the three gaseous diffusion plants.

Federal Contribution to the Uranium Enrichment D&D Fund (PBS: HQ-DD-0100)

Activities and Explanation of Changes

FY 2015 Enacted	FY 2016 Request	Explanation of Changes FY 2016 vs FY 2015
\$463,000	\$471,797	+\$8,797
<ul style="list-style-type: none"> Provide the FY 2015 Federal Government contribution to the Uranium Enrichment Decontamination and Decommissioning Fund, as required by the Energy Policy Act of 1992. 	<ul style="list-style-type: none"> Provide the FY 2016 Federal Government contribution to the Uranium Enrichment Decontamination and Decommissioning Fund, as required by the Energy Policy Act of 1992. 	<ul style="list-style-type: none"> Increase is to align the rate of the Federal government contribution to Uranium Enrichment Decontamination and Decommissioning Fund, as required by the Energy Policy Act of 1992 based on the CPI-U estimate.

**Environmental Management
Facilities Maintenance and Repair**

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

Costs for Direct-Funded Maintenance and Repair

	(\$K)			
	FY 2014 Actual Cost ^a	FY 2014 Planned Cost	FY 2015 Planned Cost	FY 2016 Planned Cost
Carlsbad	13,346	14,301	12,339	12,215
Energy Technology Engineering Center	4,669	238	265	265
Idaho National Laboratory	24,103	22,233	22,700	23,177
Moab	563	474	200	201
Oak Ridge	11,027	9,408	10,973	10,868
Pacific Northwest National Laboratory	0	0	0	0
Paducah	7,696	1,629	2,598	54,629
Portsmouth	26,521	28,635	44,691	29,951
Richland Operations Office	45,643	0	48,150	51,701
Office of River Protection	51,912	61,667	61,891	78,592
Savannah River	139,298	135,122	116,164	106,291
Total, Direct-Funded Maintenance and Repair	324,778	273,707	319,971	367,890

^a FY 2014 Actual Costs are based on 4th quarter data.

Costs for Indirect-Funded Maintenance and Repair

	(\$K)			
	FY 2014 Actual Cost ^a	FY 2014 Planned Cost	FY 2015 Planned Cost	FY 2016 Planned Cost
Carlsbad	0	0	0	0
Energy Technology Engineering Center	0	0	0	0
Idaho National Laboratory	0	0	0	0
Moab	0	0	0	0
Oak Ridge	0	0	0	0
Pacific Northwest National Laboratory	4,859	4,859	4,865	4,921
Paducah	0	0	0	0
Portsmouth	0	0	0	0
Richland Operations Office	0	0	0	0
Office of River Protection	0	0	0	0
Savannah River	13,918	13,918	6,772	5,489
Total, Indirect-Funded Maintenance and Repair	18,777	18,777	11,637	10,410

^a FY 2014 Actual Costs are based on 4th quarter data.

Report on FY 2014 Expenditures for Maintenance and Repair

This report responds to legislative language set forth in Conference Report (H.R. Conf. Rep. No. 108-10) accompanying the Consolidated Appropriations Resolution, 2003 (Public Law 108-7) (pages 886-887), which requests the Department of Energy provide an annual year-end report on maintenance expenditures to the Committees on Appropriations. This report compares the actual maintenance expenditures in FY 2014 to the amount planned for FY 2014, including Congressionally directed changes.

**Environmental Management Research and Development
Research and Development (\$K)**

	FY 2014 Current ^a	FY 2015 Enacted	FY 2016 Request	FY 2016 vs FY 2015
Basic	0	0	0	+0
Applied	7,057	4,620	5,712	+1,092
Development	14,327	9,380	11,598	+2,218
Subtotal, R&D	21,384	14,000	17,310	+3,310
Equipment	0	0	0	+0
Construction	0	0	0	+0
Total, R&D	21,384	14,000	17,310	+3,310

**Environmental Management
Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR)**

	FY 2014 Transferred	FY 2015 Projected	FY 2016 Request	FY 2016 vs FY 2015 Projected
Headquarters	576	462	501	+39
Oak Ridge	131	0	97	+97
	707	462	598	+136

^a Funding reflects the SBIR/STTR amounts transferred to the Office of Science.

Safeguards and Security by Activity (\$K)

	FY 2014 Enacted	FY 2014 Current	FY 2015 Enacted	FY 2016 Request	FY 2016 vs FY 2015
Carlsbad					
Protective Forces	4,073	3,794	3,645	3,173	-472
Physical Security Systems	233	334	209	526	+317
Information Security	269	0	241	0	-241
Security Investigations	0	70	0	63	+63
Program Management	360	283	322	253	-69
Subtotal, Carlsbad	4,935	4,481	4,417	4,015	-402
Cyber Security	42	496	38	845	+807
Total, Carlsbad	4,977	4,977	4,455	4,860	+405
Oak Ridge					
Protective Forces	13,558	13,512	11,814	11,140	-674
Physical Security Systems	1,396	1,314	1,216	1,302	+86
Information Security	345	471	301	467	+166
Personnel Security	1,205	1,039	1,050	1,030	-20
Material Control and Accountability	835	801	728	794	+66
Program Management	627	735	546	729	+183
Subtotal, Oak Ridge	17,966	17,872	15,655	15,462	-193
Cyber Security	834	928	727	1,766	+1,039
Total, Oak Ridge	18,800	18,800	16,382	17,228	+846
Paducah					
Protective Forces	7,991	7,991	4,690	4,882	+192
Physical Security Systems	995	995	584	0	-584
Information Security	1,368	1,368	803	1,415	+612
Personnel Security	373	373	219	0	-219
Material Control and Accountability	377	377	221	0	-221
Program Management	832	832	488	0	-488
Subtotal, Paducah	11,936	11,936	7,005	6,297	-708
Cyber Security	498	498	292	1,919	+1,627
Total, Paducah	12,434	12,434	7,297	8,216	+919
Portsmouth					
Protective Forces	7,015	11,608	4,766	7,600	+2,834
Physical Security Systems	1,212	0	823	0	-823

	FY 2014 Enacted	FY 2014 Current	FY 2015 Enacted	FY 2016 Request	FY 2016 vs FY 2015
Personnel Security	631	180	428	180	-248
Security Investigations	0	412	0	412	+412
Program Management	2,580	300	1,753	300	-1,453
Subtotal, Portsmouth	11,438	12,500	7,770	8,492	+722
Cyber Security	1,062	0	722	0	-722
Total, Portsmouth	12,500	12,500	8,492	8,492	0
Richland					
Protective Forces	42,743	42,743	39,396	33,142	-6,254
Physical Security Systems	7,432	7,432	6,850	11,255	+4,405
Information Security	1,003	1,003	924	1,050	+126
Personnel Security	1,558	1,558	1,436	2,365	+929
Security Investigations	0	0	0	198	+198
Material Control and Accountability	1,355	1,355	1,249	1,637	+388
Program Management	12,298	12,298	11,335	9,743	-1,592
Subtotal, Richland	66,389	66,389	61,190	59,390	-1,800
Cyber Security	2,689	2,689	2,478	8,211	+5,733
Total, Richland	69,078	69,078	63,668	67,601	+3,933
Savannah River					
Protective Forces	83,998	83,456	87,120	84,079	-3,041
Physical Security Systems	14,075	14,256	22,391	16,929	-5,462
Information Security	1,063	1,016	910	1,446	+536
Personnel Security	4,561	4,685	2,975	5,316	+2,341
Security Investigations	458	500	350	500	+150
Material Control and Accountability	2,497	2,448	2,224	2,738	+514
Security Infrastructure/Construction	0	0	10,000	0	-10,000
Program Management	12,204	12,494	10,312	11,630	+1,318
Transportation	329	345	259	1,955	+1,696
Subtotal, Savannah River	119,185	119,200	136,541	124,593	-11,948
Cyber Security	2,011	1,996	1,694	3,752	+2,058
Total, Savannah River	121,196	121,196	138,235	128,345	-9,890
West Valley Demonstration Project					
Protective Forces	1,360	1,421	993	730	-263
Program Management	260	307	190	284	+94
Subtotal, West Valley Demonstration Project	1,620	1,728	1,183	1,014	-169

	FY 2014 Enacted	FY 2014 Current	FY 2015 Enacted	FY 2016 Request	FY 2016 vs FY 2015
Cyber Security	395	287	288	877	+589
Total, West Valley Demonstration Project	2,015	2,015	1,471	1,891	+420
Total, Safeguards and Security	241,000	241,000	240,000	236,633	-3,367

Safeguards and Security (\$K)

	FY 2014 Enacted	FY 2014 Current	FY 2015 Enacted	FY 2016 Request	FY 2016 vs FY 2015
Protective Forces	160,738	164,525	152,424	144,746	-7,678
Physical Security Systems	25,343	24,331	32,073	30,012	-2,061
Information Security	4,048	3,858	3,179	4,378	+1,199
Personnel Security	8,328	7,835	6,108	8,891	+2,783
Security Investigations	458	982	350	1,173	+823
Material Control and Accountability	5,064	4,981	4,422	5,169	+747
Security Infrastructure/Construction	0	0	10,000	0	-10,000
Program Management	29,161	27,249	24,946	22,939	-2,007
Transportation	329	345	259	1,955	+1,696
Subtotal, Safeguards and Security	233,469	234,106	233,761	219,263	-14,498
Cyber Security	7,531	6,894	6,239	17,370	+11,131
Total, Safeguards and Security	241,000	241,000	240,000	236,633	-3,367

Department Of Energy
FY 2016 Congressional Budget
 Funding By Appropriation By Site
 (\$K)

Defense Environmental Cleanup	FY 2014 Current	FY 2015 Enacted	FY 2016 Request
Carlsbad Area Office			
Program Direction			
Carlsbad	9,982	8,523	12,324
Safeguards and Security			
Waste Isolation Pilot Plant	4,977	4,455	4,860
Total, Carlsbad Area Office	14,959	12,978	17,184
Consolidated Business Center			
Program Direction			
Consolidated Business Center	34,893	43,007	36,021
Total, Consolidated Business Center	34,893	43,007	36,021
East Tennessee Technology Park (K25)			
Safeguards and Security			
Oak Ridge Reservation	18,800	16,382	17,228
Total, East Tennessee Technology Park (K25)	18,800	16,382	17,228
Energy Technology Engineering Center			
Oak Ridge Reservation			
Nuclear Facility D & D, ETPP	100	102	108
Total, Energy Technology Engineering Center	100	102	108
Fernald Environmental Management Project			
Closure Sites			
Fernald	800	1,500	1,300
Total, Fernald Environmental Management Project	800	1,500	1,300
Hanford Site			
Hanford Site			
Central Plateau Remediation	512,665	543,511	632,179
River Corridor & Other Cleanup Operations	408,634	377,788	196,957
Total, Hanford Site	921,299	921,299	829,136
Safeguards and Security			
Richland/Hanford Site	69,078	63,668	67,601
Total, Hanford Site	990,377	984,967	896,737
Idaho National Laboratory			
Idaho National Laboratory			
Idaho Community and Regulatory Support	3,700	2,910	3,000
Idaho Clean-up and Waste Disposition	383,300	377,293	357,783
Total, Idaho National Laboratory	387,000	380,203	360,783
Total, Idaho National Laboratory	387,000	380,203	360,783

Department Of Energy
FY 2016 Congressional Budget
 Funding By Appropriation By Site
 (\$K)

	FY 2014 Current	FY 2015 Enacted	FY 2016 Request
Defense Environmental Cleanup			
Idaho Operations Office			
Program Direction			
Idaho	7,562	6,801	7,882
Total, Idaho Operations Office	7,562	6,801	7,882
Lawrence Livermore National Laboratory			
NNSA Sites			
NNSA Sites	1,238	1,128	1,128
Total, Lawrence Livermore National Laboratory	1,238	1,128	1,128
Los Alamos National Laboratory			
NNSA Sites			
NNSA Sites	220,686	182,645	185,231
Los Alamos National Laboratory	0	4,600	0
Total, NNSA Sites	220,686	187,245	185,231
Total, Los Alamos National Laboratory	220,686	187,245	185,231
Miamisburg Site			
Closure Sites			
Miamisburg	285	0	0
Total, Miamisburg Site	285	0	0
Nevada Field Office			
Program Direction			
Nevada	3,092	3,127	3,080
NNSA Sites			
NNSA Sites	15,310	20,435	23,825
Total, Nevada Field Office	18,402	23,562	26,905
Nevada National Security Site			
NNSA Sites			
NNSA Sites	46,587	44,416	38,560
Total, Nevada National Security Site	46,587	44,416	38,560
NNSA Albuquerque Complex			
Program Direction			
Los Alamos	3,174	3,802	3,809
NNSA Sites			
NNSA Sites	4,341	2,593	3,632
Total, NNSA Albuquerque Complex	7,515	6,395	7,441

Department Of Energy
FY 2016 Congressional Budget
 Funding By Appropriation By Site
 (\$K)

	FY 2014 Current	FY 2015 Enacted	FY 2016 Request
Defense Environmental Cleanup			
Oak Ridge National Laboratory			
Oak Ridge Reservation			
Nuclear Facility D & D, ORNL	37,896	38,387	40,850
U233 Disposition Program	45,000	0	26,895
Total, Oak Ridge Reservation	82,896	38,387	67,745
Total, Oak Ridge National Laboratory	82,896	38,387	67,745
Oak Ridge Office			
Oak Ridge Reservation			
Nuclear Facility D & D, Y-12	4,608	9,400	6,800
Clean-up and Disposition	0	4,200	0
Total, Oak Ridge Reservation	4,608	13,600	6,800
Program Direction			
Oak Ridge	15,459	12,763	14,231
Total, Oak Ridge Office	20,067	26,363	21,031
Oak Ridge Reservation			
Oak Ridge Reservation			
Clean-up and Disposition	83,220	131,930	60,500
Total, Oak Ridge Reservation	83,220	131,930	60,500
Oak Ridge Reservation (Off-Site)			
Oak Ridge Reservation			
ORR Community and Regulatory Support	4,365	4,365	4,400
Total, Oak Ridge Reservation (Off-Site)	4,365	4,365	4,400
Office of River Protection			
Office of River Protection			
Tank Farm Activities	520,216	522,000	649,000
Waste Treatment Plant	690,000	667,000	690,000
Total, Office of River Protection	1,210,216	1,189,000	1,339,000
Program Direction			
Office of River Protection	27,880	28,347	29,022
Total, Office of River Protection	1,238,096	1,217,347	1,368,022
Paducah Gaseous Diffusion Plant			
Program Direction			
Paducah/Portsmouth	12,029	10,849	12,075
Safeguards and Security			
Paducah	12,434	7,297	8,216
Total, Paducah Gaseous Diffusion Plant	24,463	18,146	20,291

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	FY 2014 Current	FY 2015 Enacted	FY 2016 Request
Defense Environmental Cleanup			
Portsmouth Gaseous Diffusion Plant			
Safeguards and Security			
Portsmouth	12,500	8,492	8,492
Total, Portsmouth Gaseous Diffusion Plant	12,500	8,492	8,492
Richland Operations Office			
Hanford Site			
Community and Regulatory Support	19,701	19,701	14,701
Office of River Protection			
Tank Farm Activities	0	23,000	75,000
Program Direction			
Richland	45,102	41,507	43,473
Total, Richland Operations Office	64,803	84,208	133,174
Rocky Flats Site			
Closure Sites			
Rocky Flats	3,617	3,389	3,589
Total, Rocky Flats Site	3,617	3,389	3,589
Sandia National Laboratories			
NNSA Sites			
NNSA Sites	2,814	2,801	2,500
Total, Sandia National Laboratories	2,814	2,801	2,500
Savannah River Operations Office			
Savannah River Sites			
Community and Regulatory Support	11,210	11,013	11,249
Program Direction			
Savannah River	47,256	45,710	46,578
Safeguards and Security			
Savannah River Site	121,196	138,235	128,345
Total, Savannah River Operations Office	179,662	194,958	186,172
Savannah River Site			
Savannah River Sites			
Site Risk Management Operations	432,491	397,976	386,652
Radioactive Liquid Tank Waste Stabilization and Disposi	690,533	712,318	810,520
Total, Savannah River Sites	1,123,024	1,110,294	1,197,172
Total, Savannah River Site	1,123,024	1,110,294	1,197,172
Separations Process Research Unit			
NNSA Sites			
NNSA Sites	23,700	0	0
Total, Separations Process Research Unit	23,700	0	0

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Defense Environmental Cleanup	FY 2014 Current	FY 2015 Enacted	FY 2016 Request
Washington Headquarters			
Program Direction			
Headquarters	93,571	76,348	73,456
Program Support			
Program Support	17,979	14,979	14,979
Uranium Enrichment D&D Fund Contribution			
Uranium Enrichment D&D Fund Contribution	0	0	471,797
Technology Development			
Technology Development	17,424	14,000	14,510
Total, Washington Headquarters	128,974	105,327	574,742
Waste Isolation Pilot Plant			
Waste Isolation Pilot Plant			
Operation and Maintenance	216,193	320,000	243,318
Total, Waste Isolation Pilot Plant	216,193	320,000	243,318
West Valley Demonstration Project			
Safeguards and Security			
West Valley	2,015	1,471	1,891
Total, West Valley Demonstration Project	2,015	1,471	1,891
Y-12 Site Office			
Oak Ridge Reservation			
Nuclear Facility D & D, Y-12	35,720	34,666	35,000
OR Technology Development and Deployment	3,960	0	2,800
Total, Oak Ridge Reservation	39,680	34,666	37,800
Total, Y-12 Site Office	39,680	34,666	37,800
Total, Defense Environmental Cleanup	4,999,293	5,010,830	5,527,347

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Non-Defense Environmental Cleanup	FY 2014 Current	FY 2015 Enacted	FY 2016 Request
East Tennessee Technology Park (K25)			
Small Sites			
Oak Ridge – ETPP	0	2,119	0
Total, East Tennessee Technology Park (K25)	0	2,119	0
Energy Technology Engineering Center			
Small Sites			
Small Sites	9,367	8,959	10,459
Total, Energy Technology Engineering Center	9,367	8,959	10,459
Hanford Site			
Fast Flux Test Reactor Facility			
Fast Flux Test Reactor Facility	2,542	2,562	2,562
Total, Hanford Site	2,542	2,562	2,562
Idaho National Laboratory			
Small Sites			
Small Sites	6,593	24,900	5,919
Total, Idaho National Laboratory	6,593	24,900	5,919
Lawrence Berkeley National Laboratory			
Small Sites			
Small Sites	17,786	0	0
Total, Lawrence Berkeley National Laboratory	17,786	0	0
Miamisburg Site			
Small Sites			
Small Sites	0	8,408	0
Southwest Experimental Fast Oxide Reactor	1,000	0	0
Total, Small Sites	1,000	8,408	0
Total, Miamisburg Site	1,000	8,408	0
Moab Site			
Small Sites			
Small Sites	36,478	35,663	37,629
Total, Moab Site	36,478	35,663	37,629
Paducah Gaseous Diffusion Plant			
Gaseous Diffusion Plants			
Gaseous Diffusion Plants	46,861	52,886	52,886
Total, Paducah Gaseous Diffusion Plant	46,861	52,886	52,886

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Non-Defense Environmental Cleanup	FY 2014 Current	FY 2015 Enacted	FY 2016 Request
Portsmouth Gaseous Diffusion Plant			
Gaseous Diffusion Plants			
Gaseous Diffusion Plants	49,361	51,517	51,517
Total, Portsmouth Gaseous Diffusion Plant	49,361	51,517	51,517
West Valley Demonstration Project			
West Valley Demonstration Project			
West Valley Demonstration Project	64,000	58,986	59,213
Total, West Valley Demonstration Project	64,000	58,986	59,213
Total, Non-Defense Environmental Cleanup	233,988	246,000	220,185

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Uranium Enrichment Decon. & Decom. Fund	FY 2014 Current	FY 2015 Enacted	FY 2016 Request
East Tennessee Technology Park (K25)			
Uranium Enrichment D&D Fund			
Pension & comm & Reg Suport Oak Ridge	0	21,693	16,856
Oak Ridge	195,741	167,898	154,235
Total, Uranium Enrichment D&D Fund	195,741	189,591	171,091
Total, East Tennessee Technology Park (K25)	195,741	189,591	171,091
Paducah Gaseous Diffusion Plant			
Uranium Enrichment D&D Fund			
Pens & Comm & Reg Support Paducah	0	2,375	2,375
Paducah Gaseous Diffusion Plant	265,220	207,215	168,652
Total, Uranium Enrichment D&D Fund	265,220	209,590	171,027
Total, Paducah Gaseous Diffusion Plant	265,220	209,590	171,027
Portsmouth Gaseous Diffusion Plant			
Uranium Enrichment D&D Fund			
Pens & Comm & Reg Support Portsmouth	0	1,795	1,795
Portsmouth Gaseous Diffusion Plant	137,613	214,024	165,417
Total, Uranium Enrichment D&D Fund	137,613	215,819	167,212
Total, Portsmouth Gaseous Diffusion Plant	137,613	215,819	167,212
Washington Headquarters			
U/TH Reimbursements			
U/TH Reimbursements	0	10,000	32,959
Total, Washington Headquarters	0	10,000	32,959
Total, Uranium Enrichment Decon. & Decom. Fund	598,574	625,000	542,289

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Defense EM Funded UE D&D Fund Contribution	FY 2014 Current	FY 2015 Enacted	FY 2016 Request
Washington Headquarters			
Uranium Enrichment D & D Fund Contribution			
Uranium Enrichment D & D Fund Contribution	0	463,000	0
Total, Washington Headquarters	0	463,000	0
Total, Defense EM Funded UE D&D Fund Contribution	0	463,000	0

GENERAL PROVISIONS — DEPARTMENT OF ENERGY
(INCLUDING TRANSFER [AND RESCISSIONS] OF FUNDS)

SEC. 301. (a) No appropriation, funds, or authority made available by this title for the Department of Energy shall be used to initiate or resume any program, project, or activity or to prepare or initiate Requests For Proposals or similar arrangements (including Requests for Quotations, Requests for Information, and Funding Opportunity Announcements) for a program, project, or activity if the program, project, or activity has not been funded by Congress.

(b)(1) Unless the Secretary of Energy notifies the Committees on Appropriations of the House of Representatives and the Senate at least 3 full business days in advance, none of the funds made available in this title may be used to—

- (A) make a grant allocation or discretionary grant award totaling \$1,000,000 or more;
- (B) make a discretionary contract award or Other Transaction Agreement totaling \$1,000,000 or more, including a contract covered by the Federal Acquisition Regulation;
- (C) issue a letter of intent to make an allocation, award, or Agreement in excess of the limits in subparagraph (A) or (B); or
- (D) announce publicly the intention to make an allocation, award, or Agreement in excess of the limits in subparagraph (A) or (B).

(2) The Secretary of Energy shall submit to the Committees on Appropriations of the House of Representatives and the Senate within 15 days of the conclusion of each quarter a report detailing each grant allocation or discretionary grant award totaling less than \$1,000,000 provided during the previous quarter.

(3) The notification required by paragraph (1) and the report required by paragraph (2) shall include the recipient of the award, the amount of the award, the fiscal year for which the funds for the award were appropriated, the account and program, project, or activity from which the funds are being drawn, the title of the award, and a brief description of the activity for which the award is made.

(c) The Department of Energy may not, with respect to any program, project, or activity that uses budget authority made available in this title under the heading "Department of Energy—Energy Programs", enter into a multiyear contract, award a multiyear grant, or enter into a multiyear cooperative agreement unless—

- (1) the contract, grant, or cooperative agreement is funded for the full period of performance as anticipated at the time of award; or
- (2) the contract, grant, or cooperative agreement includes a clause conditioning the Federal Government's obligation on the availability of future year budget authority and the Secretary notifies the Committees on Appropriations of the House of Representatives and the Senate at least 3 days in advance.

(d) Except as provided in subsections (e), (f), and (g), the amounts made available by this title shall be expended as authorized by law for the programs, projects, and activities specified in the "Final Bill" column in the "Department of Energy" table included under the heading "Title III—Department of Energy" in the explanatory statement described in section 4 (in the matter preceding division A of this consolidated Act).

(e) The amounts made available by this title may be reprogrammed for any program, project, or activity, and the Department shall notify the Committees on Appropriations of the House of Representatives and the Senate at least 30 days prior to the use of any proposed reprogramming which would cause any program, project, or activity funding level to increase or decrease by more than \$5,000,000 or 10 percent, whichever is less, during the time period covered by this Act.

(f) None of the funds provided in this title shall be available for obligation or expenditure through a reprogramming of funds that—

- (1) creates, initiates, or eliminates a program, project, or activity;
- (2) increases funds or personnel for any program, project, or activity for which funds are denied or restricted by this Act; or
- (3) reduces funds that are directed to be used for a specific program, project, or activity by this Act.

(g)(1) The Secretary of Energy may waive any requirement or restriction in this section that applies to the use of funds made available for the Department of Energy if compliance with such requirement or restriction would pose a substantial risk to human health, the environment, welfare, or national security.

(2) The Secretary of Energy shall notify the Committees on Appropriations of the House of Representatives and the Senate of any waiver under paragraph (1) as soon as practicable, but not later than 3 days after the date of the activity to which a requirement or restriction would otherwise have applied. Such notice shall include an explanation of the substantial risk under paragraph (1) that permitted such waiver.

SEC. 302. 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. 303. 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 [2015]2016 until the enactment of the Intelligence Authorization Act for fiscal year [2015]2016.

SEC. 304. None of the funds made available in this title shall be used for the construction of facilities classified as high-hazard nuclear facilities under 10 CFR Part 830 unless independent oversight is conducted by the Office of [Independent] Enterprise Assessments to ensure the project is in compliance with nuclear safety requirements.

SEC. 305. None of the funds made available in this title may be used to approve critical decision-2 or critical decision-3 under Department of Energy Order 413.3B, or any successive departmental guidance, for construction projects where the total project cost exceeds \$100,000,000, until a separate independent cost estimate has been developed for the project for that critical decision.

[SEC. 306. (a) SECRETARIAL DETERMINATIONS.—In this fiscal year, and in each subsequent fiscal year, any determination (including a determination made prior to the date of enactment of this Act) by the Secretary of Energy under section 3112(d)(2)(B) of the USEC Privatization Act (110 Stat. 1321–335), as amended, shall be valid for not more than 2 calendar years subsequent to such determination.

(b) CONGRESSIONAL NOTIFICATION.—In this fiscal year, and in each subsequent fiscal year, not less than 30 days prior to the provision of uranium in any form the Secretary of Energy shall notify the Committees on Appropriations of the House of Representatives and the Senate of the following—

- (1) the provisions of law (including regulations) authorizing the provision of uranium;
- (2) the amount of uranium to be provided;
- (3) an estimate by the Secretary of Energy of the gross fair market value of the uranium on the expected date of the provision of the uranium;
- (4) the expected date of the provision of the uranium;
- (5) the recipient of the uranium;
- (6) the value the Secretary of Energy expects to receive in exchange for the uranium, including any adjustments to the gross fair market value of the uranium; and
- (7) whether the uranium to be provided is encumbered by any restriction on use under an international agreement or otherwise.]

SEC. [307]306. Notwithstanding section 301(c) of this Act, none of the funds made available under the heading "Department of Energy—Energy Programs—Science" may be used for a multiyear contract, grant, cooperative agreement, or Other Transaction Agreement of \$1,000,000 or less unless the contract, grant, cooperative agreement, or Other Transaction Agreement is funded for the full period of performance as anticipated at the time of award.

[SEC. 308. In fiscal year 2015 and subsequent fiscal years, the Secretary of Energy shall submit to the congressional defense committees (as defined in U.S.C. 101(a)(16)) a report, on each major warhead refurbishment program that reaches the Phase 6.3 milestone, that provides an analysis of alternatives. Such report shall include—

- (1) a full description of alternatives considered prior to the award of Phase 6.3;
- (2) a comparison of the costs and benefits of each of those alternatives, to include an analysis of trade-offs among cost, schedule, and performance objectives against each alternative considered;
- (3) identification of the cost and risk of critical technology elements associated with each alternative, including technology maturity, integration risk, manufacturing feasibility, and demonstration needs;
- (4) identification of the cost and risk of additional capital asset and infrastructure capabilities required to support production and certification of each alternative;
- (5) a comparative analysis of the risks, costs, and scheduling needs for any military requirement intended to enhance warhead safety, security, or maintainability, including any requirement to consolidate and/or integrate warhead systems or mods as compared to at least one other feasible refurbishment alternative the Nuclear Weapons Council considers appropriate; and
- (6) a life-cycle cost estimate for the alternative selected that details the overall cost, scope, and schedule planning assumptions.]

[SEC. 309. (a) Unobligated balances available from prior year appropriations are hereby rescinded from the following accounts of the Department of Energy in the specified amounts:

- (1) "Energy Programs—Energy Efficiency and Renewable Energy", \$9,740,000.
- (2) "Energy Programs—Electricity Delivery and Energy Reliability", \$331,000.
- (3) "Energy Programs—Nuclear Energy", \$121,000.
- (4) "Energy Programs—Fossil Energy Research and Development", \$10,413,000.
- (5) "Energy Programs—Science", \$3,262,000.
- (6) "Energy Programs—Advanced Research Projects Agency—Energy", \$18,000.
- (7) "Energy Programs—Departmental Administration", \$928,000.
- (8) "Atomic Energy Defense Activities—National Nuclear Security Administration— Weapons Activities", \$6,298,000.
- (9) "Atomic Energy Defense Activities—National Nuclear Security Administration— Defense Nuclear Nonproliferation", \$1,390,000.
- (10) "Atomic Energy Defense Activities—National Nuclear Security Administration— Naval Reactors", \$160,000.
- (11) "Atomic Energy Defense Activities—National Nuclear Security Administration—Office of the Administrator", \$413,000.
- (12) "Environmental and Other Defense Activities—Defense Environmental Cleanup", \$9,983,000.
- (13) "Environmental and Other Defense Activities—Other Defense Activities", \$551,000.
- (14) "Power Marketing Administrations—Construction, Rehabilitation, Operation and Maintenance, Western Area Power Administration", \$1,632,000.

(b) No amounts may be rescinded by this section from amounts that were designated by the Congress as an emergency requirement pursuant to a concurrent resolution on the budget or the Balanced Budget and Emergency Deficit Control Act of 1985.]

[SEC. 310. (a) None of the funds made available in this or any prior Act under the heading "Defense Nuclear Nonproliferation" may be made available to enter into new contracts with, or new agreements for Federal assistance to, the Russian Federation.

(b) The Secretary of Energy may waive the prohibition in subsection (a) if the Secretary determines that such activity is in the national security interests of the United States. This waiver authority may not be delegated.

(c) A waiver under subsection (b) shall not be effective until 15 days after the date on which the Secretary submits to the Committees on Appropriations of the House of Representatives and the Senate, in classified form if necessary, a report on the justification for the waiver.]

[SEC. 311. Of the funds authorized by the Secretary of Energy for laboratory directed research and development, no individual program, project, or activity funded by this or any subsequent Act making appropriations for Energy and Water Development for any fiscal year may be charged more than the statutory maximum authorized for such activities: *Provided*, That this section shall take effect not earlier than October 1, 2015.]

[SEC. 312. (a) DOMESTIC URANIUM ENRICHMENT.—None of the funds appropriated by this or any other Act or that may be available to the Department of Energy may be used for the construction of centrifuges for the production of enriched uranium for national security needs in fiscal year 2015.

(b) The Department shall provide a report to the Committees on Appropriations of the House of Representatives and the Senate not later than April 30, 2015 that includes:

- (1) an accounting of the current and future availability of low-enriched uranium, highly-enriched uranium, and tritium to meet defense needs; and
- (2) a cost-benefit analysis of each of the options available to supply enriched uranium for defense purposes, including a preliminary cost and schedule estimate to build a national security train.]

[SEC. 313. None of the funds made available in this Act may be used—

- (1) to implement or enforce section 430.32(x) of title 10, Code of Federal Regulations; or
- (2) to implement or enforce the standards established by the tables contained in section 325(i)(1)(B) of the Energy Policy and Conservation Act (42 U.S.C. 6295(i)(1)(B)) with respect to BPAR incandescent reflector lamps, BR incandescent reflector lamps, and ER incandescent reflector lamps.]

[SEC. 314. None of the funds made available by this Act may be used in contravention of section 3112(d)(2)(B) of the USEC Privatization Act (42 U.S.C. 2297h-10(d)(2)(B)) and all public notice and comment requirements under chapter 6 of title 5, United States Code, that are applicable to carrying out such section.]

[SEC. 315. (a) NOTIFICATION OF STRATEGIC PETROLEUM RESERVE DRAWDOWN.—None of the funds made available by this Act or any prior Act, or funds made available in the SPR Petroleum Account, may be used to conduct a drawdown (including a test drawdown) and sale or exchange of petroleum products from the Strategic Petroleum Reserve unless the Secretary of Energy provides notice, in accordance with subsection (b), of such exchange, or drawdown (including a test drawdown) to the Committees on Appropriations of the House of Representatives and the Senate.

(b) (1) CONTENT OF NOTIFICATION.—The notification required under subsection (a) shall include at a minimum—

- (A) The justification for the drawdown or exchange, including—
 - (i) a specific description of any obligation under international energy agreements; and
 - (ii) in the case of a test drawdown, the specific aspects of the Strategic Petroleum Reserve to be tested;
- (B) the provisions of law (including regulations) authorizing the drawdown or exchange;
- (C) the number of barrels of petroleum products proposed to be withdrawn or exchanged;
- (D) the location of the Strategic Petroleum Reserve site or sites from which the petroleum products are proposed to be withdrawn;
- (E) a good faith estimate of the expected proceeds from the sale of the petroleum products;
- (F) an estimate of the total inventories of petroleum products in the Strategic Petroleum Reserve after the anticipated drawdown;
- (G) a detailed plan for disposition of the proceeds after deposit into the SPR Petroleum Account; and
- (H) a plan for refilling the Strategic Petroleum Reserve, including whether the acquisition will be of the same or a different petroleum product.

(2) TIMING OF NOTIFICATION.—The Secretary shall provide the notification required under subsection (a)—

- (A) in the case of an exchange or a drawdown, as soon as practicable after the exchange or drawdown has occurred; and
- (B) in the case of a test drawdown, not later than 30 days prior to a test drawdown.

(c) POST-SALE NOTIFICATION.—In addition to reporting requirements under other provisions of law, the Secretary shall, upon the execution of all contract awards associated with a competitive sale of petroleum products, notify the Committees on Appropriations of the House of Representatives and the Senate of the actual value of the proceeds from the sale.

(d) (1) NEW REGIONAL RESERVES.—The Secretary may not establish any new regional petroleum product reserve—

(A) unless funding for the proposed regional petroleum product reserve is explicitly requested in advance in an annual budget submission and approved by the Congress in an appropriations Act; or
(B) until 90 days after notification of, and approval by, the Committees on Appropriations of the House of Representatives and the Senate.

(2) The budget request or notification shall include—

(A) the justification for the new reserve;

(B) a cost estimate for the establishment, operation, and maintenance of the reserve, including funding sources;

(C) a detailed plan for operation of the reserve, including the conditions upon which the products may be released;

(D) the location of the reserve; and

(E) the estimate of the total inventory of the reserve.

(e) REPORT ON REFINED PETROLEUM PRODUCTS.—Not later than 180 days after the enactment of this Act, the Secretary shall submit to the Committees on Appropriations of the House of Representatives and the Senate a detailed plan for operation of the refined petroleum products reserve, including funding sources and the conditions upon which refined petroleum products may be released.

(f) REPORT ON STRATEGIC PETROLEUM RESERVE EXPANSION.—

(1) The Secretary, through the Office of Energy Policy and Systems Analysis, shall submit to the Committees on Appropriations of the House of Representatives and the Senate not later than 180 days after enactment of this Act the report required in Public Law 111–8 (123 Stat. 617) regarding the expansion of the Strategic Petroleum Reserve.

(2) The report required in paragraph (1) shall include an analysis of the impacts of Northeast Regional Refined Petroleum Product Reserve on the domestic petroleum market.] (*Energy and Water Development and Related Agencies Appropriations Act, 2015.*)

TITLE V – GENERAL PROVISIONS

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. (a) None of the funds made available in title III of this Act may be transferred to any department, agency, or instrumentality of the United States Government, except pursuant to a transfer made by or transfer authority provided in this Act or any other appropriations Act for any fiscal year, transfer authority referenced in the explanatory statement described in section 4 (in the matter preceding division A of this consolidated Act), or any authority whereby a department, agency, or instrumentality of the United States Government may provide goods or services to another department, agency, or instrumentality.

(b) None of the funds made available for any department, agency, or instrumentality of the United States Government may be transferred to accounts funded in title III of this Act, except pursuant to a transfer made by or transfer authority provided in this Act or any other appropriations Act for any fiscal year, transfer authority referenced in the explanatory statement described in section 4 (in the matter preceding division A of this consolidated Act), or any authority whereby a department, agency, or instrumentality of the United States Government may provide goods or services to another department, agency, or instrumentality.

(c) The head of any relevant department or agency funded in this Act utilizing any transfer authority shall submit to the Committees on Appropriations of the House of Representatives and the Senate a semiannual report detailing the transfer authorities, except for any authority whereby a department, agency, or instrumentality of the United States Government may provide goods or services to another department, agency, or instrumentality, used in the previous 6 months and in the year-to-date. This report shall include the amounts transferred and the purposes for which they were transferred, and shall not replace or modify existing notification requirements for each authority.]

SEC. [503]502. None of the funds made available by this Act may be used in contravention of Executive Order No. 12898 of February 11, 1994 (Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations). (*Energy and Water Development Related Agencies Appropriations Act, 2015*).

