DOE/CF-0123
Volume 5

Department of Energy
FY 2017 Congressional Budget Request

Environmental Management

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FUNDING BY APPROPRIATION

($K)

	FY 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request[1]	FY 2017 vs. FY 2016 $	FY 2017 vs. FY 2016 %
Department of Energy Budget by Appropriation						
Energy and Water Development, and Related Agencies						
Energy Programs						
Energy Efficiency and Renewable Energy	1,914,195	1,840,847	2,069,194	2,898,400	+829,206	+40.1%
Electricity Delivery and Energy Reliability	146,975	143,901	206,000	262,300	+56,300	+27.3%
Nuclear Energy	833,379	821,883	986,161	993,896	+7,735	+0.8%
Office of Technology Transitions	0	0	0	8,400	+8,400	N/A
21st Century Clean Transportation Plan Investments	0	0	0	1,335,000	+1,335,000	N/A
Fossil Energy Programs						
Clean Coal Technology	-6,600	-2,876	0	0	0	N/A
Fossil Energy Research and Development	560,587	548,885	632,000	600,000	-32,000	-5.1%
Use of Prior Year Balances	0	0	0	-240,000	0	N/A
Naval Petroleum and Oil Shale Reserves	19,950	20,640	17,500	14,950	-2,550	-14.6%
Elk Hills School Lands Fund	15,580	15,580	0	0	0	N/A
Strategic Petroleum Reserve	200,000	200,000	212,000	257,000	+45,000	+21.2%
Northeast Home Heating Oil Reserve	1,600	1,600	7,600	6,500	-1,100	-14.5%
Total, Fossil Energy Programs	**791,117**	**783,829**	**869,100**	**638,450**	**-230,650**	**-26.5%**
Uranium Enrichment Decontamination and Decommissioning (UED&D) Fund	625,000	625,000	673,749	673,749	0	N/A
Energy Information Administration	117,000	117,000	122,000	131,125	+9,125	+7.5%
Non-Defense Environmental Cleanup	246,000	246,030	255,000	218,400	-36,600	-14.4%
Science	5,067,738	5,132,813	5,347,000	5,672,069	+325,069	+6.1%
Advanced Research Projects Agency - Energy (ARPA-E)	279,982	279,982	291,000	500,000	+209,000	+71.8%
Departmental Administration	125,043	135,686	130,971	144,866	+13,895	+10.6%
Office of Indian Energy	0	0	0	22,930	+22,930	N/A
Office of the Inspector General	40,500	40,500	46,424	44,424	-2,000	-4.3%
Title 17 - Innovative Technology						
Loan Guarantee Program	17,000	17,000	17,000	10,000	-7,000	-41.2%
Advanced Technology Vehicles Manufacturing Loan Program	4,000	4,000	6,000	5,000	-1,000	-16.7%
Total, Energy Programs	**10,207,929**	**10,188,471**	**11,019,599**	**13,559,009**	**+2,539,410**	**+23.0%**
Atomic Energy Defense Activities						
National Nuclear Security Administration						
Weapons Activities	8,180,359	8,180,609	8,846,948	9,243,147	+396,199	+4.5%
Defense Nuclear Nonproliferation	1,615,248	1,612,651	1,940,302	1,807,916	-132,386	-6.8%
Naval Reactors	1,233,840	1,233,840	1,375,496	1,420,120	+44,624	+3.2%
Office of the Administrator	-413	-413	0	0	0	N/A
Federal Salaries and Expenses	370,000	370,000	363,766	412,817	+49,051	+13.5%
Total, National Nuclear Security Administration	**11,399,034**	**11,396,687**	**12,526,512**	**12,884,000**	**+357,488**	**+2.9%**
Environmental and Other Defense Activities						
Defense Environmental Cleanup	4,990,017	4,989,555	5,289,742	5,226,950	-62,792	-1.2%
Other Defense Activities	753,449	753,449	776,425	791,552	+15,127	+1.9%
Total, Environmental and Other Defense Activities	**5,743,466**	**5,743,004**	**6,066,167**	**6,018,502**	**-47,665**	**-0.8%**
Total, Atomic Energy Defense Activities	**17,142,500**	**17,139,691**	**18,592,679**	**18,902,502**	**+309,823**	**+1.7%**
Power Marketing Administrations						
Southeastern Power Administration	0	0	0	0	0	N/A
Southwestern Power Administration	11,400	11,400	11,400	11,057	-343	-3.0%
Western Area Power Administration	91,740	91,740	93,372	95,581	+2,209	+2.4%
Falcon and Amistad Operating and Maintenance Fund	228	228	228	232	+4	+1.8%
Colorado River Basins Power Marketing Fund	-23,000	-23,000	-23,000	-23,000	0	N/A
Total, Power Marketing Administrations	**80,368**	**80,368**	**82,000**	**83,870**	**+1,870**	**+2.3%**
Federal Energy Regulatory Commission (FERC)	0	0	0	0	0	N/A
Subtotal, Energy and Water Development and Related Agencies	**27,430,797**	**27,408,530**	**29,694,278**	**32,545,381**	**+2,851,103**	**+9.6%**
Uranium Enrichment Decontamination and Decommissioning Fund Discretionary Payments	-463,000	-463,000	0	-155,100	-155,100	N/A
Uranium Enrichment Decontamination and Decommissioning Fund Contribution	463,000	463,000	0	155,100	+155,100	N/A
Excess Fees and Recoveries, FERC	-28,485	-17,325	-23,587	-9,426	+14,161	+60.0%
Title XVII Loan Guarantee Program Section 1703 Negative Credit Subsidy Receipt	0	0	-68,000	-37,000	+31,000	+45.6%
Total, Funding by Appropriation	**27,402,312**	**27,391,205**	**29,602,691**	**32,498,955**	**+2,896,264**	**+9.8%**

[1] FY 2017 Request includes mandatory spending: $1.335B for Clean Transportation Plan, $674M for UED&D Fund, $150M for ARPA-E, and $100M for Science.

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 fire apparatus pumper truck, [and one armored vehicle] one aerial lift truck, one refuse truck, and one semi-truck for replacement only, [$5,289,742,000] $5,382,050,000, to remain available until expended, of which $155,100,000 shall be transferred to the "Uranium Enrichment Decontamination and Decommissioning Fund": Provided, That of such amount, [$281,951,000] $290,050,000 shall be available until September 30, [2017] 2018, for program direction. (Energy and Water Development and Related Agencies Appropriations Act, 2016.)

Non-Defense Environmental Cleanup

For Department of Energy expenses, including the purchase, construction, and acquisition of plant and capital equipment and other expenses necessary for non-defense environmental cleanup activities in carrying out the purposes of the Department of Energy Organization Act (42 U.S.C. 7101 et seq.), including the acquisition or condemnation of any real property or any facility or for plant or facility acquisition, construction, or expansion, [$255,000,000] $218,400,000, to remain available until expended. (Energy and Water Development and Related Agencies Appropriations Act, 2016.)

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, "GPRA Modernization Act of 2010"
- Public Law 113-66, "National Defense Authorization Act for Fiscal Year 2014"

Environmental Management ($K)

	FY 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request
Discretionary				
Defense Environmental Cleanup	5,473,830	5,473,368	5,289,742	5,382,050
Non-Defense Environmental Cleanup	246,000	246,030	255,000	218,400
Uranium Enrichment Decontamination and Decommissioning Fund[a]	625,000	625,000	673,749	0
Subtotal, Environmental Management	6,344,830	6,344,398	6,218,491	5,600,450
Prior Year Unobligated Rescission - Defense	-20,813	-20,813	0	0
D&D Fund Offset	-463,000	-463,000	0	-155,100
Subtotal Discretionary	5,861,017	5,860,585	6,218,491	5,445,350
Mandatory				
United States Enrichment Corporation Fund	0	0	0	673,749
Total, Environmental Management	5,861,017	5,860,585	6,218,491	6,119,099

[a]Uranium Enrichment Decontamination and Decommissioning Fund activities is proposed for funding from balances in the United States Enrichment Corporation (USEC) Fund in FY 2017.

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 six 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 2015. For example, in the High Level Tank Waste program area, EM completed closure of one tank at the Savannah River Site. At Hanford, EM completed work on 33 waste sites through June 2015. This brings the cleanup work in the River Corridor to a cumulative total of over 940 waste sites remediated. At Oak Ridge, EM completed demolition of the K-31 gaseous diffusion plant. At Moab in FY 2015, EM managed to address a work stopping due to a major rock slide in mid-November 2014, successfully and safely resuming work in mid-January 2015 continuing project activities to excavate, transport, and dispose of uranium mill tailings at the Crescent Junction disposal facility. As of the end of FY 2015 a cumulative total of 7.8 million tons out of a life cycle estimate of 16 million tons have been disposed.

EM's progress and planned scope in FY 2016 and FY 2017 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.

As a result of these events, the Department established two Accident Investigation Boards to fully investigate the events and to assess WIPP 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 covered what specifically happened underground to cause the radiological release and programmatic needs to prevent future occurrence.

As a result of these events, the WIPP repository is shut down and is not accepting any transuranic waste shipments.

Additionally, 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 serious risks still exist which DOE may be unable to meet certain 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. In August 2015 the court issued an order (1) directing the parties to submit revised proposals in line with the court's ruling on the extent and nature of the modifications that would be permissible, and (2) reflecting the court's intent to use a three-member expert panel to assist the court with the technical aspects of the proposals. The parties submitted revised proposals in November 2015, and an expert panel has been appointed. The Court's ruling on these motions could change the Department's current Consent Decree obligations. The Office of River Protection and WTP remain a high priority for EM and the Department.

Highlights and Major Changes in the FY 2017 Budget Request

The FY 2017 investment of $5,445,350,000 in discretionary 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 2017. The FY 2017 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 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 2017 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 2017. 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 Idaho site. At the Savannah River site, the FY 2017 request supports continued production of 100-110 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.

The Energy Policy Act of 1992 established the United States Enrichment Corporation (USEC) as a wholly owned government corporation and transferred the Department of Energy's uranium enrichment enterprise to the corporation. EPAct also established the USEC Fund for all financial transactions of the corporation. Pursuant to the USEC Privatization Act of 1996, the government privatized USEC through a stock sale to the private sector in 1996. Since privatization, the balances in the USEC Fund remain unused and continue to accrue interest. The uranium enrichment facilities are now shut down and significantly contaminated by decades of operations for defense and non-defense commercial activities. Under EPAct, the Uranium Enrichment Decontamination and Decommissioning (UED&D) Fund pays, subject to appropriation, the decontamination and decommissioning costs of the gaseous diffusion plants in Tennessee, Ohio, and Kentucky. In FY 2017, the Budget proposes to fund Uranium Enrichment Decontamination and Decommissioning Fund activities using $673,749,000 of mandatory balances within the USEC Fund.

The Administration proposes to reauthorize the special assessment on domestic nuclear utilities, for deposit in the Uranium Enrichment Decontamination and Decommissioning Fund due to higher-than-expected cleanup costs. The reauthorization of the special assessment on domestic nuclear utilities will also offset the cost of the United States Enrichment Corporation Fund proposal.

The FY 2017 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 budget also 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 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 $33,000,000 to support technology investments. $30,000,000 for the Technology Development and Deployment and an additional $3,000,000 for Oak Ridge to improve understanding of mercury transport through the environmental media and to develop characterization, removal, and waste treatment/disposition techniques. The $30,000,000 for the Technology Development and Deployment program will be executed through Headquarters. This program includes Site- and Headquarters-managed projects. One of several projects EM plans to undertake in FY 2017 includes testing multiple technologies to solidify/stabilize mercury in soil to minimize release across the Oak Ridge site. 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 2017, for instance, EM will invest in characterization of and treatment options for Technetium-99, a radioactive constituent in tank waste and the environment; in robotics and semi-autonomous systems required for remote access in nuclear, chemical and other high-hazard facilities that are inaccessible or restricted to human entry; and in the development of test beds for the demonstration of treatment technologies, innovative tooling, and other technical solutions.

The budget also includes approximately $144,000,000 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 2017 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.

Working Capital Fund (WCF) estimates for FY 2017 include the third year of Office of Personnel Management credit monitoring and projected inflation increases in existing WCF programs, including corporate business systems, building occupancy, interagency transfers, and telecommunications. EM's share of this estimated increase is $2,690,000.

In the FY 2017 Budget Request, funding for the WCF is estimated in Program Direction's Headquarters other related expenses for those services that directly support the Federal staff. Other activities, including CyberOne ($6,805,000) and audit costs ($5,107,000), are still funded through cleanup dollars, reflecting the close connection between these activities and program activities.

The FY 2017 Budget funds the following specific activities:

At Idaho, the FY 2017 request will support operations of the Integrated Waste Treatment Unit. 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 2017 request will support the requirements of the Idaho Settlement Agreement. This includes packaging, characterizing, and certifying 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 and maintain soil and ground water remedies for the protection of the Snake River Plain aquifer. 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 2017 budget request is designed to maintain safe and compliant operations for the tank farms, the 222-S Laboratory, the 242-A Evaporator and the Effluent Treatment Facility. It will also support A/AX single shell tank retrievals, Effluent Treatment Facility and Laboratory upgrades as well as, AP-107 upgrades to support feed to the Low Activity Waste Pretreatment System. The FY 2017 budget includes design and long-lead procurement activities for the Low Activity Waste Pretreatment System.

This Waste Treatment and Immobilization Plant supports 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 Waste Treatment and Immobilization Plant budget is designed to move the Waste Treatment and Immobilization Plant toward immobilization of low activity waste as soon as practicable while resolution of technical issues continues.

At the Savannah River Site, the largest portion of the FY 2017 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, the Saltstone Facility, the Effluent Treatment Facility, and the Actinide Removal Process and Modular Caustic Side Solvent Extraction Unit (this unit will be needed until the Salt Waste Processing Facility begins operation); the performance of tank farms operation activities including waste transfers and removals; feed prep and other tank farm activities to support the startup of the Salt Waste Processing Facility in FY 2018; and tank closure activities. In addition, the request supports continued construction of the Salt Waste Processing Facility, completion of the Saltstone Disposal Unit #6, and the initiation of the Saltstone Disposal Unit #7.

The FY 2017 request supports the Savannah River Site operation of the H Canyon/ HB-Line in a safe and secure manner to process aluminum-clad spent nuclear fuel and down blend EM-owned plutonium; maintenance of K-Area to safely and securely store special nuclear material; safe storage of spent nuclear fuel in L-Area; and receipt of foreign and domestic research reactor spent nuclear fuel. The request also provides surveillance and maintenance of the F-Area Complex Facilities, and activities to reduce the risk by reducing residual contamination in the F-Area Materials Storage Facility.

In FY 2017, 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 $322,653,000 including $257,645,000 from balances within the USEC Fund. The majority of the funding request, $214,682,000, 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 2017 request also includes $41,468,000 for continued construction of the on-site waste disposal facility that will dispose of waste generated from the demolition of the Portsmouth Gaseous Diffusion Plant and associated facilities. The balances of the USEC Fund will be utilized to fund these activities, if authorized. In addition, the request includes $50,959,000 in Non-Defense Environmental Cleanup 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 2017, the Paducah site's budget request of $272,310,000 including $207,916,000 from balances within the USEC Fund will support activities to further stabilize the Paducah Gaseous Diffusion Plant that was returned to the Department of Energy from the United States Enrichment Corporation in FY 2015. Of that total, $203,093,000 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. The FY 2017 request also includes $2,437,000 for design of the potential Paducah On-Site Waste Disposal Facility project, if the on-site waste disposal facility is selected as the appropriate remedy. The balances of the USEC Fund will be utilized to fund these activities, if authorized. Additionally, $50,345,000 in Non-Defense Environmental Cleanup 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 2017 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; continue 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 2017 request will maintain EM facilities in a safe, compliant, and secure manner; operate EM waste management facilities such as the on-site disposal facility and sanitary landfills at the Y-12 National Security Complex and waste water and gaseous waste treatment operations at Oak Ridge National Laboratory; continue demolition of Building K-27 at the East Tennessee Technology Park (funded from balances in the USEC Fund, if authorized); and continue design and critical decision reviews 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 planning continues for the Sludge Processing Facility Buildout project. Additionally, the budget supports direct disposition of Consolidated Edison Uranium Solidification Project material from Building 3019.

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 of defense origin at Carlsbad. Since opening WIPP, 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 2017 request will continue WIPP 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.

Infrastructure

In November 2013, the Laboratory Operations Board established an integrated plan to conduct an assessment of general purpose infrastructure to assess how it is meeting mission needs across all 17 labs and NNSA sites and plants, using common standards and an enterprise-wide approach. These assessments, conducted over the course of 2014, provided new insight into the condition of the infrastructure. Data developed as a result of this initiative provided the basis for targeted for new investments in priority general purpose infrastructure projects.

EM manages a portfolio of facilities and infrastructure that are needed for its mission. Much of this infrastructure will be needed for another 25+ years to complete EM's cleanup mission. EM has been participating in Department-wide efforts to assess its infrastructure and identify priority investments. The budget includes $569 million for maintenance, repair, and recapitalization of general-purpose infrastructure to support the cleanup mission. EM will make investments in infrastructure to reduce the consequences of failures that will impact the reliability of our safety and security systems,

waste processing and disposal, tank closure, and other cleanup systems. EM will focus on maintenance and repair funding to ensure the safe and timely restart of WIPP; making investments to support waste processing at Hanford and Oak Ridge; and implementing an overall strategy to right-size infrastructure and seek commercial alternatives where the need for capability has reduced. In addition, EM will make investments at the Savannah River Site to address needs for site-wide general purpose infrastructure, lab operations, tanks, and nuclear material storage and processing facilities in H/K and F area.

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 Budget Request 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 2017 Request for EM contains the following crosscuts:

Subsurface Technology, Engineering and R&D: Over 80 percent of our total energy supply comes from the subsurface, and this importance is magnified by the ability to also use the subsurface to store and sequester fluids and waste products. The subsurface crosscut, Subsurface, will address identified challenges in the subsurface through highly focused and coordinated research in Wellbore Integrity, Stress State and Induced Seismicity, Permeability Manipulation, New Subsurface Signals and Risk Assessment Tools to enhance renewable energy supply, ensure material impact on climate change via CO2 sequestration, and significantly mitigate environmental impacts from energy-related activities and operations.

Cybersecurity: DOE is engaged in two categories of cyber-related activities: protecting the DOE enterprise from a range of cyber threats that can adversely impact mission capabilities 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 2017 Crosscuts ($K)

	Cyber-security	Subsurface Engineering	Total
Carlsbad	965	0	965
Idaho	0	3,000	3,000
Oak Ridge	2,010	0	2,010
Paducah/Portsmouth	2,206	0	2,206
Richland	9,417	3,000	12,417
Savannah River	4,304	0	4,304
West Valley	998	0	998
Technology Development and Deployment	0	2,000	2,000
Total, Crosscuts	19,900	8,000	27,900

Environmental Management Funding by Congressional Control ($K)

	FY 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs FY 2016
Discretionary					
Defense Environmental Cleanup					
Closure Sites					
Closure Sites Administration	4,889	4,889	4,889	9,389	+4,500
Hanford Site					
Central Plateau Remediation	497,456	497,456	555,163	620,869	+65,706
Richland Community and Regulatory Support	19,701	19,701	19,701	14,701	-5,000
River Corridor and Other Cleanup Operations	377,788	377,788	270,710	69,755	-200,955
Construction					
15-D-401: Containerized Sludge (KBC Sludge Removal Annex Construction), RL (RL-0012)	46,055	46,055	77,016	11,486	-65,530
Total, Hanford Site	**941,000**	**941,000**	**922,590**	**716,811**	**-205,779**
Idaho National Laboratory					
Idaho Cleanup and Waste Disposition	377,293	377,293	393,000	359,088	-33,912
Idaho Community and Regulatory Support	2,910	2,910	3,000	3,000	0
Total, Idaho National Laboratory	**380,203**	**380,203**	**396,000**	**362,088**	**-33,912**
NNSA Sites					
Lawrence Livermore National Laboratory	1,366	1,366	1,366	1,396	+30
Los Alamos National Laboratory	185,000	185,000	185,000	0	-185,000
Nevada	64,851	64,851	62,385	62,176	-209
Sandia National Laboratories	2,801	2,801	2,500	4,130	+1,630
Separations Processing Research Unit	0	0	0	3,685	+3,685
Construction					
15-D-406: Hexavalent Chromium Pump and Treatment Remedy Project, LANL (VL-LANL-0030)	4,600	4,600	0	0	0
Total, NNSA Sites	**258,618**	**258,618**	**251,251**	**71,387**	**-179,864**
Oak Ridge					
OR Cleanup and Disposition	131,930	131,930	74,597	54,557	-20,040
OR Nuclear Facility D&D	73,155	73,155	111,958	93,851	-18,107
OR Reservation Community and Regulatory Support	4,365	4,365	4,400	4,400	0
OR Technology Development and Deployment	0	0	2,800	3,000	+200
U233 Disposition Program	0	0	35,895	37,311	+1,416
Construction					
14-D-403: Outfall 200 Mercury Treatment Facility, OR (OR-0041)	9,400	9,400	9,400	5,100	-4,300
15-D-405: Sludge Build-Out, OR (OR-0013B)	4,200	4,200	0	0	0

	FY 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs FY 2016
Total, Construction	**13,600**	**13,600**	**9,400**	**5,100**	**-4,300**
Total, Oak Ridge	**223,050**	**223,050**	**239,050**	**198,219**	**-40,831**
Office of River Protection					
Tank Farm Activities	522,000	522,000	649,000	721,456	+72,456
Waste Treatment and Immobilization Plant	0	0	0	3,000	+3,000
Construction					
01-D-16E: Pretreatment Facility, RL	104,000	104,000	95,000	97,000	+2,000
01-D-16-A-D: Waste Treatment and Immobilization Plant - Sub-Projects A-D, RL	563,000	563,000	595,000	593,000	-2,000
15-D-409: Low Activity Waste Pretreatment System, Hanford (ORP-0014)	23,000	23,000	75,000	73,000	-2,000
Total, Construction	**690,000**	**690,000**	**765,000**	**763,000**	**-2,000**
Total, Office of River Protection	**1,212,000**	**1,212,000**	**1,414,000**	**1,487,456**	**+73,456**
Savannah River Site					
Environmental Cleanup	0	0	0	152,504	+152,504
Nuclear Material Management	0	0	0	311,062	+311,062
Radioactive Liquid Tank Waste Stabilization and Disposition	547,318	547,318	554,878	645,332	+90,454
Savannah River Risk Management Operations	397,976	397,976	413,652	0	-413,652
SR Community and Regulatory Support	11,013	11,013	11,249	11,249	0
Construction					
15-D-402: Saltstone Disposal Unit #6, SR (SR-0014C)	30,000	30,000	34,642	7,577	-27,065
05-D-405: Salt Waste Processing Facility, SR	135,000	135,000	194,000	160,000	-34,000
17-D-401: Saltstone Disposal Unit #7, SR (SR-0014C)	0	0	0	9,729	+9,729
Total, Construction	**165,000**	**165,000**	**228,642**	**177,306**	**-51,336**
Total, Savannah River Site	**1,121,307**	**1,121,307**	**1,208,421**	**1,297,453**	**+89,032**
Program Support					
Mission Support	14,979	14,979	14,979	14,979	0
Program Direction	**280,784**	**280,784**	**281,951**	**290,050**	**+8,099**
Safeguards and Security	**240,000**	**240,000**	**236,633**	**255,973**	**+19,340**
Technology Development and Deployment					
Mission Support	14,000	13,538	20,000	30,000	+10,000
Contribution to the Uranium Enrichment D&D Fund	**463,000**	**463,000**	**0**	**155,100**	**+155,100**
Los Alamos					
EMLA Cleanup Activities	0	0	0	185,606	+185,606
EMLA Community and Regulatory Support	0	0	0	3,394	+3,394
Total, Los Alamos	**0**	**0**	**0**	**189,000**	**+189,000**
Infrastructure Recapitilization	**0**	**0**	**0**	**41,892**	**+41,892**
Waste Isolation Pilot Plant					
Waste Isolation Pilot Plant	304,000	304,000	269,260	257,188	-12,072

	FY 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs FY 2016
Construction					
15-D-411: Safety Significant Confinement Ventilation System, WIPP	12,000	12,000	23,218	2,532	-20,686
15-D-412: Exhaust Shaft, WIPP	4,000	4,000	7,500	2,533	-4,967
Total, Construction	**16,000**	**16,000**	**30,718**	**5,065**	**-25,653**
Total, Waste Isolation Pilot Plant	**320,000**	**320,000**	**299,978**	**262,253**	**-37,725**
Total, Defense Environmental Cleanup	**5,473,830**	**5,473,368**	**5,289,742**	**5,382,050**	**+92,308**
Non-Defense Environmental Cleanup					
Fast Flux Test Reactor Facility D&D	**2,562**	**2,562**	**2,562**	**2,240**	**-322**
Gaseous Diffusion Plants					
Paducah Gaseous Diffusion Plant	52,886	52,886	52,886	50,345	-2,541
Portsmouth Gaseous Diffusion Plant	51,517	49,517	51,517	50,959	-558
Total, Gaseous Diffusion Plants	**104,403**	**102,403**	**104,403**	**101,304**	**-3,099**
Small Sites					
Closure Sites Administration	8,408	8,408	0	0	0
DOE-Sponsored Facilities (per P.L. 112-74)	0	0	17,000	0	-17,000
Energy Technology Engineering Center	8,959	8,959	10,459	10,459	0
Idaho National Laboratory	14,900	14,726	5,919	8,000	+2,081
Moab	35,663	37,867	38,644	34,784	-3,860
Oak Ridge	2,119	2,119	6,000	0	-6,000
Southwest Experimental Fast Oxide Reactor (SEFOR)	0	0	9,500	0	-9,500
Construction					
15-D-410: Ft. St. Vrain Security Upgrades, ID	10,000	10,000	0	0	0
Total, Small Sites	**80,049**	**82,079**	**87,522**	**53,243**	**-34,279**
West Valley Demonstration Project	**58,986**	**58,986**	**59,213**	**61,613**	**+2,400**
Mercury Storage Facility	**0**	**0**	**1,300**	**0**	**-1,300**
Total, Non-Defense Environmental Cleanup	**246,000**	**246,030**	**255,000**	**218,400**	**-36,600**
Uranium Enrichment Decontamination and Decommissioning Fund					
Oak Ridge	**167,898**	**170,067**	**194,673**	**0**	**-194,673**
Paducah					
Paducah Gaseous Diffusion Plant	198,729	198,729	198,729	0	-198,729
Construction					
15-U-407: On-Site Waste Disposal Facility, Paducah (PA-0040)	8,486	8,486	0	0	+0
16-U-401: SWMU 5&6, Paducah	0	0	1,196	0	-1,196
Total, Construction	**8,486**	**8,486**	**1,196**	**0**	**-1,196**
Total, Paducah	**207,215**	**207,215**	**199,925**	**0**	**-199,925**

	FY 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs FY 2016
Portsmouth					
Portsmouth Gaseous Diffusion Plant	209,524	209,524	203,417	0	-203,417
Construction					
15-U-408: On-Site Waste Disposal Facility, Portsmouth (PO-0040)	4,500	4,500	21,749	0	-21,749
Total, Portsmouth	**214,024**	**214,024**	**225,166**	**0**	**-225,166**
Pension and Community and Regulatory Support					
Oak Ridge	21,693	19,524	16,856	0	-16,856
Paducah Gaseous Diffusion Plant	2,375	2,375	2,375	0	-2,375
Portsmouth Gaseous Diffusion Plant	1,795	1,795	1,795		-1,795
Total, Pension and Community and Regulatory Support	**25,863**	**23,694**	**21,026**	**0**	**-21,026**
U/Th Reimbursements					
Mission Support	10,000	10,000	32,959	0	-32,959
Total, Uranium Enrichment Decontamination and Decommissioning Fund	**625,000**	**625,000**	**673,749**	**0**	**-673,749**
Total, Environmental Management - Discretionary	**6,344,830**	**6,344,398**	**6,218,491**	**5,600,450**	**-618,041**
Prior Year Unobligated Rescission - Defense	-20,813	-20,813	0	0	0
D&D Fund Offset	-463,000	-463,000	0	-155,100	-155,100
Total, Environmental Management - Discretionary	**5,861,017**	**5,860,585**	**6,218,491**	**5,445,350**	**-773,141**
Mandatory					
United States Enrichment Corporation Fund					
Oak Ridge[a]	**0**	**0**	**0**	**159,416**	**+159,416**
Paducah[a]					
Paducah Gaseous Diffusion Plant	0	0	0	203,093	+203,093
Construction					
15-U-407: On-Site Waste Disposal Facility, Paducah (PA-0040)	0	0	0	2,437	+2,437
16-U-401: SWMU 5&6, Paducah	0	0	0	0	0
Total, Construction	0	**0**	**0**	**2,437**	**+2,437**
Total, Paducah	**0**	**0**	**0**	**205,530**	**+205,530**
Portsmouth[a]					
Portsmouth Gaseous Diffusion Plant	0	0	0	214,682	+214,682
Construction					
15-U-408: On-Site Waste Disposal Facility, Portsmouth (PO-0040)	0	0	0	41,168	+41,168
Total, Portsmouth	**0**	**0**	**0**	**255,850**	**+255,850**
Pension and Community and Regulatory Support[a]					
Oak Ridge	0	0	0	18,772	+18,772
Paducah Gaseous Diffusion Plant	0	0	0	2,386	+2,386
Portsmouth Gaseous Diffusion Plant	0	0	0	1,795	+1,795

	FY 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs FY 2016
Total, Pension and Community and Regulatory Support	**0**	**0**	**0**	**22,953**	**+22,953**
U/Th Reimbursements[a]					
Mission Support	0	0	0	30,000	+30,000
Total, United States Enrichment Corporation Fund	**0**	**0**	**0**	**673,749**	**+673,749**
Total, Environmental Management	**5,861,017**	**5,860,585**	**6,218,491**	**6,119,099**	**-99,392**
Full Time Equivalents	**1,389**	**1,389**	**1,460**	**1,460**	**0**

[a]Uranium Enrichment Decontamination and Decommissioning Fund activities proposed to be funded from balances within the USEC Fund in FY 2017.

SBIR/STTR:

- FY 2015 Transferred to the Office of Science: SBIR: $406; STTR: $56
- FY 2016 Projected: SBIR $684; STTR $103
- FY 2017 Request: SBIR $1,056; STTR $149

Environmental Management
Funding by Budget Chapters ($K)

	FY 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs FY 2016
Carlsbad	324,455	324,455	304,838	271,000	-33,838
Idaho	405,103	404,929	401,919	370,088	-31,831
Oak Ridge	431,142	431,142	468,407	391,407	-77,000
Mandatory (Non-Add)	*0*	*0*	*0*	*178,188*	
Paducah	269,773	269,773	268,402	272,310	+3,908
Mandatory (Non-Add)	*0*	*0*	*0*	*207,916*	
Portsmouth	275,828	273,828	288,970	322,653	+33,683
Mandatory (Non-Add)	*0*	*0*	*0*	*257,645*	
Richland	1,007,230	1,007,230	990,653	800,000	-190,653
River Protection	1,212,000	1,212,000	1,414,000	1,499,965	+85,965
Savannah River	1,259,542	1,259,542	1,336,566	1,448,000	+111,434
Lawrence Livermore National Laboratory	1,366	1,366	1,366	1,396	+30
Los Alamos National Laboratory	189,600	189,600	185,000	189,000	+4,000
Nevada	64,851	64,851	62,385	62,176	-209
Sandia Site Office	2,801	2,801	2,500	4,130	+1,630
Separations Process Research Unit	0	0	0	3,685	+3,685
West Valley Demonstration Project	60,457	60,457	61,804	63,628	+1,824
Energy Technology Engineering Center	8,959	8,959	10,459	10,459	0
Moab	35,663	37,867	38,644	34,784	-3,860
Other Sites					
Closure Sites Administration	13,297	13,297	4,889	9,389	+4,500
DOE-Sponsored Facilities (per P.L. 112-74)	0	0	17,000	0	-17,000
Southwest Experimental Fast Oxide Reactor (SEFOR)	0	0	9,500	0	-9,500
Subtotal, Other Sites	**13,297**	**13,297**	**31,389**	**9,389**	**-22,000**
Program Direction	280,784	280,784	281,951	290,050	+8,099
D&D Fund Deposit	463,000	463,000	0	155,100	+155,100
Mission Support	38,979	38,517	69,238	74,979	+5,741
Mandatory (Non-Add)	*0*	*0*	*0*	*30,000*	
Subtotal, Environmental Management	**6,344,830**	**6,344,398**	**6,218,491**	**6,274,199**	**+55,708**
Prior Year Unobligated Rescission - Defense	-20,813	-20,813	0	0	0
D&D Fund Offset	-463,000	-463,000	0	-155,100	-155,100

	FY 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs FY 2016
Total, Environmental Management	**5,861,017**	**5,860,585**	**6,218,491**	**6,119,099**	**-99,392**

[a]Uranium Enrichment Decontamination and Decommissioning Fund activities proposed to be funded from balances within the USEC Fund in FY 2017.

Environmental Management
Capital Summary ($K)

	Total	Prior Years	FY 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs FY 2016
Capital Operating Expenses Summary including Major Items of Equipment (MIE)							
Capital Equipment > $500K (including MIE)	0	0	0	0	0	0	0
Plant Projects (GPP and IGPP) (<$10M)	42,565	0	20,775	20,775	26,891	41,892	+15,001
Accelerator Improvement Projects (AIP) (<$5M)	0	0	0	0	0		0
Total, Capital Operating Expenses	**42,565**	**0**	**20,775**	**20,775**	**26,891**	**41,892**	**+15,001**
Capital Equipment > $500K (including MIE)	0	0	0	0	0	0	0
Total, Capital Equipment (including MIE)	**42,565**	**0**	**20,775**	**20,775**	**26,891**	**41,892**	**+15,001**
Plant Projects (GPP and IGPP) (Total Estimated Cost (TEC) <$10M)							
Waste Isolation Pilot Plant							
Building-452 Cooling System Installation	0	0	250	250	0	0	0
140/25T Remote-Handled Crane Upgrades	0	0	244	244	0	0	0
Electrical Distribution Single Point of Failure/Revitalization	0	0	0	0	0	3,250	+3,250
Plant Air Revitalization	0	0	0	0	0	637	+637
Total, Waste Isolation Pilot Plant	**0**	**0**	**494**	**494**	**0**	**3,887**	**+3,887**
Richland							
Transmission & Distribution System Wood Power Poles Testing and Replacement	0	0	0	0	6,257	2,779	-3,478
Replace Radio Fire Alarm Repeater	0	0	0	0	0	6,170	+6,170
Total, Richland	**0**	**0**	**0**	**0**	**6,257**	**8,949**	**+2,692**
River Protection							
SY Farm Exhauster Upgrade	0	0	8,063	8,063	0	0	0

	Total	Prior Years	FY 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs FY 2016
AP Farm Primary Exhauster Replacement	0	0	0	0	2,390	0	-2,390
Tank Farms Electrical Upgrade	0	0	200	200	8,800	0	-8,800
Design and Construct 222-S Ancillary Equipment Addition	0	0	0	0	624	1,073	+1,073
Design and Construct 222-S Archive Storage Facility	0	0	0	0	0	2,100	+2,100
Design and Construct 222-S Standard Laboratory	0	0	0	0	800	5,400	0
Design and Construct 10 Wide Mobile Facility on 4th Street	0	0	0	0	0	2,150	+2,150
Design and Construct 10 Wide Mobile Facility on 4th Street across from Purex	0	0	0	0	0	1,786	+1,786
	0	**0**	**8,263**	**8,263**	**12,614**	**12,509**	**-105**
Savannah River							
SRNL B-Cell Block Window Replacement (Windows #10, #11, #12, #14, #15, and #16)	8,020	0	0	0	8,020	0	-8,020
SRNL -Cell Block Window Replacement (Windows #7, #9, and #13)	8,181	0	0	0	0	8,181	8,181
Repair Site Railroad Infrastructure Phase I - supports H, K., L, and E Areas	2,557	0	0	0	0	2,557	2,557
7th Level H-Canyon Roof/Over HB Line (H-Area)	800	0	0	0	0	800	800
H Canyon Air Tunnel Repair / Replacement – Tunnel Repair Preparation Project	2,009	0	0	0	0	2,009	2,009
294-H Sand Filter Roof Upgrades for original Facility	1,000	0	0	0	0	1,000	1,000
294-H Sand Filter Roof Upgrades of Supplemental Filter Facility	1,000	0	0	0	0	1,000	1,000
Tie In Connection and Installation for HB-Line Alternate Diesel Generator	1,000	0	0	0	0	1,000	1,000
192-4K Fire Water Storage Tank Cleaning & Re-Coating (Funded FY2015)	400	0	400	400	0	0	0
Replace Roof 730-4B (CR15M0004 - Funded in FY2015)	906	0	906	906	0	0	0
Replace Roof 773-A E-Wing E-131 (CR15M0033 - Funded in FY2015)	370	0	370	370	0	0	0
Replace Roof 773-A E-Wing E-004/008 (CR15M0033 - Funded in FY2015)	590	0	590	590	0	0	0
Replace Roof 773-52A (CR15M0033 - Funded in FY2015)	350	0	350	350	0	0	0
Replace HVAC 730-B, 730-1B, 730-2B, 730-4B (CR15M0029 - Funded in FY2015)	1000	0	1,000	1,000	0	0	0
Replace fire panel 704-1N (CR15M0029 - Funded in FY2015)	248	0	248	248	0	0	0

	Total	Prior Years	FY 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs FY 2016
Repair fire dampers 766-H (CR15M0029 - Funded in FY2015)	400	0	400	400	0	0	0
Replace HVAC 717-F (CR15M0029 - Funded in FY2015)	400	0	400	400	0	0	0
Replace fire panel 284-10F (CR15M0029 - Funded in FY2015)	50	0	50	50	0	0	0
Replace fire panel 618-G (CR15M0029 - Funded in FY2015)	50	0	50	50	0	0	0
Replace fire panel 703-42A (CR15M0029 - Funded in FY2015)	50	0	50	50	0	0	0
L-Area Reliable Power (FY 2015 Carryover, total includes NNSA Share)	6,000	0	3,000	3,000	0	0	0
K-Area Reliable Power (FY 2015 Carryover, total includes NNSA Share)	6,000	0	3,000	3,000	0	0	0
Replace 773-A, B/C Wing Central Hood Exhaust Tape-in-Place HEPA Filter Housing (FY2014/FY2015 Carryover)	489	0	489	489	0	0	0
Replace Process Monitoring & Programmable Logic Control System (FY2014/FY2015 Carryover)	383	0	383	383	0	0	0
Replace 735-A Halon Fire Suppression System 773-A (Funded Y2014/FY2015 Carryover)	312	0	312	312	0	0	0 0
	42,565	**0**	**11,998**	**11,998**	**8,020**	**16,547**	**+8,527**
Total, Plant Projects (GPP and IGPP) (Total Estimated (TEC) <$10M	**42,565**	**0**	**20,775**	**20,775**	**26,891**	**41,892**	**+15,001**
Total, Capital Summary	**42,565**	**0**	**20,775**	**20,775**	**26,891**	**41,892**	**+15,001**

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 2015 Current	FY 2015 Enacted	FY 2016 Request	Outyears	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	0	$6,000,000	$1,000,000	0	$452,000

			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.					

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

Environmental Management
Construction Summary ($K)

	Total	Prior Years	FY 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs FY 2016
01-D-416, Waste Treatment and Immobilization Plant, Hanford WA							
01-D-16A-D WTP Subprojects A-D							
Total Estimate Cost (TEC)	TBD	5,801,563	563,000	563,000	595,000	593,000	-2,000
Other Project Costs (OPC)	0	0	0	0	0	0	0
01-D-16E Pretreatment Facility							
Total Estimate Cost (TEC)	TBD	3,396,050	104,000	104,000	95,000	97,000	+2,000
Other Project Costs (OPC)	0	0	0	0	0	0	0
Total Project Cost (TPC) 01-D-416	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**
05-D-405, Salt Waste Processing Facility, Aiken, SC							
Total Estimate Cost (TEC)	1,611,117	1,163,416	N/A	N/A	N/A	N/A	N/A
Other Project Costs (OPC)	710,883	129,108	N/A	N/A	N/A	N/A	N/A
Total Project Cost (TPC) 05-D-405	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**
14-D-403, Outfall 200 Mercury Treatment Facility, OR (OR-0041)							
Total Estimate Cost (TEC)	220,500	4,608	9,400	9,400	9,400	4,000	-5,400
Other Project Costs (OPC)	23,500	10,000	2,800	2,800	1,000	1,100	+100
Total Project Cost (TPC) 15-D-403	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**
KW Basin Sludge Removal Project, Hanford Washington (RL-0012)							
SNF Stabilization and Disposition (RL-0012)							
Total Estimate Cost (TEC)	230,355	106,181	0	0	0	0	0
Other Project Costs (OPC)	77,918	48,014	0	0	0	0	0
Subtotal, KW Basin Sludge Removal Project, Hanford Washington (RL-0012)	TBD	TBD	TBD	TBD	TBD	TBD	TBD

	Total	Prior Years	FY 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs FY 2016
15-D-401, KW Basin Sludge Removal Project, Hanford Washington (RL-0012)							
Total Estimate Cost (TEC)	0	0	46,055	46,055	77,016	1,103	-75,913
Other Project Costs (OPC)	0	0	5,043	5,043	6,407	10,383	+3,976
Subtotal, 15-D-401, KW Basin Sludge Removal Project, Hanford Washington (RL-0012)	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Total Project Cost (TPC) 15-D-401	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**
Saltstone Disposal Unit #6, SR (SR-0014C)							
Savannah River Tank Waste (SR-0014C)							
Total Estimate Cost (TEC)	127,934	39,742	0	0	0	0	0
Other Project Costs (OPC)	15,266	6,548	0	0	0	0	0
Subtotal, Saltstone Disposal Unit #6, SR (SR-0014C)	TBD	TBD	TBD	TBD	TBD	TBD	TBD
15-D-402, Saltstone Disposal Unit #6, SR (SR-0014C)							
Total Estimate Cost (TEC)	0	0	30,000	30,000	34,642	7,577	-27,065
Other Project Costs (OPC)	0	0	2,694	2,694	2,345	3,679	+1,334
Subtotal, 15-D-402, Saltstone Disposal Unit #6, SR (SR-0014C)	0	0	32,694	32,694	36,987	11,256	-25,731
Total Project Cost (TPC) 15-D-402	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**
Sludge Build Out, OR (OR-0013B)							
Oak Ridge Solid Waste (OR-0013B)							
Total Estimate Cost (TEC)	TBD	0	4,200	4,200	0	0	0
Other Project Costs (OPC)	TBD	15,605	0	0	0	0	0
Subtotal, Sludge Build Out, OR-0013B	TBD	TBD	TBD	TBD	TBD	TBD	TBD
15-D-405, Sludge Build Out, OR (OR-0013B)							
Total Estimate Cost (TEC)	TBD	0	0	0	0	0	0
Other Project Costs (OPC)	TBD	0	0	0	0	0	0
Subtotal, 15-D-405, Sludge Build Out, OR (OR-0013B)	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Total Project Cost (TPC) 15-D-405	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**

	Total	Prior Years	FY 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs FY 2016
Hexavalent Chromium Pump and Treatment Remedy Project, LANL (VL-LANL-0030)							
LANL Soil and Water (VL-LANL-0030)							
Total Estimate Cost (TEC)	45,600	0	0	0	0	0	0
Other Project Costs (OPC)	4,400	500	0	0	0	0	0
Subtotal, Hexavalent Chromium Pump and Treatment Remedy Project, LANL (VL-LANL-0030)	TBD	TBD	TBD	TBD	TBD	TBD	TBD
15-D-406, Hexavalent Chromium Pump and Treatment Remedy Project, LANL (VL-LANL-0030)							
Total Estimate Cost (TEC)	0	0	4,600	4,600	0	0	0
Other Project Costs (OPC)	0	0	2,500	2,500	0	0	0
Subtotal, 15-D-406, Hexavalent Chromium Pump and Treatment Remedy Project, LANL (VL-LANL-0030)	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Total Project Cost (TPC) 15-D-406	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**
15-U-407, On Site Waste Disposal Facility (PA-0040)							
Total Estimate Cost (TEC)	303,400	0	8,486	8,486	0	2,437	+2,437
Other Project Costs (OPC)	8,100	0	0	0	0	0	0
Total Project Cost (TPC) 15-U-407	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**
15-U-408, On Site Waste Disposal Facility (PO-0040)							
Total Estimate Cost (TEC)	338,818	0	4,500	4,500	21,749	40,468	+18,719
Other Project Costs (OPC)	11,182	0	0	0	0	700	+700
Total Project Cost (TPC) 15-U-408	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**
15-D-409, Low Activity Waste Pretreatment System (Hanford) (ORP-0014)							
Total Estimate Cost (TEC)	363,500	0	23,000	23,000	75,000	73,000	-2,000
Other Project Costs (OPC)	29,897	4,397	5,000	5,000	8,00	600	-200
Total Project Cost (TPC) 15-D-409	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**

	Total	Prior Years	FY 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs FY 2016
15-D-410, Ft. St. Vrain Security Upgrades (Idaho) (ID-0012B-N))							
Total Estimate Cost (TEC)	TBD	0	TBD	TBD	0	0	0
Other Project Costs (OPC)	TBD	0	TBD	TBD	0	0	0
Total Project Cost (TPC) 15-D-410	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**
15-D-411, Safety Significant Confinement Ventilation System (WIPP) (CB-0080)							
Total Estimate Cost (TEC)	263,792	0	12,000	12,000	23,218	2,532	-20,686
Other Project Costs (OPC)	16,665	0	5,000	5,000	0	0	0
Total Project Cost (TPC) 15-D-411	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**
15-D-412, Exhaust Shaft (WIPP) (CB-0080)							
Total Estimate Cost (TEC)	111,539	0	4,000	4,000	7,500	2,533	-4,967
Other Project Costs (OPC)	6,556	1,000	1,000	1,000	0	0	0
Total Project Cost (TPC) 15-D-412	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**
16-U-401, Solid Waste Management Unit 5 & 6 (PA-0040)							
Total Estimate Cost (TEC)	TBD	0	0	0	1,196	0	-1,196
Other Project Costs (OPC)	TBD	0	960	960	693	0	-693
Total Project Cost (TPC) 16-U-401	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**
17-D-401, Saltstone Disposal Unit #7 (SR-0014C)							
Total Estimate Cost (TEC)	125,443	0	0	0	0	9,729	+9,729
Other Project Costs (OPC)	17,757	0	0	0	2,000	2,957	+957
Total Project Cost (TPC) 17-D-401	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**
Total Project Cost (TPC) All Construction Projects	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**

ANCILLARY TABLES

	FY 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs FY 2016
Discretionary					
Defense Environmental Cleanup					
Operating					
Carlsbad					
CB-0020	4,455	4,455	4,860	4,860	0
CB-0090	21,628	16,814	16,339	22,854	+6,515
CB-0081	35,206	23,635	22,553	26,656	+4,103
CB-0080	247,166	263,551	148,368	207,678	+59,310
CB-0082	0	0	82,000	0	-82,000
CB-0202	0	0	0	3,887	+3,887
Subtotal, Carlsbad	**308,455**	**308,455**	**274,120**	**265,935**	**-8,185**
D&D Fund Deposit					
HQ-DD-0100	463,000	463,000	0	155,100	+155,100
Idaho					
ID-0100	2,910	2,910	3,000	3,000	0
ID-0013	181,800	182,020	202,348	185,502	-16,846
ID-0014B	107,650	108,405	126,413	100,286	-26,127
ID-0030B	75,443	74,468	48,989	55,300	+6,311
ID-0012B-D	12,400	12,400	15,250	18,000	+2,750
Subtotal, Idaho	**380,203**	**380,203**	**396,000**	**362,088**	**-33,912**
Lawrence Livermore National Laboratory					
VL-LLNL-0031	1,128	1,128	1,128	1,147	+19
VL-FOO-0013B-D	238	238	238	249	+11
Subtotal, Lawrence Livermore National Laboratory	**1,366**	**1,366**	**1,366**	**1,396**	**+30**
Los Alamos National Laboratory					
VL-FAO-0101	2,355	2,355	3,394	3,394	0
VL-LANL-0040-D	1,500	1,530	1,453	0	-1,453
VL-LANL-0030	105,545	102,116	99,570	93,366	-6,204
VL-LANL-0013	75,600	78,999	80,583	92,240	+11,657
Subtotal, Los Alamos National Laboratory	**185,000**	**185,000**	**185,000**	**189,000**	**+4,000**
Mission Support					
HQ-MS-0100	6,979	6,979	6,979	6,979	0
HQ-TD-0100	14,000	13,538	20,000	30,000	+10,000
EM-HBCU-0100	8,000	8,000	8,000	8,000	0

	FY 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs FY 2016
Subtotal, Mission Support	**28,979**	**28,517**	**34,979**	**44,979**	**+10,000**
Nevada					
VL-NV-0100	3,495	3,495	2,829	5,049	+2,220
VL-NV-0030	44,416	46,444	38,560	42,187	+3,627
VL-NV-0080	16,940	14,912	20,996	14,940	-6,056
Subtotal, Nevada	**64,851**	**64,851**	**62,385**	**62,176**	**-209**
Oak Ridge					
OR-0100	4,365	4,365	4,400	4,400	0
OR-TD-0100	0	0	2,800	3,000	+200
OR-0013B	90,304	90,304	74,597	54,557	-20,040
OR-0041	34,666	33,297	66,058	43,342	-22,716
OR-0043	102	0	0	100	+100
OR-0042	38,387	39,858	45,900	50,409	+4,509
OR-0020	16,382	16,382	11,828	15,000	+3,172
OR-0011D	41,626	41,626	35,895	37,311	+1,416
Subtotal, Oak Ridge	**225,832**	**225,832**	**241,478**	**208,119**	**-33,359**
Other Sites					
CBC-0100-FN	1,500	1,000	1,300	1,000	-300
CBC-0100-RF	3,389	3,889	3,589	8,389	+4,800
Subtotal, Other Sites	**4,889**	**4,889**	**4,889**	**9,389**	**+4,500**
Paducah					
PA-0020	7,297	7,297	13,216	14,049	+833
Portsmouth					
PO-0020	8,492	8,492	10,492	14,049	+3,557
Program Direction					
HQ-PD-0100	280,784	280,784	281,951	290,050	+8,099
Richland					
RL-0100	19,701	19,701	19,701	14,701	-5,000
RL-0013C	107,651	107,651	150,691	104,400	-46,291
RL-0030	184,929	184,929	174,619	139,904	-34,715
RL-0011	137,130	137,130	148,661	72,000	-76,661
RL-0041	311,866	300,977	181,836	28,755	-153,081
RL-0040	65,922	76,811	88,874	41,000	-47,874
RL-0012	67,746	67,746	81,192	58,014	-23,178
RL-0020	63,668	63,668	65,501	72,000	+6,499
RL-0202	0	0	0	8,949	+8,949
RL-0201	0	0	0	246,551	+246,551

	FY 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs FY 2016
Subtotal, Richland	**958,613**	**958,613**	**911,075**	**786,274**	**-124,801**
River Protection					
ORP-0014	522,000	522,000	649,000	721,456	+72,456
ORP-0202	0	0	0	12,509	+12,509
ORP-0070	0	0	0	3,000	+3,000
Subtotal, River Protection	**522,000**	**522,000**	**649,000**	**736,965**	**+87,965**
Sandia Site Office					
VL-SN-0030	2,801	2,801	2,500	4,130	+1,630
Savannah River					
SR-0100	11,013	11,013	11,249	11,249	0
SR-0013	47,590	44,544	51,546	50,835	-711
SR-0011C	259,910	249,507	254,655	311,062	+56,407
SR-0014C	547,318	547,318	554,878	645,332	+90,454
SR-0012	24,407	42,266	41,407	0	-41,407
SR-0030	66,069	61,659	66,044	74,145	+8,101
SR-0020	138,235	138,235	128,145	134,000	+5,855
SR-0041	0	0	0	27,524	+27,524
SR-0202	0	0	0	16,547	+16,547
Subtotal, Savannah River	**1,094,542**	**1,094,542**	**1,107,924**	**1,270,694**	**+162,770**
Separations Process Research Unit					
VL-SPRU-0040	0	0	0	3,685	+3,685
West Valley Demonstration Project					
OH-WV-0020	1,471	1,471	2,591	2,015	-576
Subtotal, Operating	**4,538,575**	**4,538,113**	**4,178,966**	**4,420,093**	**+241,127**
Line Item Construction					
Carlsbad					
CB-0080	16,000	16,000	30,718	5,065	-25,653
Los Alamos National Laboratory					
VL-LANL-0030	4,600	4,600	0	0	0
Oak Ridge					
OR-0013B	4,200	4,200	0	0	0
OR-0041	9,400	9,400	9,400	5,100	-4,300
Subtotal, Oak Ridge	**13,600**	**13,600**	**9,400**	**5,100**	**-4,300**
Richland					
RL-0012	46,055	46,055	77,016	11,486	-65,530
River Protection					
ORP-0014	23,000	23,000	75,000	73,000	-2,000

	FY 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs FY 2016
ORP-0060	667,000	667,000	690,000	690,000	0
Subtotal, River Protection	**690,000**	**690,000**	**765,000**	**763,000**	**-2,000**
Savannah River					
SR-0014C	165,000	165,000	228,642	177,306	-51,336
Subtotal, Line Item Construction	**935,255**	**935,255**	**1,110,776**	**961,957**	**-148,819**
Subtotal, Environmental Management	**5,473,830**	**5,473,368**	**5,289,742**	**5,382,050**	**+92,308**
Non-Defense Environmental Cleanup					
Operating					
Energy Technology Engineering Center					
CBC-ETEC-0040	8,959	8,959	10,459	10,459	0
Idaho					
ID-0012B-N	4,900	4,726	5,919	8,000	+2,081
ID-0012C-N	10,000	10,000	0	0	0
Subtotal, Idaho	**14,900**	**14,726**	**5,919**	**8,000**	**+2,081**
Moab					
CBC-MOAB-0031	35,663	37,867	38,644	34,784	-3,860
Oak Ridge					
OR-0104	2,119	2,119	6,000	0	-6,000
Other Sites					
CBC-ND-0100	8,408	8,408	0	0	0
SEFOR	0	0	9,500	0	-9,500
CBC-LBNL-0040	0	0	17,000	0	-17,000
Subtotal, Other Sites	**8,408**	**8,408**	**26,500**	**0**	**-26,500**
Paducah					
PA-0011	1,369	4,369	1,369	1,369	0
PA-0011X	51,517	48,517	51,517	48,976	-2,541
Subtotal, Paducah	**52,886**	**52,886**	**52,886**	**50,345**	**-2,541**
Portsmouth					
PO-0011X	51,517	49,517	51,517	50,959	-558
Richland					
RL-0042	2,562	2,562	2,562	2,240	-322
West Valley Demonstration Project					
OH-WV-0040	51,048	51,335	51,275	53,675	+2,400
OH-WV-0013	7,938	7,651	7,938	7,938	0
Subtotal, West Valley Demonstration Project	**58,986**	**58,986**	**59,213**	**61,613**	**+2,400**
Subtotal, Operating	**236,000**	**236,030**	**253,700**	**218,400**	**-35,300**
Line Item Construction					

	FY 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs FY 2016
Idaho					
ID-0012B-N	10,000	10,000	0	0	0
Mission Support					
HQ-MSF	0	0	1,300	0	-1,300
Subtotal, Line Item Construction	**10,000**	**10,000**	**1,300**	**0**	**-1,300**
Subtotal, Environmental Management	**246,000**	**246,030**	**255,000**	**218,400**	**-36,600**
Uranium Enrichment Decontamination and Decommissioning Fund					
Operating					
Mission Support[a]					
HQ-UR-0100	10,000	10,000	32,959	0	-32,959
Oak Ridge[a]					
OR-0102	21,693	19,524	16,856	0	-16,856
OR-0040	167,898	170,067	194,673	0	-194,673
Subtotal, Oak Ridge	**189,591**	**189,591**	**211,529**	0	**-211,529**
Paducah[a]					
PA-0103	1,725	1,725	1,725	0	-1,7250
PA-0102	650	650	650	0	-650
PA-0040	198,729	198,729	198,729	0	-198,729
Subtotal, Paducah	**201,104**	**201,104**	**201,104**	**0**	**-201,104**
Portsmouth[a]					
PO-0104	1,020	1,020	1,020	0	-1,020
PO-0040	209,524	209,524	203,417	0	-203,417
PO-0103	775	775	775	0	-775
Subtotal, Portsmouth	**211,319**	**211,319**	**205,212**	**0**	**-205,212**
Subtotal, Operating	**612,014**	**612,014**	**650,804**	**0**	**-650,804**
Line Item Construction					
Paducah[a]					
PA-0040	8,486	8,486	1,196	0	-1,196
Portsmouth[a]					
PO-0040	4,500	4,500	21,749	0	-21,749
Subtotal, Line Item Construction	**12,986**	**12,986**	**22,945**	**0**	**-22,945**
Subtotal, Environmental Management	**625,000**	**625,000**	**673,749**	**0**	**-673,749**
Subtotal, Environmental Cleanup - Discretionary	**6,344,830**	**6,344,398**	**6,218,491**	**5,600,450**	**-618,041**
Prior Year Unobligated Rescission - Defense	-20,813	-20,813	0	0	0
D&D Fund Offset	-463,000	-463,000	0	-155,100	-155,100
Total, Environmental Cleanup - Discretionary	**5,861,017**	**5,860,585**	**6,218,491**	**5,445,350**	**-773,141**

	FY 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs FY 2016
Mandatory					
United States Enrichment Corporation Fund					
Operating					
Mission Support[a]					
HQ-UR-0100	0	0	0	30,000	+30,000
Oak Ridge[a]					
OR-0102	0	0	0	18,772	+18,772
OR-0040	0	0	0	159,416	+159,416
Subtotal, Oak Ridge	**0**	**0**	**0**	**178,188**	**+178,188**
Paducah[a]					
PA-0103	0	0	0	1,725	+1,725
PA-0102	0	0	0	661	+661
PA-0040	0	0	0	203,093	+203,093
Subtotal, Paducah	**0**	**0**	**0**	**205,479**	**+205,479**
Portsmouth[a]					
PO-0104	0	0	0	1,020	+1,020
PO-0040	0	0	0	214,682	+214,682
PO-0103	0	0	0	775	775
Subtotal, Portsmouth	**0**	**0**	**0**	**216,477**	**+216,477**
Subtotal, Operating	**0**	**0**	**0**	**630,144**	**+630,144**
Line Item Construction					
Paducah[a]					
PA-0040	0	0	0	2,437	+2,437
Portsmouth[a]					
PO-0040	0	0	0	41,168	+41,168
Subtotal, Line Item Construction	**0**	**0**	**0**	**43,605**	**+43,168**
Subtotal, United States Enrichment Corporation Fund	**0**	**0**	**0**	**673,749**	**673,749**
Total, Environmental Cleanup	**5,861,017**	**5,860,585**	**6,218,491**	**6,119,099**	**-99,392**

Summary

	FY 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs FY 2016
Discretionary					
Defense Environmental Cleanup					
Operating	4,538,575	4,538,113	4,178,966	4,420,093	+241,127
Line Item Construction	935,255	935,255	1,110,776	961,957	-148,819
Subtotal, Defense Environmental Cleanup	5,473,830	5,473,368	5,289,742	5,382,050	+92,308
Non-Defense Environmental Cleanup					
Operating	236,000	236,030	253,700	218,400	-35,300
Line Item Construction	10,000	10,000	1,300	0	-1,300
Subtotal, Non-Defense Environmental Cleanup	246,000	246,030	255,000	218,400	-36,600
Uranium Enrichment Decontamination and Decommissioning Fund					
Operating	612,014	612,014	650,804	0	-650,804
Line Item Construction	12,986	12,986	22,945	0	+22,945
Subtotal, Uranium Enrichment Decontamination and Decommissioning Fund	625,000	625,000	673,749	0	-673,749
Subtotal, Environmental Cleanup – Discretionary	**6,344,830**	**6,344,398**	**6,218,491**	**5,600,450**	**-618,041**
Offsets	-483,813	-483,813	0	-155,100	-155,100
Total, Environmental Cleanup - Discretionary	**5,861,017**	**5,860,585**	**6,218,491**	**5,445,350**	**-773,141**
Mandatory					
United States Enrichment Corporation Fund					
Operating	0	0	0	630,144	+630,144
Line Item Construction	0	0	0	43,605	+43,605
Subtotal, **United States Enrichment Corporation Fund**	0	0	0	673,749	+673,749
Total, Environmental Cleanup	**5,861,017**	**5,860,585**	**6,218,491**	**6,119,099**	**-99,392**

Total Operating	5,386,589	5,386,157	5,083,470	5,268,637	+185,167
Total Line Item Construction	958,241	958,241	1,135,021	1,005,562	-129,459
Subtotal, Environmental Management	**6,344,830**	**6,344,398**	**6,218,491**	**6,274,199**	**+55,708**
Offsets	-483,813	-483,813	0	-155,100	-155,100
Total, Environmental Management	**5,861,017**	**5,860,585**	**6,218,491**	**6,119,099**	**-99,392**

[a]Uranium Enrichment Decontamination and Decommissioning Fund activities proposed to be funded from balances within the USEC Fund in FY 2017.

Environmental Management Federal Staffing

	FY 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs FY 2016
Carlsbad	55	55	74	74	0
Idaho	44	44	45	45	0
Oak Ridge	78	78	80	80	0
Portsmouth/Paducah Project Office	52	52	63	63	0
Richland	245	245	245	245	0
River Protection	160	160	162	162	0
Savannah River	264	264	280	280	0
Small Sites	25	25	30	30	0
Nevada Site Office	17	17	18	18	0
Los Alamos Site Office	19	19	35	35	0
Subtotal, Field, Full-Time Equivalents	**959**	**959**	**1,032**	**1,032**	**0**
Headquarters Operations	286	286	283	283	0
Consolidated Business Center	144	144	145	145	0
Total, Field, Full-Time Equivalents	**1,389**	**1,389**	**1,460**	**1,460**	**0**

[a]Corporate Performance Measures – EM Totals

	Cumulative FY 2015 Actual	Cumulative FY 2016 Target	Cumulative FY 2017 Target	Life-cycle Estimate
Geographic Sites Eliminated (number of sites)	91	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)	79,232	97,256	151,955	723,016
Liquid Waste in Inventory eliminated (Thousands of Gallons)	7,592	7,426	8,509	90,814
Liquid Waste Tanks closed (Number of Tanks)	14	15	15	239
High-Level Waste packaged for final disposition (Number of Containers)	4,241	4,393	4,503	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	101,678	[Note]	[Note]	144,654
Transuranic Waste Dispositioned (Cubic meters) - RH	349	[Note]	[Note]	7,286
Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	1,315,101	1,337,349	1,344,445	1,587,658
Material Access Areas eliminated (Number of Material Access Areas)	30	34	34	35
Nuclear Facility Completions (Number of Facilities)	151	160	164	489
Radioactive Facility Completions (Number of Facilities)	565	581	586	982
Industrial Facility Completions (Number of Facilities)	2,105	2,119	2,129	4,137
Remediation Complete (Number of Release Sites)	8,047	8,340	8,368	10,874

[a] 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.

[b]Corporate Performance Measures – EM Totals

	Cumulative FY 2015 Actual	Cumulative FY 2016 Target	Cumulative FY 2017 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	31	32
Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	1,895	1,895	1,895	1,895
Radioactive Facility Completions (Number of	5	5	5	7

[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 2015 Actual	Cumulative FY 2016 Target	Cumulative FY 2017 Target	Life-cycle Estimate
Facilities)				
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				
Geographic Sites Eliminated (number of sites)	0	0	0	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 2015 Actual	Cumulative FY 2016 Target	Cumulative FY 2017 Target	Life-cycle Estimate
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)	55	57	57	57
Oak Ridge				
Oak Ridge				
Geographic Sites Eliminated (number of sites)	2	2	2	2
Industrial Facility Completions (Number of Facilities)	422	426	426	715
Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	200,105	200,440	200,713	201,620
Nuclear Facility Completions (Number of Facilities)	10	10	10	26
Radioactive Facility Completions (Number of Facilities)	58	58	58	120
Remediation Complete (Number of Release Sites)	470	470	470	693
Transuranic Waste Dispositioned (Cubic meters) - CH	1,040	[Note]	[Note]	1,502
Transuranic Waste Dispositioned (Cubic meters) - RH	163	[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
Nevada National Security Site				

[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 2015 Actual	Cumulative FY 2016 Target	Cumulative FY 2017 Target	Life-cycle Estimate
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)	1,214	1,227	1,242	2,113
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	196	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
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)	0	1	2	2
Remediation Complete (Number of Release Sites)	6	7	9	9
Pantex Plant				
Geographic Sites Eliminated (number of sites)	1	1	1	1
Industrial Facility Completions (Number of Facilities)	4	4	4	4
Remediation Complete (Number of Release Sites)	237	237	237	237
Sandia National Laboratory				
Geographic Sites Eliminated (number of sites)	1	1	1	2
Radioactive Facility Completions (Number of Facilities)	1	1	1	1
Remediation Complete (Number of Release Sites)	265	265	265	265

[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 2015 Actual	Cumulative FY 2016 Target	Cumulative FY 2017 Target	Life-cycle Estimate
Idaho				
Pinellas Plant - Idaho				
Geographic Sites Eliminated (number of sites)	1	1	1	1
Monticello Remedial Action Project - Idaho				
Geographic Sites Eliminated (number of sites)	1	1	1	1
Argonne National Laboratory - West				
Geographic Sites Eliminated (number of sites)	1	1	1	1
Remediation Complete (Number of Release Sites)	37	37	37	37
Idaho National Laboratory				
Geographic Sites Eliminated (number of sites)	0	0	0	1
Enriched Uranium packaged for disposition (Number of Containers)	1,586	1,586	1,586	1,586
High-Level Waste packaged for final disposition (Number of Containers)	0	0	0	6,660
Industrial Facility Completions (Number of Facilities)	177	177	179	303
Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	82,144	84,236	84,236	84,236
Liquid Waste in Inventory eliminated (Thousands of Gallons)	6,778	0	270	33,100
Liquid Waste Tanks closed (Number of Tanks)	8	7	7	51
Material Access Areas eliminated (Number of Material Access Areas)	1	1	1	1
Nuclear Facility Completions (Number of Facilities)	55	55	55	92
Radioactive Facility Completions (Number of Facilities)	66	66	68	85
Remediation Complete (Number of Release Sites)	288	288	288	288
Spent Nuclear Fuel packaged for final disposition (Metric Tons of Heavy Metal)	0	0	0	285
Transuranic Waste Dispositioned (Cubic meters) - CH	60,598	[Note]	[Note]	75,497
Transuranic Waste Dispositioned (Cubic meters) - RH	122	[Note]	[Note]	122
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				

[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 2015 Actual	Cumulative FY 2016 Target	Cumulative FY 2017 Target	Life-cycle Estimate
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
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
Rocky Flats Environmental Technology Site				
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

[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 2015 Actual	Cumulative FY 2016 Target	Cumulative FY 2017 Target	Life-cycle Estimate
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
West Valley Demonstration Project				
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)	17	17	19	43
Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	32,105	33,045	33,068	35,354
Liquid Waste in Inventory eliminated (Thousands of Gallons)	6,778	814	814	33,100
Nuclear Facility Completions (Number of Facilities)	3	4	7	25
Radioactive Facility Completions (Number of Facilities)	6	12	14	30
Transuranic Waste Dispositioned (Cubic meters) - CH	0	[Note]	[Note]	596
Transuranic Waste Dispositioned (Cubic meters) - RH	0	[Note]	[Note]	1,125
Portsmouth				
Portsmouth Gaseous Diffusion Plant				
Geographic Sites Eliminated (number of sites)	0	0	0	1
Depleted and Other Uranium packaged for disposition (Metric Tons)	23,086	30,606	54,073	246,819
Industrial Facility Completions (Number of Facilities)	42	42	42	257
Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	73,541	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
Paducah				

[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 2015 Actual	Cumulative FY 2016 Target	Cumulative FY 2017 Target	Life-cycle Estimate
Paducah Gaseous Diffusion Plant				
Geographic Sites Eliminated (number of sites)	0	0	0	1
Depleted and Other Uranium packaged for disposition (Metric Tons)	29,865	40,369	71,601	449,916
Enriched Uranium packaged for disposition (Number of Containers)	0	0	0	182
Industrial Facility Completions (Number of Facilities)	20	20	20	21
Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	23,000	23,000	23,000	23,000
Nuclear Facility Completions (Number of Facilities)	5	5	5	5
Radioactive Facility Completions (Number of Facilities)	7	7	7	11
Remediation Complete (Number of Release Sites)	109	132	136	232
Carlsbad				
Waste Isolation Pilot Plant				
Geographic Sites Eliminated (number of sites)	0	0	0	1
Richland				
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)	687	697	701	1,337
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	24	24	24
Nuclear Facility Completions (Number of Facilities)	50	57	57	91
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)	135	145	146	275
Remediation Complete (Number of Release Sites)	1,291	1,329	1,330	2,195
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

[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 2015 Actual	Cumulative FY 2016 Target	Cumulative FY 2017 Target	Life-cycle Estimate
Savannah River				
Savannah River Site				
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)	3,966	4,118	4,228	7,452
Industrial Facility Completions (Number of Facilities)	257	257	257	847
Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	161,698	170,544	177,344	270,675
Liquid Waste in Inventory eliminated (Thousands of Gallons)	6,778	6,612	7,425	33,100
Liquid Waste Tanks closed (Number of Tanks)	7	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
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	408	516
Spent Nuclear Fuel packaged for final disposition (Metric Tons of Heavy Metal)	5	5	5	41
Transuranic Waste Dispositioned (Cubic meters) - CH	11,134	[Note]	[Note]	15,007
Transuranic Waste Dispositioned (Cubic meters) - RH	26	[Note]	[Note]	55
Los Alamos National Laboratory				
Los Alamos National Laboratory				
Industrial Facility Completions (Number of Facilities)	6	6	6	6
Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	10,751	11,171	11,171	11,171
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)	1,566	1,780	1,780	1,847
Transuranic Waste Dispositioned (Cubic meters) - CH	6,715	[Note]	[Note]	9,489
Transuranic Waste Dispositioned (Cubic meters) - RH	16	[Note]	[Note]	94

[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 2015 Actual	Cumulative FY 2016 Target	Cumulative FY 2017 Target	Life-cycle Estimate
River Protection				
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)	50,141	59,756	59,756	206,445
Liquid Waste in Inventory eliminated (Thousands of Gallons)	6,778	0	0	33,100
Liquid Waste Tanks closed (Number of Tanks)	8	0	0	51
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	Actuals Completed Through 2015	Targeted Completion Through 2016	Targeted Completion Through 2017	Balance Remaining	Life-Cycle Estimate
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
		Radioactive Facility Completions (Number of Facilities)	2	2	2	0	2
Brookhaven National Laboratory	BRNL-0041.NEW						
		Radioactive Facility Completions (Number of Facilities)	1	1	1	0	1
Brookhaven National Laboratory	BRNL-0030						
		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.

[b] This 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	Actuals Completed Through 2015	Targeted Completion Through 2016	Targeted Completion Through 2017	Balance Remaining	Life-Cycle Estimate
		Remediation Complete (Number of Release Sites)	75	75	75	0	75
Brookhaven National Laboratory	BRNL-0040						
		Nuclear Facility Completions (Number of Facilities)	1	1	1	0	1
		Radioactive Facility Completions (Number of Facilities)	7	7	7	0	7
		Remediation Complete (Number of Release Sites)	1	1	1	0	1
Brookhaven National Laboratory	BRNL-0041						
		Radioactive Facility Completions (Number of Facilities)	2	2	2	0	2
		Remediation Complete (Number of Release Sites)	1	1	1	0	1
California Site Support (Non-Defense)	CBC-CA-0013B-N						
		Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	83	83	83	0	83
Energy Technology Engineering Center	CBC-ETEC-0040						
		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

[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	Actuals Completed Through 2015	Targeted Completion Through 2016	Targeted Completion Through 2017	Balance Remaining	Life-Cycle Estimate
		Industrial Facility Completions (Number of Facilities)	24	24	26	+1	27
		Remediation Complete (Number of Release Sites)	4	4	4	+1	5
Inhalation Toxicology Laboratory	CBC-ITL-0030						
		Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	359	359	359	0	359
		Remediation Complete (Number of Release Sites)	9	9	9	0	9
Lawrence Berkeley National Laboratory	CBC-LBNL-0030						
		Remediation Complete (Number of Release Sites)	181	181	181	0	181
Stanford Linear Accelerator Center	CBC-SLAC-0030						
		Remediation Complete (Number of Release Sites)	54	56	56	0	56
Argonne National Laboratory-East	CH-ANLE-0030						
		Remediation Complete (Number of Release Sites)	443	443	443	0	443
Argonne National Laboratory-East	CH-ANLE-0040						
		Radioactive Facility Completions (Number of Facilities)	78	78	78	0	78
Chicago Operations	CH-OPS-0900						

[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	Actuals Completed Through 2015	Targeted Completion Through 2016	Targeted Completion Through 2017	Balance Remaining	Life-Cycle Estimate
Office							
		Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	537	537	537	0	537
		Remediation Complete (Number of Release Sites)	30	30	30	0	30
Laboratory for Energy-Related Health Research	LEHR-0040						
		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
		Remediation Complete (Number of Release Sites)	16	16	16	0	16
Energy Technology Engineering Center	VL-ETEC-0040						
		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	189	189	189	0	189

[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	Actuals Completed Through 2015	Targeted Completion Through 2016	Targeted Completion Through 2017	Balance Remaining	Life-Cycle Estimate
		(Cubic meters)					
		Remediation Complete (Number of Release Sites)	3	3	3	0	3
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

[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	Actuals Completed Through 2015	Targeted Completion Through 2016	Targeted Completion Through 2017	Balance Remaining	Life-Cycle Estimate
		Radioactive Facility Completions (Number of Facilities)	28	28	28	0	28
		Industrial Facility Completions (Number of Facilities)	7	7	7	0	7
		Remediation Complete (Number of Release Sites)	3	3	3	0	3
Columbus	OH-CL-0040						
		Nuclear Facility Completions (Number of Facilities)	1	1	1	0	1
		Radioactive Facility Completions (Number of Facilities)	14	14	14	0	14
		Remediation Complete (Number of Release Sites)	2	2	2	0	2
Fernald	OH-FN-0013						
		Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	7,085	7,085	7,085	0	7,085
		Remediation Complete (Number of Release Sites)	4	4	4	0	4
Fernald	OH-FN-0030						
		Remediation Complete (Number of Release Sites)	2	2	2	0	2
Fernald	OH-FN-0050						
		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						

[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	Actuals Completed Through 2015	Targeted Completion Through 2016	Targeted Completion Through 2017	Balance Remaining	Life-Cycle Estimate
		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
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						

[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	Actuals Completed Through 2015	Targeted Completion Through 2016	Targeted Completion Through 2017	Balance Remaining	Life-Cycle Estimate
		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 Environmental Technology Site	RF-0030						
		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

[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	Actuals Completed Through 2015	Targeted Completion Through 2016	Targeted Completion Through 2017	Balance Remaining	Life-Cycle Estimate
		Industrial Facility Completions (Number of Facilities)	176	176	176	0	176
Idaho							
Idaho National Laboratory	ID-0012B						
		Spent Nuclear Fuel packaged for final disposition (Metric Tons of Heavy Metal)	0	0	0	+285	285
Idaho National Laboratory	ID-0013B						
		Transuranic Waste Dispositioned (Cubic meters) - CH	55,097	[Note]	[Note]		68,097
		Transuranic Waste Dispositioned (Cubic meters) - RH	119	[Note]	[Note]		119
		Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	82,144	84,236	84,236	0	84,236
		Nuclear Facility Completions (Number of Facilities)	0	0	0	+12	12
		Radioactive Facility Completions (Number of Facilities)	0	0	0	+1	1
		Industrial Facility Completions (Number of Facilities)	0	0	0	+38	38
Idaho National Laboratory	ID-0013B.NEW						
		Transuranic Waste Dispositioned (Cubic meters) - RH	3	[Note]	[Note]		3
Idaho National Laboratory	ID-0040B.NEW						

[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	Actuals Completed Through 2015	Targeted Completion Through 2016	Targeted Completion Through 2017	Balance Remaining	Life-Cycle Estimate
		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-0014B						
		Liquid Waste in Inventory eliminated (Thousands of Gallons)	0	0	270	+630	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
		Nuclear Facility Completions (Number of Facilities)	0	0	0	+17	17

[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	Actuals Completed Through 2015	Targeted Completion Through 2016	Targeted Completion Through 2017	Balance Remaining	Life-Cycle Estimate
		Radioactive Facility Completions (Number of Facilities)	0	0	2	+14	16
		Industrial Facility Completions (Number of Facilities)	0	0	1	+46	47
Idaho National Laboratory	ID-0030B						
		Transuranic Waste Dispositioned (Cubic meters) - CH	5,501	[Note]	[Note]		7,400
		Nuclear Facility Completions (Number of Facilities)	0	0	0	+8	8
		Radioactive Facility Completions (Number of Facilities)	0	0	0	+2	2
		Industrial Facility Completions (Number of Facilities)	0	0	1	+40	41
		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-0050B						
		Radioactive Facility Completions (Number of Facilities)	35	35	35	0	35

[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	Actuals Completed Through 2015	Targeted Completion Through 2016	Targeted Completion Through 2017	Balance Remaining	Life-Cycle Estimate
		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
Los Alamos National Laboratory							
Los Alamos National Laboratory	VL-LANL-0013						
		Transuranic Waste Dispositioned (Cubic meters) - CH	6,715	[Note]	[Note]		9,489
		Transuranic Waste Dispositioned (Cubic meters) - RH	16	[Note]	[Note]		94
		Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	5,325	5,745	5,745	0	5,745
Los Alamos National Laboratory	VL-LANL-0030						
		Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	5,426	5,426	5,426	0	5,426
		Remediation Complete (Number of Release Sites)	1,566	1,780	1,780	+67	1,847
Los Alamos National Laboratory	VL-LANL-0040-D						
		Nuclear Facility Completions (Number of Facilities)	1	1	1	0	1
		Radioactive Facility Completions (Number	15	15	15	+15	30

[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	Actuals Completed Through 2015	Targeted Completion Through 2016	Targeted Completion Through 2017	Balance Remaining	Life-Cycle Estimate
		of Facilities)					
		Industrial Facility Completions (Number of Facilities)	5	5	5	0	5
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
NNSA Sites							
Lawrence Livermore National Laboratory	HQ-SW-0013Y						
		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
		Remediation Complete (Number of Release Sites)	155	155	155	0	155
Kansas City Plant	VL-KCP-0030						
		Remediation Complete (Number of	43	43	43	0	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.

Office / Installation	Project Number	Project Name / Measure	Actuals Completed Through 2015	Targeted Completion Through 2016	Targeted Completion Through 2017	Balance Remaining	Life-Cycle Estimate
		Release Sites)					
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	76	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
		Industrial Facility Completions (Number of Facilities)	1	1	1	0	1
		Remediation Complete (Number of Release Sites)	1,161	1,174	1,189	+871	2,060

[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	Actuals Completed Through 2015	Targeted Completion Through 2016	Targeted Completion Through 2017	Balance Remaining	Life-Cycle Estimate
Pantex Plant	VL-PX-0030						
		Remediation Complete (Number of Release Sites)	237	237	237	0	237
Pantex Plant	VL-PX-0040						
		Industrial Facility Completions (Number of Facilities)	4	4	4	0	4
Sandia National Laboratory	VL-SN-0030						
		Radioactive Facility Completions (Number of Facilities)	1	1	1	0	1
		Remediation Complete (Number of Release Sites)	265	265	265	0	265
NNSA Service Center	VL-SPRU-0040						
		Nuclear Facility Completions (Number of Facilities)	0	1	2	0	2
		Remediation Complete (Number of Release Sites)	5	6	8	0	8
NNSA Service Center	VL-SV-0100						
		Remediation Complete (Number of Release Sites)	1	1	1	0	1
Oak Ridge							
Oak Ridge	OR-0041.NEW						
		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	4	4	4	0	4

[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	Actuals Completed Through 2015	Targeted Completion Through 2016	Targeted Completion Through 2017	Balance Remaining	Life-Cycle Estimate
		of Facilities)					
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	HQ-SW-0013Y						
		Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	16,252	16,252	16,252	0	16,252
Oak Ridge	OR-0011D						
		Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	211	249	276	+169	445
Oak Ridge	OR-0011Y						
		Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	93	93	93	0	93
		Nuclear Facility Completions (Number of Facilities)	4	4	4	0	4

[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	Actuals Completed Through 2015	Targeted Completion Through 2016	Targeted Completion Through 2017	Balance Remaining	Life-Cycle Estimate
Oak Ridge	OR-0013A						
		Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	48,584	48,584	48,584	0	48,584
Oak Ridge	OR-0013B						
		Transuranic Waste Dispositioned (Cubic meters) - CH	1,040[Note]	[Note]			1,502
		Transuranic Waste Dispositioned (Cubic meters) - RH	163[Note]	[Note]			600
		Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	18,141	18,141	18,141	0	18,141
Oak Ridge	OR-0030						
		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
		Remediation Complete (Number of Release Sites)	106	106	106	0	106
Oak Ridge	OR-0031						
		Remediation Complete (Number of Release Sites)	7	7	7	+1	8
Oak Ridge	OR-0040						
		Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	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	Actuals Completed Through 2015	Targeted Completion Through 2016	Targeted Completion Through 2017	Balance Remaining	Life-Cycle Estimate
		Nuclear Facility Completions (Number of Facilities)	3	3	3	+1	4
		Radioactive Facility Completions (Number of Facilities)	10	10	10	+17	27
		Industrial Facility Completions (Number of Facilities)	384	388	388	+160	548
		Remediation Complete (Number of Release Sites)	143	143	143	+34	177
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)	4,668	4,965	5,211	+738	5,949
		Nuclear Facility Completions (Number of Facilities)	0	0	0	+15	15
		Radioactive Facility Completions (Number of Facilities)	14	14	14	+29	43
		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	Actuals Completed Through 2015	Targeted Completion Through 2016	Targeted Completion Through 2017	Balance Remaining	Life-Cycle Estimate
		Remediation Complete (Number of Release Sites)	87	87	87	+92	179
Oak Ridge	OR-0043						
		Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	32,979	32,979	32,979	0	32,979
		Radioactive Facility Completions (Number of Facilities)	0	0	0	+12	12
		Industrial Facility Completions (Number of Facilities)	7	7	7	+11	18
Oak Ridge	OR-0900-D						
		Remediation Complete (Number of Release Sites)	74	74	74	0	74
Oak Ridge	OR-0900-N						
		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
		Radioactive Facility Completions (Number of Facilities)	1	1	1	0	1
Paducah Gaseous Diffusion Plant	PA-0011X						
		Depleted and Other Uranium packaged	29,865	40,369	71,601	+378,315	449,916

[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	Actuals Completed Through 2015	Targeted Completion Through 2016	Targeted Completion Through 2017	Balance Remaining	Life-Cycle Estimate
		for disposition (Metric Tons)					
Paducah Gaseous Diffusion Plant	PA-0013						
		Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	22,529	22,529	22,529	0	22,529
Paducah Gaseous Diffusion Plant	PA-0040						
		Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	471	471	471	0	471
		Nuclear Facility Completions (Number of Facilities)	5	5	5	0	5
		Radioactive Facility Completions (Number of Facilities)	6	6	6	+4	10
		Industrial Facility Completions (Number of Facilities)	20	20	20	+1	21
		Remediation Complete (Number of Release Sites)	108	131	135	+96	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)	23,086	30,606	54,073	+192,746	246,819

[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	Actuals Completed Through 2015	Targeted Completion Through 2016	Targeted Completion Through 2017	Balance Remaining	Life-Cycle Estimate
Portsmouth Gaseous Diffusion Plant	PO-0013						
		Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	36,702	36,702	36,702	0	36,702
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	3,437	3,437	3,437	0	3,437

[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	Actuals Completed Through 2015	Targeted Completion Through 2016	Targeted Completion Through 2017	Balance Remaining	Life-Cycle Estimate
		for disposition (Kilograms of Bulk)					
		Material Access Areas eliminated (Number of Material Access Areas)	20	20	20	0	20
		Nuclear Facility Completions (Number of Facilities)	36	42	42	0	42
		Radioactive Facility Completions (Number of Facilities)	10	20	20	0	20
		Industrial Facility Completions (Number of Facilities)	20	30	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	4	4	0	4
Hanford Site	RL-0040						
		Nuclear Facility Completions (Number of	6	6	6	+29	35

[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	Actuals Completed Through 2015	Targeted Completion Through 2016	Targeted Completion Through 2017	Balance Remaining	Life-Cycle Estimate
		Facilities)					
		Radioactive Facility Completions (Number of Facilities)	21	21	21	+110	131
		Industrial Facility Completions (Number of Facilities)	277	277	277	+546	823
		Remediation Complete (Number of Release Sites)	81	81	81	+776	857
Hanford Site	RL-0041						
		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	9	+1	10
		Radioactive Facility Completions (Number of Facilities)	104	104	105	+11	116
		Industrial Facility Completions (Number of Facilities)	390	390	394	+58	452
		Remediation Complete (Number of Release Sites)	1,210	1,248	1,249	+89	1,338
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	0	0	0	+32	32

[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	Actuals Completed Through 2015	Targeted Completion Through 2016	Targeted Completion Through 2017	Balance Remaining	Life-Cycle Estimate
		of Facilities)					
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 Tanks)	0	0	0	+177	177
		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)	50,141	59,756	59,756	+146,689	206,445
		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
West Valley							

[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	Actuals Completed Through 2015	Targeted Completion Through 2016	Targeted Completion Through 2017	Balance Remaining	Life-Cycle Estimate
Demonstration Project							
West Valley Demonstration Project	OH-WV-0013						
		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)	32,105	33,045	33,068	+2,286	35,354
West Valley Demonstration Project	OH-WV-0040						
		Nuclear Facility Completions (Number of Facilities)	3	4	7	+18	25
		Radioactive Facility Completions (Number of Facilities)	6	12	14	+16	30
		Industrial Facility Completions (Number of Facilities)	17	17	19	+24	43
Savannah River							
SR-0011B							
		Plutonium Metal or Oxide packaged for long-term storage (Number of Containers)	919	919	919	0	919
		Plutonium or Uranium Residues packaged	490	490	490	0	490

[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	Actuals Completed Through 2015	Targeted Completion Through 2016	Targeted Completion Through 2017	Balance Remaining	Life-Cycle Estimate
		for disposition (Kilograms of Bulk)					
SR-0011C							
		Enriched Uranium packaged for disposition (Number of Containers)	3,472	3,472	3,472	+405	3,877
		Depleted and Other Uranium packaged for disposition (Metric Tons)	11,536	11,536	11,536	0	11,536
SR-0012							
		Spent Nuclear Fuel packaged for final disposition (Metric Tons of Heavy Metal)	5	5	5	+36	41
SR-0013							
		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
		Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed (Cubic meters)	161,698	170,544	177,344	+93,331	270,675
SR-0014C							
		Liquid Waste in Inventory eliminated (Thousands of Gallons)	6,049	6,612	7,425	+25,675	33,100
		Liquid Waste Tanks closed (Number of Tanks)	7	8	8	+43	51
		High-Level Waste packaged for final disposition (Number of Containers)	3,966	4,118	4,228	+3,224	7,452
SR-0020							
		Material Access Areas eliminated	2	2	2	+1	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	Actuals Completed Through 2015	Targeted Completion Through 2016	Targeted Completion Through 2017	Balance Remaining	Life-Cycle Estimate
		(Number of Material Access Areas)					
SR-0030							
		Nuclear Facility Completions (Number of Facilities)	0	0	0	+190	190
		Radioactive Facility Completions (Number of Facilities)	14	14	14	+33	47
		Industrial Facility Completions (Number of Facilities)	25	25	25	+590	615
		Remediation Complete (Number of Release Sites)	402	402	408	+108	516
SR-0040							
		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

[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.

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 operations at the Carlsbad Field Office is estimated to be $18,304,000 in FY 2017.

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 to support initial recovery activities. All of these funds were made available through reallocation from originally planned activities. In FY 2015, $127,000,000 of the appropriation was expended to support recovery and $42,100,000 reallocated from base activities. The FY 2016 omnibus appropriation included $82,000,000 for Waste Isolation Pilot Plant recovery, and $30,718,000 for line item capital asset projects.

The FY 2017 request includes $5,065,000 for line item capital asset projects.

With resumption of waste emplacement expected in late FY 2016 or early 2017, Recovery activities are assumed to be completed in FY 2016. Hence, line-items are included under Base for the purpose of the Accounting of Funding Table.

Accounting of Funding for Waste Isolation Pilot Plant's Recovery Activities		
FY 2015		
PBS	Base Activities	Recovery Activities
PBS CB-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, 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. **Funding:** $120.2 million	**Activities:** Safety management program upgrades, documented safety analysis revision for initial operations, catch-up 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. Funding: $127 million (includes $42.1 million reallocated from base)
PBS CB-0080	Critical Decision-1, Approve Design and Cost Range, for line-item projects for confinement ventilation system/new exhaust shaft, operational readiness review preparation, etc. 15-D-411, Ventilation System: $12	

15-D-411 15-D-412	million 15-D-412, Exhaust Shaft: $4 million	
PBS CB-0081, Central Characterization Project	**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), Los Alamos National Laboratory, and the Oak Ridge National Laboratory. **Funding:** $35.2 million	N/A
PBS CB-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 CB-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 CB-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 programs, etc. **Funding:** $148.4 million	**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, 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. **Funding**: $82 million
PBS CB-0080 15-D-411 15-D-412	Completion of Critical Decision-1, Approve Alternate Selection and Cost Range and progress toward a combined Critical Decision-2/3, Approve Performance Baseline/Approve Start of Construction for line-item projects for safety significant confinement ventilation system/new exhaust shaft. 15-D-411, Safety Significant Confinement Ventilation System: $23.2 million 15-D-412, Exhaust Shaft: $7.5 million	
PBS CB-0081, Central Characterization Project	**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.	N/A

	Funding: $22.6 million	
PBS CB-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: TRUPACT II's, Half PACTS, TRUPACT III's, and RH-72B's; transportation readiness and capability for inter-site shipments. **Funding:** $16.3 million	N/A
PBS CB-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; planned improvements in cyber security improvements. **Funding:** $4.9 million	N/A
	Total FY 2016 Funding: $304.9 million	

FY 2017		
PBS	Base Activities	Recovery Activities
PBS CB-0080, Operate Disposal Facility	**Activities:** Operations, safety, fire, compliance, environmental monitoring, surface and underground operations, repair of equipment, facilities, and infrastructure, safety and health programs, including safety management program and oversight program enhancements (initially funded under recovery, transitioning back into base), emergency management, quality assurance, security, Resource Conservation and Recovery Act permit maintenance, project planning and control, procurement, finance and accounting, information system,	N/A

	oversight and interagency programs, ground control, maintenance of equipment, continuation of progress on above-ground storage capability, which is currently planned to be a General Plant Project, repair of New Mexico roads used for the transportation of shipments of transuranic waste, etc. Direct maintenance and repair is included in this PBS. **Funding:** $196.3 million As documented in the WIPP Integrated Performance Measurement Baseline, activities required in FY 2017 to resume waste emplacement include facility program enhancements, Documented Safety Analysis, underground/ habitability operations, facility upgrades, waste emplacement, program support and progress on the capital asset projects. **Funding:** $15.3 million 15-D-411, Safety Significant Ventilation System: $2.5 million 15-D-412, Exhaust Shaft: $2.5 million Supports continued progress on a combined Critical Decision-2/3, Approve Performance Baseline/Approve Start of Construction for the new safety significant confinement ventilation system and new exhaust shaft line-item projects, which has incorporated safety into the design process that will support future safe operations at the Waste Isolation Pilot Plant facility.	
PBS CB-0081, Central Characterization Project	**Activities:** Acceptable knowledge review and procedural support, waste certification support required for characterization activities at one generator site; 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	N/A

	transuranic waste disposition at Idaho National Laboratory (transportation certification only, where Idaho National Laboratory funds characterization certification) and the Oak Ridge National Laboratory. **Funding:** $26.7 million	
PBS CB-0090, Transportation	**Activities:** Transportation capabilities up to five shipments per week 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:** $22.8 million	N/A
PBS CB-0020, Safeguards and Security	**Activities:** 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; planned improvements in cyber security improvements. **Funding:** $4.9 million	N/A
	Total FY 2017 Funding: $271,000	

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 salt 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, contractor assurance systems, safety culture, etc., and included areas where the Department should evaluate processes or procedures, and develop and implement corrective actions.

The initial "Phase I" 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 I 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 II Accident Investigation Board report was released on April 16, 2015, and covered the specific cause of the radiological release and Programmatic needs to prevent reoccurrence.

As a result of these events, the Waste Isolation Pilot Plant repository is shut down and is not accepting any transuranic waste shipments.

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 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 line-item capital projects: the new permanent ventilation system and the new exhaust shaft. Ongoing actions include: implementation of corrective actions; safety management program improvements; Documented Safety Analysis revision; underground stabilization activities (e.g., geotechnical surveys, catch up roof bolting); continued radiological surveys; collection and analysis of environmental samples; cleaning and maintenance of underground equipment; repair of failed equipment and infrastructure for the underground, interim and supplemental ventilation upgrades; planning and design for the safety significant confinement ventilation system; periodic replacement of the underground ventilation system filters; and, activities to ensure protection of the environment. For planning purposes, waste emplacement in the underground is projected to begin at the end of CY 2016.

Highlights of the FY 2017 Budget Request

The funding supports 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 activities planned in FY 2017 (within Project Baseline Summary Operate Waste Disposal Facility-WIPP) include continued: safety basis revision, Accident Investigation Board Corrective Action Plan enhancement; Safety Management Program implementation; environmental monitoring, Resource Conservation and Recovery Act permit maintenance, surface and underground operations, repair of equipment and infrastructure to maintain operational capabilities, progress on the line-items capital projects (safety significant confinement ventilation system and new exhaust shaft); continuation of mining; continuation of disposal operations of waste using existing disposal panels; supports improvements to degraded infrastructure to include: correcting single point

of failure potential to the electrical distribution system; information technology upgrades; and, start of the recapitalization of the plant compressed air system, progress on the proposed above-ground storage capability, repair and upgrade the North Access Road, and preparation for emplacement operations.

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. Legacy transuranic waste processing (nitrates waste stream) at Los Alamos National Laboratory will be characterized and certified by the Central Characterization Project in FY 2017 and funded by Environmental Management- Los Alamos, 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 transuranic waste shipments to the Waste Isolation Pilot Plant using Type-B transportation containers, maintenance and support for transportation containers, Safety Analysis Report for Packaging for transportation containers and associated certificates of compliance, as well as, maintenance of established shipping corridors and associated stakeholder support activities with state and tribal organizations. The transportation capability supports up to five waste shipments per week to the Waste Isolation Pilot Plant.

The FY 2017 request includes $2,533,000 in FY 2017 line-item funding for design and construction the Waste Isolation Pilot Plant exhaust shaft and $2,532,000 for the design and construction of the new safety significant confinement ventilation system. While these projects are not needed to support the resumption of waste emplacement operations, they are needed to provide the Waste Isolation Pilot Plant ventilation necessary for disposal of transuranic waste operations in both "clean" and contaminated underground areas, and for simultaneous mine stability, mining, maintenance, and waste emplacement activities.

FY 2016 - 2017 Key Milestones/Outlook

- (December 2015) Obtained Critical Decision-1, Approve Alternative Selection and Cost Range, for line-item projects for confinement ventilation system/new exhaust shaft
- (March 2016) Documented Safety Analysis revision
- (April 2016) Startup of Interim Ventilation System
- (July 2016) Conduct contractor operational readiness review for resumption of interim waste emplacement operations
- (September 2016) Conduct DOE operational readiness review for resumption of interim waste emplacement operations
- (December 2016) Resume waste emplacement operations of wastes stored on-site
- (Second Quarter 2017) Complete supplemental ventilation upgrades

The FY 2017 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.

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.
5. The April 30, 2015, Principles of Agreement outlines the conditions under which all constituents agree to settle any and all future claims, penalties, fines or other sanctions against DOE Permittees, their constituent agencies, contractors and other affiliates arising from or relating to the February 2014 incidents at the Waste Isolation Pilot Plant.

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. The Waste Isolation Pilot Plant 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 which have a base year period and four option periods for out-years. The Cast Specialty contract is for the period January 2012, to January 2017. The Visionary Solutions contract is for the period July 2012, to July 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 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs FY 2016
Defense Environmental Cleanup					
Waste Isolation Pilot Plant					
CB-0080 / Operate Waste Disposal Facility-WIPP	263,166	279,551	179,086	212,743	+33,657
CB-0081 / Central Characterization Project	35,206	23,635	22,553	26,656	+4,103
CB-0082 / WIPP Recovery Activities	0	0	82,000	0	-82,000
CB-0090 / Transportation-WIPP	21,628	16,814	16,339	22,854	+6,515
Subtotal, Waste Isolation Pilot Plant	**320,000**	**320,000**	**299,978**	**262,253**	**-37,725**
Safeguards and Security					
CB-0020 / Safeguards and Security	4,455	4,455	4,860	4,860	0
Infrastructure Recapitalization					
CB-0202 / General Plant Projects	0	0	0	3,887	+3,887
Total, Defense Environmental Cleanup	**324,455**	**324,455**	**304,838**	**271,000**	**-33,838**

Carlsbad Explanation of Major Changes ($K)

	FY 2017 vs FY 2016
Defense Environmental Cleanup	
Infrastructure Recapitalization	
CB-0202 / General Plant Projects	
• The increase reflects the establishment of a new PBS for Recapitalization/GPP projects.	+3,887
Waste Isolation Pilot Plant	
CB-0080 / Operate Waste Disposal Facility-WIPP	
• Increase reflects completion of recovery activities (formerly included in PBS WIPP Recovery Activities) (PBS CB-0082) and shift of those activities to base operations: Continuing activities include corrective actions and safety management program improvements, completion of mine stabilization, mine habitability activities in all underground areas, completion of decontamination of contaminated areas for restart of waste emplacement activities, continued purchase of mining equipment, and infrastructure improvements.	
• Support activities required for resumption of emplacement operations, and reflects funding for line-item capital projects, continued safety management/oversight programs, continued panel mining, maintenance and repair, continuation of progress on above-ground storage capability, which is currently planned to be a General Plant Project, and completion of repairs of New Mexico Roads used for the transportation of DOE shipments of transuranic waste to the Waste Isolation Pilot Plant, e.g., the North Access road to the Waste Isolation Pilot Plant.	
• Reflects the transfer of funding for GPP projects to a newly-established PBS, CB-0202.	+33,657
CB-0081 / Central Characterization Project	
• Increase reflects increased characterization and certification activities at Idaho (transportation certification only) and Oak Ridge National Laboratory.	+4,103
CB-0082 / WIPP Recovery Activities	
• Decrease reflects all activities now included in PBS Operate Waste Disposal Facility-WIPP (PBS-0080) to resume operations in first quarter FY 2017, including continued implementation of corrective actions and safety management program improvements, corrective actions from contractor management assessments, completion of Operational Readiness Reviews and commencement of waste emplacement operations. Recurring activities include mine stabilization, mining, mine habitability activities in all underground areas, continued decontamination of contaminated areas, and upgrades, purchases and maintenance and repair to continue infrastructure improvements.	-82,000
CB-0090 / Transportation-WIPP	
• Increase reflects transportation activities required for return to operations at a rate of up to five shipments per week.	+6,515
Total, Carlsbad	**-33,838**

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

Overviews

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

This PBS includes all activities necessary for resumption of waste emplacement operations (formerly included in PBS WIPP Recovery Activities) (PBS CB-0082) and 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 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 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 and continuation of corrective actions, of safety management program improvements, Documented Safety Analysis revision, underground stabilization activities (e.g., geotechnical surveys, catch-up roof bolting), planning and design for the permanent ventilation system, periodic replacement of the underground ventilation system filters, and activities to ensure protection of 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 at the end of CY 2016. The 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 2017 funding includes the following activities: operations, safety, fire, compliance, environmental monitoring, surface and underground operations, emergency management, quality assurance, security, facility maintenance, safety and health programs, including safety management program and oversight program enhancements, Resource Conservation and Recovery Act permit maintenance, project planning and control, DOE Order 413.3B requirements, mining and panel closure activities, decontamination of contaminated areas, purchase of mining equipment, procurement, finance and accounting, information system, oversight and interagency programs, ground control, maintenance of equipment, continuation of progress on for above-ground storage capability, which is currently planned to be a General Plant Project in accordance with preliminary analyses, repair of New Mexico roads used for the transportation of DOE shipments of transuranic waste to the

Waste Isolation Pilot Plant. The Waste Isolation Pilot Plant facility experiences a harsh environmental condition with salt dust, high heat and high humidity during the summer monsoonal season, which had led to advanced aging of the installed infrastructure and buildings which also includes General Plant Projects as well as direct maintenance and repair that are applicable to these areas.

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

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 January 19, 2016

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 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
$179,086	**$212,743**	**+$33,657**
• Maintain safety, personnel health fire and emergency management 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, project planning and control, procurement, finance and accounting, information services and oversight and interagency programs, etc. • 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. • Continued operational support on progress toward design and construction of Safety Significant Confinement Ventilation System and Exhaust Shaft projects. • Continue with Above Ground Storage Capability activities with preparation and completion of conceptual design and submittal of modification to Hazardous Waste Storage Facility Permit by	• Perform activities necessary for resumption of waste emplacement operations 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 waste emplacement operations for waste currently in the Waste Handling Building. • 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 regulatory agencies. • Support routine site maintenance items and	• Increase reflects incorporation of all recovery activities (formerly included in PBS WIPP Recovery Activities) (PBS CB-0082): Continuing activities include corrective actions and safety management program improvements, completion of mine stabilization, mine habitability activities in all underground areas, completion of decontamination of contaminated areas for restart of waste emplacement activities, continued purchase of mining equipment, and infrastructure improvements. • Support activities required for resumption of emplacement operations, and reflects funding for line-item capital projects, continued safety management/oversight programs, continued panel mining, maintenance and repair, continuation of progress on above-ground storage capability, which is currently planned to be a General Plant Project, and completion of repairs of New Mexico Roads used for the transportation of DOE shipments of transuranic waste to the Waste Isolation Pilot Plant, e.g., the North Access road to the Waste Isolation Pilot Plant. • Reflects the transfer of funding for GPP projects to a newly-established PBS, CB-0202.

June 2016.

- 15-D-411: Safety Significant Confinement Vent
  - Start Preliminary Design for Safety Significant Confinement Ventilation System capital asset project.
    - Achieve a 60 percent Design by the end of FY 2016.
    - Prepare a Critical Design-2A/Critical Design-3A for long lead procurements on fans and high efficiency particulate are filters for the Safety Significant Confinement Ventilation System by the end of FY 2016.
  - Earned Value Management System implementation for the Safety Significant Confinement Ventilation system and the Exhaust Shaft capital asset projects.
    - Achieve ANSI-748B Compliant System by July 2016.
    - Declaration of Readiness for Certification of Earned Value Management System by the end of FY 2016.
- 15-D-412: Exhaust Shaft
  - Start Preliminary Design Exhaust Shaft capital asset project.
    - Achieve a 60 percent Design by the end of FY 2016.
    - Achieve a Critical Design-2A/Critical Design-3A for long lead procurements on geotechnical surveys to support design and siting by the end of FY 2016.
  - Earned Value Management System implementation for Exhaust Shaft and the Safety Significant Confinement Ventilation System capital asset projects.
    - Achieve ANSI-748B Compliant System by July 2016.
    - Declaration of Readiness for Certification

activities.

- Continued progress toward design and construction of Safety Significant Confinement Ventilation System and Exhaust Shaft projects.

of Earned Value Management System by the end of FY 2016.

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. 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 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
$22,553	**$26,656**	**+$4,103**
• Provide acceptable knowledge and procedural support, mobile waste loading support at select generator sites and waste certification support	• Provide acceptable knowledge and procedural support, mobile waste loading support at select generator sites and waste	• Increase reflects increased characterization and certification activities at Idaho (transportation certification only) and Oak Ridge National

required for characterization 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), and the Oak Ridge National Laboratory.
- Continue corrective actions from Radiological Release Accident Investigation Board Report Phase II.

certification support required for characterization activities at one generator site.

- 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 remote-handled legacy transuranic waste disposition at Idaho National Laboratory (transportation certification only, where Idaho National Laboratory funds characterization certification), and Oak Ridge National Laboratory.

Laboratory.

WIPP Recovery Activities (PBS: CB-0082)

Overview

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

WIPP Recovery Activities (PBS: CB-0082)

Activities and Explanation of Changes

FY 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
$82,000	**0**	**-$82,000**
• 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 for restart of waste emplacement activities, continued purchase of mining equipment, and infrastructure improvements. • Completion of pre-start corrective actions from Accident Investigation Board reports and improvements to Safety Management Programs. • Completion of readiness activities for the Interim Ventilation system. • Completion of Documented Safety Analysis Revision 5 implementation. • Completion of preparations for readiness activities (training, procedures, etc.) for Commence Waste Emplacement milestone at 80 percent confidence level. • Continue with Radiological Release Accident Investigation Board Report Phase II corrective actions.	• No planned activities.	• Decrease reflects all activities now included in PBS Operate Waste Disposal Facility-WIPP (PBS-0080) to resume operations in first quarter FY 2017, including continued implementation of corrective actions and safety management program improvements, corrective actions from contractor management assessments, completion of Operational Readiness Reviews and commencement of waste emplacement operations. Recurring activities include mine stabilization, mining, mine habitability activities in all underground areas, continued decontamination of contaminated areas, and upgrades, purchases and maintenance and repair to continue infrastructure improvements.

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, Indian tribes, 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 CY 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.

FY 2017 funding supports waste shipments capabilities between generator sites and waste shipment capabilities to the Waste Isolation Pilot Plant, as well as shipping coordination between generator sites and the Waste Isolation Pilot Plant. Supports transportation corridor grants with stakeholders.

Transportation-WIPP (PBS: CB-0090)

Activities and Explanation of Changes

FY 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
$16,339	**$22,854**	**+$6,515**
• 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	• Provides transportation capabilities for up to five shipments per week 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:	• Increase reflects transportation activities required for return to operations at a rate of up to five shipments per week.

packages used: TRUPACT II's, Half PACTS, TRUPACT III's, and RH-72B's. • Preserves transportation readiness and capability for inter-site shipments.	TRUPACT II's, Half PACTS, TRUPACT III's, and RH-72B's. • Continue transportation readiness and capability for inter-site shipments.

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 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
$4,860	**$4,860**	**0**
• 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 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.	• No change.

General Plant Projects (PBS: CB-0202)

Overview

This PBS is within the Defense Environmental Cleanup appropriation.

The Recapitalization program, the key to arresting the declining state of EM infrastructure, prioritizes investments at a site level to improve the condition and extend the design life of the structures, capabilities, and/or systems. Investments are targeted to improve the reliability, sustainability, productivity, and efficiency of EM's general purpose infrastructure to reduce overall operating costs. They also reduce safety, environmental, and program risk associated with facilities and systems that are well beyond their design life. Investments are also made to manage risks in existing capabilities by prioritizing investments to upgrade and improve the reliability, efficiency, and capability of programmatic equipment and associated infrastructure to meet Environmental Management requirements. Infrastructure and Safety investments include costs for minor construction projects, capital equipment, and Other Project Costs for general purpose infrastructure Line Item construction projects. Infrastructure and Safety also funds some deactivation and disposal of excess infrastructure, resulting in surveillance and maintenance cost avoidance and reduced risk to workers, the public, the environment, and programs. In support of sustainability and energy performance goals, Recapitalization projects will include energy conservation measures to the greatest extent practicable.

The Capability Based Investments (CBI) are multi-year projects and strategies to sustain, enhance or replace capabilities through focused investments supporting the core programmatic requirements across the enterprise. These investments address needs beyond any single facility, activity, or system and are essential to achieving program mission objectives. Over the years, EM's capabilities have been degraded due to aging, broken or outdated equipment and supporting systems. To support ongoing and future cleanup activities, The Capability Based Investments invests in projects to reduce risk to the mission and ensure needed capabilities are available for future mission work. The Capability Based Investments provides a corollary to EM's line-item construction by funding smaller projects to enhance or sustain critical EM capabilities across the enterprise. The Capability Based Investments projects include: minor construction projects, Capital Equipment Projects, and Expense Funded Projects. The Capability Based Investments subprogram also funds Other Project Costs for EM-specific infrastructure Line Item construction projects.

General Plant Projects (PBS: CB-0202)

Activities and Explanation of Changes

FY 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
0	**$3,887**	**+$3,887**
• No activities, as this PBS was established in FY 2017.	• Initiate electrical distribution single point of failure/revitalization. • Initiate plant air recapitalization.	• The increase reflects the establishment of a new PBS for Recapitalization/GPP projects.

Carlsbad
Capital Summary ($K)

	Total	Prior Years	FY 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs FY 2016
Capital Operating Expenses Summary (including (Major Items of Equipment (MIE))							
Capital Equipment > $500K (including MIE)	0	0	0	0	0	0	0
Plant Projects (GPP and IGPP) (<$10M)	**0**	**0**	**494**	**494**	**0**	**3,887**	**+3,887**
Total, Capital Operating Expenses	**0**	**0**	**494**	**494**	**0**	**3,887**	**+3,887**
Capital Equipment > $500K (including MIE)	0	0	0	0	0	0	0
Total, Capital Equipment (including MIE)	**0**	**0**	**494**	**494**	**0**	**3,887**	**+3,887**
Plant Projects (GPP and IGPP) (Total Estimated Cost (TEC) <$10M)							
Waste Isolation Pilot Plant							
Building-452 Cooling System Installation	0	0	250	250	0	0	0
140/25T Remote-Handled Crane Upgrades	0	0	244	244	0	0	0
Electrical Distribution Single Point of Failure/Revitalization	0	0	0	0	0	3,250	+3,250
Plant Air Revitalization	0	0	0	0	0	637	+637
Total, Waste Isolation Pilot Plant	**0**	**0**	**494**	**494**	**0**	**3,887**	**+3,887**
Total, Plant Projects (GPP and IGPP) (Total Estimated (TEC) <$10M	**0**	**0**	**494**	**494**	**0**	**3,887**	**+3,887**
Total, Capital Summary	**0**	**0**	**494**	**494**	**0**	**3,887**	**+3,887**

Carlsbad
Construction Summary ($K)

	Total	Prior Years	FY 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs FY 2016
15-D-411, Safety Significant Confinement Ventilation System (WIPP) (CB-0080)							
Total Estimate Cost (TEC)	263,792	0	12,000	12,000	23,218	2,532	-20,686
Other Project Costs (OPC)	16,665	0	5,000	5,000	0	0	0
Total Project Cost (TPC) 15-D-411	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**
15-D-412, Exhaust Shaft (WIPP) (CB-0080)							
Total Estimate Cost (TEC)	111,539	0	4,000	4,000	7,500	2,533	-4,967
Other Project Costs (OPC)	6,556	1,000	1,000	1,000	0	0	0
Total Project Cost (TPC) 15-D-412	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**

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 Construction Project Data Sheet is an update of the FY 2016 Construction Project Data Sheet and does not include a start for the budget year. This project will design and construct a new safety significant confinement 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.

Effective February 1, 2016, an Acting Federal Project Director was assigned, due to the retirement of the Federal Project Director in December 2015. A vacancy announcement is being prepared for a permanent Federal Project Director.

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 2016	10/22/2014	3QFY 2015	1QFY 2016	2QFY 2018	2QFY 2018	TBD	N/A	TBD
FY 2017	CD-3A 4QFY 2016							

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 Alternative Selection and Cost Range
CD-2 – Approve 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

Project Cost History

(dollars in thousands)

	TEC, Design	TEC, Construction	TEC, Total	OPC Except D&D	OPC, D&D	OPC, Total	TPC
FY 2015	0	0	0	1,940	0	1,940	1,940
FY 2016	TBD	TBD	TBD	TBD	N/A	TBD	TBD
FY 2017	TBD	TBD	TBD	TBD	N/A	TBD	TBD

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 safety significant confinement 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 filters and fans, ductwork and dampers, 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.

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.*

5. Financial Schedule

(dollars in thousands)

	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
Design			
FY 2015	12,000	12,000	0
FY 2016	6,000	6,000	16,477
FY 2017	2,532	2,532	TBD
Outyears	TBD	TBD	TBD
Total, Design	TBD	TBD	TBD
Construction			
FY 2015	0	0	0
FY 2016	17,218	17,218	0
FY 2017	0	0	TBD
Outyears	TBD	TBD	TBD
Total, Construction	TBD	TBD	TBD
TEC			
FY 2015	12,000	12,000	0
FY 2016	23,218	23,218	16,477
FY 2017	2,532	2,532	TBD
Outyears	TBD	TBD	TBD
Total, TEC	TBD	TBD	TBD
Other Project Cost (OPC)			
OPC			
FY 2015	5,000	5,000	1,940
FY 2016	0	0	2,302
FY 2017	0	0	1,720
Outyears	TBD	TBD	TBD
Total, OPC	TBD	TBD	TBD
Total Project Cost (TPC)			
FY 2015	17,000	17,000	1,940
FY 2016	23,218	23,218	18,779
FY 2017	2,532	2,532	21,384
Outyears	TBD	TBD	TBD
Total, TPC	TBD	TBD	TBD

Note: Costs are projections for FY 2016, FY 2017, and outyears.

The costed dollars under in FY 2015 and 2016 went only to planning and design. Construction dollars will not be used prior to CD-2, except for long-lead procurement.

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	TDB	N/A	N/A
Other Project Cost (OPC)			
OPC except D&D	TBD	N/A	N/A
Conceptual Planning	TBD	N/A	N/A
Conceptual Design	TBD	N/A	N/A
Office of Project Management Oversight and Assessments 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	FY 2017	Outyears	Total
FY 2016	TEC	0	12,000	23,218	TBD	TBD	TBD
	OPC	0	5,000	0	TBD	TBD	TBD
	TPC	0	17,000	23,218	TBD	TBD	TBD
FY 2017	TEC	0	12,000	23,218	2,352	TBD	TBD
	OPC	0	5,000	0	0	TBD	TBD

	TPC	0	17,000	23,218	2,532	TBD	TBD

Note: Developed in FY 2014, subsequent to the FY 2015 President's Budget Request, to support request to Congress addressing emergent needs for the Waste Isolation Pilot Plant recovery. Outyears are TBD in FY 2016 Budget Request.

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
Maintenance & Repair	TBD	TBD	TBD	TBD
Total	TBD	TBD	TBD	TBD

9. D&D Information

This project will design and construct a new safety significant confinement ventilation system for the Waste Isolation Pilot Plant underground repository. 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.

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.

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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 Construction Project Data Sheet is an update of the FY 2016 Construction Project Data Sheet and does not include a start for the budget year. 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.

Effective February 1, 2016, an Acting Federal Project Director was assigned, due to the retirement of the Federal Project Director in December 2015. A vacancy announcement is being prepared for a permanent Federal Project Director.

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 2016	10/22/2014	3QFY 2015	1QFY 2016	1QFY 2018	1QFY 2018	TBD	N/A	TBD

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 Alternative Selection and Cost Range
CD-2 – Approve 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
FY 2014	0	0	0	0	N/A	0	0
FY 2015	0	0	0	0	N/A	0	0
FY 2016	TBD	TBD	TBD	TBD	N/A	TBD	TBD
FY 2017	TBD	TBD	TBD	TBD	N/A	TBD	TBD

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 safety significant confinement ventilation system capital asset project 15-D-411.

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.*

5. Financial Schedule

(dollars in thousands)

	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
Design			
FY 2015	4,000	4,000	0
FY 2016	7,500	7,500	8,882
FY 2017	2,533	2,533	2,618
Total, Design	14,033	14,033	14,033
Construction			
FY 2015	0	0	0
FY 2016	0	0	0
FY 2017	0	0	26,675
Outyears	TBD	TBD	TBD
Total, Construction	TBD	TBF	TBD
TEC			
FY 2015	4,000	4,000	0
FY 2016	7,500	7,500	8,882
FY 2017	2,533	2,533	29,293
Outyears	TBD	TBD	TBD

Total, TEC	TBD	TBD	TBD
OPC			
FY 2014	1,000	1,000	0
FY 2015	1,000	1,000	0
FY 2016	0	0	1,980
FY 2017	0	0	954
Outyears	TBD	TBD	TBD
Total, OPC	TBD	TBD	TBD
Total Project Cost (TPC)			
FY 2014	1,000	1,000	0
FY 2015	5,000	5,000	0
FY 2016	7,500	7,500	10,862
FY 2017	2,533	2,533	TBD
Outyears	TBD	TBD	TBD
Total, TPC	TBD	TBD	TBD

Note: Costs are projections for FY 2016, FY 2017, and outyears.
The costed dollars under in FY 2015 and 2016 went only to planning and design. Construction dollars will not be used prior to CD-2, except for long-lead procurement.

6. Details of Project Cost Estimate

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design			
Design	14,033	N/A	N/A
Contingency	0	N/A	N/A
Total, Design	14,033	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	TBD	N/A	N/A
Conceptual Planning	TBD	N/A	N/A
Conceptual Design	TBD	N/A	N/A
Office of Project Management Oversight and Assessments 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	FY 2017	Outyears	Total
FY 2016	TEC	0	4,000	7,500	TBD	TBD	TBD
	OPC	0	1,000	0	TBD	TBD	TBD
	TPC	0	5,000	7,500	TBD	TBD	TBD
FY 2017	TEC	0	4,000	7,500	2,533	TBD	TBD
	OPC	1,000	1,000	0	0	TBD	TBD
	TPC	1,000	5,000	7,500	2,533	TBD	TBD

Note: Developed in FY 2014, subsequent to the FY 2015 President's Budget Request, to support request to Congress addressing emergent needs for the Waste Isolation Pilot Plant recovery. Outyears are TBD in FY 2016 Budget Request.

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
Maintenance & Repair	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.

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 (used) 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 Site is estimated to be $23,664,000.

Highlights of the FY 2017 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 and the Remote-handled Waste Disposition Project. The remaining stored legacy waste presents technical and safety challenges, such as retrieval of contact-handled transuranic waste in their original deteriorated containers. This situation requires special repackaging and other precautionary procedures to protect workers.

The funding request also continues progress toward closing the tank farm, including continued treatment of sodium bearing waste. This treatment has taken several years longer than originally planned due to start-up challenges with the first-of-a-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 simulant runs during plant commissioning.)

This request will continue progress toward buried waste exhumation under the Accelerated Retrieval Project. Seven out of nine retrieval areas have been completed, and this funding request will complete exhumations at the eighth retrieval area, which is the largest retrieval area under the project.

This request also supports planning activities for the receipt of offsite spent (used) nuclear fuel from foreign and domestic research reactors after the treatment of sodium bearing waste and supports fuel transfers from wet to dry storage.

Within the FY 2017 Budget Request, EM supports the Departmental crosscut for Subsurface Engineering at $8,000,000, $3,000,000 of which is included at the Idaho site. As part of its commitment to the Subsurface Crosscut, EM will focus on developing a universal canister for deep borehole waste disposal. Activities will include design, fabrication and performance testing of waste canisters; assessment of packaging, transportation, and disposal requirements; and development of sensors, detectors, and devices for measurement and imaging. Various radioactive waste forms will also be evaluated for possible deep borehole disposal.

As part of its commitment to the Subsurface Crosscut, EM will focus on developing a universal canister for deep borehole waste disposal. Activities will include design, fabrication and performance testing of waste canisters; assessment of packaging, transportation, and disposal requirements; and development of sensors, detectors, and devices for measurement and imaging. Various radioactive waste forms will also be evaluated for possible deep borehole disposal."

The crosscut table below will remain the same.

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FY 2017 Crosscuts ($K)

	Subsurface Engineering
Idaho	**3,000**

FY 2016 - 2017 Key Milestones/Outlook

- (December 2015) Maintain a 2,000 cubic meter Running Average of Legacy Transuranic Waste Over Three Years Shipped Out of Idaho (Certified for Waste Isolation Pilot Plant Disposal and Compliantly Stored in Lieu of Shipment)
- (January 2016) Submit Final 2015 Five Year Review to Environmental Protection Agency-Federal Facility Agreement/Colorado
- (September 2016) Commence Treatment of Tank Waste (Radioactive Operation) in the Integrated Waste Treatment Unit
- (September 2017) 30 percent of Waste Treated Through the Integrated Waste Treatment Unit

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 2015 govern cleanup work at the Idaho 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 under the Comprehensive Environmental Response, Compensation, and Liability Act. 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 compliance issues including configuration of stored liquid waste in the Idaho Nuclear Technology and Engineering Center tank farm. This consent order was modified in 2015 to extend the milestone to complete closure of the remaining tank farm tanks to December 31, 2018.

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, treatment and offsite shipment of stored transuranic waste stored by December 31, 2018, treatment of high level waste by 2035 for offsite disposition, 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 resulted in a revised schedule which included interim milestones for treating the waste. In addition, the State suspended the receipt of offsite spent (used) 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 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 extending these contracts until selection is made to award new contracts for post-FY 2015 cleanup activities.

Strategic Management

The Idaho Site will identify disposal pathways and schedules for transuranic waste, liquid sodium bearing waste, tank farm closure, calcined waste, and spent (used) nuclear fuel to meet key Idaho Site 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), including availability of the Waste Isolation Pilot Plant, for legacy radioactive waste.
- Uncertainties in potential changes to the Waste Isolation Pilot Plant Waste Acceptance Criteria in response to ongoing Waste Isolation Pilot Plant recovery activities. The Idaho Site will continue to treat and certify 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. The certified backlog of transuranic waste currently consists of over 17,000 containers; potential changes to the Waste Isolation Pilot Plant Waste Acceptance Criteria could cause a significant impact due to the potential amount of rework that it could create.
- Start-up challenges and associated delays in treating sodium bearing waste at the first-of-a-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 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs FY 2016
Defense Environmental Cleanup					
Idaho National Laboratory					
Idaho Cleanup and Waste Disposition					
ID-0012B-D / SNF Stabilization and Disposition-2012 (Defense)	12,400	12,400	15,250	18,000	+2,750
ID-0013 / Solid Waste Stabilization and Disposition	181,800	182,020	202,348	185,502	-16,846
ID-0014B / Radioactive Liquid Tank Waste Stabilization and Disposition-2012	107,650	108,405	126,413	100,286	-26,127
ID-0030B / Soil and Water Remediation-2012	75,443	74,468	48,989	55,300	+6,311
Subtotal, Idaho Cleanup and Waste Disposition	**377,293**	**377,293**	**393,000**	**359,088**	**-33,912**
Idaho Community and Regulatory Support					
ID-0100 / Idaho Community and Regulatory Support	2,910	2,910	3,000	3,000	0
Total, Idaho National Laboratory	**380,203**	**380,203**	**396,000**	**362,088**	**-33,912**
Non-Defense Environmental Cleanup					
Small Sites					
Idaho National Laboratory					
ID-0012B-N / SNF Stabilization and Disposition-2012 (Non-Defense)	14,900	14,726	5,919	8,000	+2,081
ID-0012C-N / Fort Saint Vrain Facility	10,000	10,000	0	0	0
Subtotal, Idaho National Laboratory	**24,900**	**24,726**	**5,919**	**8,000**	**+2,081**
Total, Idaho	**405,103**	**404,929**	**401,919**	**370,088**	**-31,831**

Idaho Explanation of Major Changes ($K)

	FY 2017 vs FY 2016
Defense Environmental Cleanup	
Idaho National Laboratory	
Idaho Cleanup and Waste Disposition	
ID-0012B-D / SNF Stabilization and Disposition-2012 (Defense)	
• The increase reflects pricing and allocation adjustments.	+2,750
ID-0013 / Solid Waste Stabilization and Disposition	
• The funding decrease reflects progress in treatment, packaging, and certification of the Idaho Settlement Agreement remote-handled transuranic waste.	-16,846
ID-0014B / Radioactive Liquid Tank Waste Stabilization and Disposition-2012	
• The decrease reflects delays in processing waste at the Integrated Waste Treatment Unit.	-26,127
ID-0030B / Soil and Water Remediation-2012	
• The increase reflects activities to complete infrastructure for the Accelerated Retrieval Project IX enclosure.	+6,311
Non-Defense Environmental Cleanup	
Small Sites	
ID-0012B-N / SNF Stabilization and Disposition-2012 (Non-Defense)	
• The increase reflects increased operational requirements of facilities at Fort St. Vrain.	+2,081
Total, Idaho	**-31,831**

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 nuclear fuel and managing the receipt of off-site spent nuclear fuel shipments. EM currently manages and stores approximately 267 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 nuclear fuel, from FY 2005 through FY 2027.

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

Activities and Explanation of Changes

FY 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
$15,250	**$18,000**	**+$2,750**
• 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 receipt of foreign and domestic research reactor spent (used) nuclear fuel from off-site.	• Maintain all dry spent (used) nuclear fuel storage facilities. • Maintain the wet storage facility Chemical Processing Plant building-666 and dry storage at CPP-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 receipt of foreign and domestic research reactor spent (used) nuclear fuel from off-site.	• The increase reflects pricing and allocation adjustments.

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 dispositions stored transuranic waste, low-level waste, Resource Conservation and Recovery Act hazardous waste, and mixed low-level waste backlog in compliance with the Idaho Settlement Agreement requirements; 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 compliance with the Idaho Settlement Agreement, and contributes to reducing the footprint and completing cleanup of the site which also includes direct maintenance and repair that are applicable to these areas.

In FY 2017, processing of legacy transuranic waste will continue, resulting in certification of transuranic waste for the Waste Isolation Pilot Plant disposal and shipment of mixed low-level waste for disposal. The inventory of certified transuranic waste will be safely and compliantly stored at the Idaho Site pending the completion of recovery activities underway at the Waste Isolation Pilot Plant and resumption of shipments.

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

Activities and Explanation of Changes

FY 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
$202,348	**$185,502**	**-$16,846**
• 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	• Provide for site-wide environmental compliance. • Maintain and operate the Radioactive Waste Management Complex infrastructure outside the subsurface disposal area 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	• The funding decrease reflects progress in treatment, packaging, and certification of the Idaho Settlement Agreement remote-handled transuranic waste.

Technology and Engineering Center and contact-handled transuranic waste at the Advanced Mixed Waste Treatment Project in preparation for 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 a 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.
- Characterize, package, certify, and temporarily store exhumed waste on site pending the resumption of operations at and shipments to the Waste Isolation Pilot Plant.

repackaging and characterizing contact-handled transuranic waste at the Advanced Mixed Waste Treatment Project. Transuranic waste will be certified for the Waste Isolation Pilot Plant disposal, and mixed low-level waste will be dispositioned off-site.

- Process approximately 4,500 cubic meters of waste historically managed as transuranic waste for disposal at offsite facilities.
- Maintain capabilities to receive, repackage, and characterize contact-handled transuranic waste from other DOE sites and ship offsite within a 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.
- Characterize, package, certify, and temporarily store exhumed waste on site 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 the 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 which also includes direct maintenance and repair that are applicable to these areas.

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

Activities and Explanation of Changes

FY 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
$126,413	**$100,286**	**-$26,127**
• 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. • Continue start-up and commissioning	• 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	• The decrease reflects delays in processing waste at the Integrated Waste Treatment Unit.

activities.

- Construct additional storage facilities and containers when the Integrated Waste Treatment Unit becomes operational.

calcine.

- Plan for decontamination and decommissioning related to Materials and Fuel Complex Facilities and capping of the tank farm.

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 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
$48,989	**$55,300**	**+$6,311**
• 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. • 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	• 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. • Complete 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. • 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 of Decision for the Waste Area Group 3 (Operable	• The increase reflects activities to complete infrastructure for the Accelerated Retrieval Project IX enclosure.

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.

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.

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 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
$3,000	**$3,000**	**0**
• 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.	• 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.	• No change.

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 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 related fees for the Idaho Spent Fuel Facility that is designed and licensed, but not yet built.

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

Activities and Explanation of Changes

FY 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
$5,919	**$8,000**	**+$2,081**
• 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.	• Provide payments to the Nuclear Regulatory Commission to implement license and licensing-related activities related to the Fort St. Vrain, Three Mile Island-2, and Idaho Spent Fuel Facilities. • Provide security for Fort St. Vrain Spent (used) nuclear fuel facility. • 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. • Operate new upgraded security systems to meet NRC license conditions.	• The increase reflects increased operational requirements of facilities at Fort St. Vrain.

Idaho
Construction Projects Summary ($K)

	Total	Prior Years	FY 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs FY 2016
15-D-410, Ft. St. Vrain Security Upgrades (Idaho) (ID-0012B-N)							
Total Estimate Cost (TEC)	TBD	0	TBD	TBD	0	0	0
Other Project Costs (OPC)	TBD	0	TBD	TBD	0	0	0
Total Project Cost (TPC) 15-D-410	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**

Oak Ridge

Overview

Oak Ridge was placed on the National Priorities List in 1989; therefore, cleanup of the Oak Ridge Reservation is being conducted under the Comprehensive, Environmental, Response, Compensation and Liability Act of 1980.

The Oak Ridge Office of Environmental Management 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 Office of Environmental Management Program 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, Compensation and Liability Act. The remainder of the area has been shown not to be contaminated and no further Comprehensive, Environmental, Response, Compensation 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 cleaned up and 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, Compensation and Liability Act disposal facility supporting cleanup of all three sites) is also located at Y-12 National Security Complex.

The Office of Environmental Management Integrated Program Plan addresses the scope required to remediate the cold war nuclear weapons production legacy while protecting workers as well as 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 Oak Ridge is estimated to be $43,401,000 in FY 2017.

Highlights of the FY 2017 Budget Request

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

- Maintain Office of Environmental Management facilities in a safe, compliant and secure manner
- Operate Office of Environmental Management waste management facilities such as the on-site disposal facility and sanitary landfills at the Y-12 National Security Complex and wastewater and gaseous waste treatment operations at Oak Ridge National Laboratory
- Continue demolition of Building K-27 at the East Tennessee Technology Park
- Initiate demolition of the Centrifuge Facilities at the East Tennessee Technology Park
- Continue demolition activities for ancillary facilities at the East Tennessee Technology Park
- Continue direct shipment of Consolidated Edison Uranium Solidification Project material
- Continue contact- and remote-handled debris processing at the Transuranic Waste Processing Facility

- Continue design and critical decision reviews for the Outfall 200 Mercury Treatment Facility at the Y-12 National Security Complex
- Continue technology maturation and planning for the Transuranic Sludge Processing Project
- Continue support for mercury-related Technology Development, including characterization, remediation, monitoring, and modeling

The FY 2017 request includes funding for one line item construction project, the Outfall 200 Mercury Treatment Facility ($4,000,000).

- 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 $4,000,000 supports completion of the final design activities (Project Engineering and Design) and $1,100,000 supports other project costs funded within PBS OR-0041, Nuclear Facility Decontamination and Decommissioning-Y-12 operating account.

FY 2016 and FY 2017 Key Milestones/Outlook

- (December 2015) Complete final design for a test facility that will be operated to support design of the Transuranic Sludge Processing Facility
- (July 2016) Complete preliminary design for the new Outfall 200 Mercury Treatment Facility
- (April 2017) Initiate demolition of Building K-27 at the East Tennessee Technology Park
- (May 2017) Complete final design for the new Outfall 200 Mercury Treatment Facility

Regulatory Framework

Cleanup of the Oak Ridge Reservation is primarily governed by three regulatory agreements/compliance orders:

- 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 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 also established milestones for processing and shipment certification of transuranic wastes.
- 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 major contracts for performing/supporting environmental management cleanup at Oak Ridge include:

- The 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, design of the Outfall 200 Mercury Treatment Facility, 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.

- A new small business contract for operation of the Transuranic Waste Treatment Center was awarded in June 2015. While it is currently under protest, the planned contract consists of a three-year base period with one, two-year option

period. The incumbent contractor, Wastren Advantage, Inc., has been granted an extension while the protests are being addressed.

- The Isotek Systems LLC contract to complete the disposition of Uranium-233 material. A fixed-price option period for direct disposition currently runs through September 2015, and is being extended for approximately two years due to shipping delays. A small portion of another option for processing material has been authorized, but the remainder remains undefinitized.

- An Architect-Engineering Services contract with CH2M Hill Constructers, Inc., awarded in March 2015 for the design phase of the Transuranic Sludge Processing project. The contract scope includes technology maturation, including the construction and operations of a test facility, final design of the processing facility, and Title III support during the construction phase. Currently authorized work includes the design of the test facility, which is expected to be complete by December 31, 2015. The remaining contract line items are undefinitized.

Strategic Management

The Oak Ridge cleanup strategies consist of near-term goals to pursue: (1) complete cleanup and continue to reindustrialize the East Tennessee Technology Park; (2) complete direct disposition of the U-233 material and plan the follow-on processing campaign; (3) continue groundwater monitoring program for the reservation; (4) complete transuranic debris processing; (5) construct and operate the Transuranic Sludge Test Facility; (6) begin construction of the Outfall 200 Mercury Treatment Facility at Y-12; and (7) complete the design of a new disposal facility called the Environmental Management Disposal Facility.

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 entered 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.

Oak Ridge

Funding ($K)

	FY 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs FY 2016
Discretionary					
Defense Environmental Cleanup					
Oak Ridge					
OR Cleanup and Disposition					
OR-0013B / Solid Waste Stabilization and Disposition-2012	94,504	94,504	74,597	54,557	-20,040
OR-0011D / U233 Disposition Program	41,626	41,626	0	0	0
Subtotal, OR Cleanup and Disposition	**136,130**	**136,130**	**74,597**	**54,557**	**-20,040**
OR Nuclear Facility D&D					
OR-0041 / Nuclear Facility D&D-Y-12	44,066	42,697	75,458	48,442	-27,016
OR-0043 / Nuclear Facility D&D-East Tennessee Technology Park (Defense)	102	0	0	100	+100
OR-0042 / Nuclear Facility D&D-Oak Ridge National Laboratory	38,387	39,858	45,900	50,409	+4,509
Subtotal, OR Nuclear Facility D&D	**82,555**	**82,555**	**121,358**	**98,951**	**-22,407**
OR Reservation Community and Regulatory Support					
OR-0100 / Oak Ridge Reservation Community & Regulatory Support (Defense)	4,365	4,365	4,400	4,400	0
OR Technology Development and Deployment					
OR-TD-0100 / Technology Development Activities - Oak Ridge	0	0	2,800	3,000	+200
U233 Disposition Program					
OR-0011D / U233 Disposition Program	0	0	35,895	37,311	+1,416
Total, Oak Ridge	**223,050**	**223,050**	**239,050**	**198,219**	**-40,831**
Safeguards and Security					
OR-0020 / Safeguards and Security	16,382	16,382	11,828	15,000	+3,172
Total, Defense Environmental Cleanup	**239,432**	**239,432**	**250,878**	**213,219**	**-37,659**
Non-Defense Environmental Cleanup					
Small Sites					

	FY 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs FY 2016
Oak Ridge					
OR-0104 / Community and Regulatory (Non-Defense)	2,119	2,119	6,000	0	-6,000
Uranium Enrichment Decontamination and Decommissioning Fund					
Oak Ridge					
Oak Ridge					
OR-0040 / Nuclear Facility D&D-East Tennessee Technology Park (D&D Fund)	167,898	170,067	194,673	0	-194,673
Pension and Community and Regulatory Support					
Oak Ridge					
OR-0102 / East Tennessee Technology Park Contract/Post-Closure Liabilities/Administration	21,693	19,524	16,856	0	-16,856
Total, Uranium Enrichment Decontamination and Decommissioning Fund	**189,591**	**189,591**	**211,529**	**0**	**-211,529**
Mandatory					
United States Enrichment Corporation Fund					
Oak Ridge					
Oak Ridge					
OR-0040 / Nuclear Facility D&D-East Tennessee Technology Park (D&D Fund)	0	0	0	159,416	+159,416
Pension and Community and Regulatory Support					
Oak Ridge					
OR-0102 / East Tennessee Technology Park Contract/Post-Closure Liabilities/Administration	0	0	0	18,772	+18,772
Total, United States Enrichment Corporation Fund	**0**	**0**	**0**	**178,188**	**+178,188**
Total, Oak Ridge	**431,142**	**431,142**	**468,407**	**391,407**	**-77,000**

Oak Ridge Explanation of Major Changes ($K)

	FY 2017 vs FY 2016
Defense Environmental Cleanup	
Oak Ridge	
OR Cleanup and Disposition	
OR-0013B / Solid Waste Stabilization and Disposition-2012	
• Decrease reflects reduction in transfers of transuranic waste; processing and certification of Low-Level Waste/Mixed Low-Level Waste and planning activities required for processing and disposal of transuranic sludge.	-20,040
OR Nuclear Facility D&D	
OR-0041 / Nuclear Facility D&D-Y-12	
• Decrease reflects completing the site characterization associated with the preliminary design activities for the Mercury Treatment Facility Project and a reduction in activities associated with surveillance and maintenance of aging excess facilities at Y-12.	-27,016
OR-0042 / Nuclear Facility D&D-Oak Ridge National Laboratory	
• Increase supports upgrades to critical infrastructure for Environmental Management-owned facilities at the Oak Ridge National Laboratory.	+4,509
OR-0043 / Nuclear Facility D&D-East Tennessee Technology Park (Defense)	
• No significant change.	+100
OR Technology Development and Deployment	
OR-TD-0100 / Technology Development Activities - Oak Ridge	
• No significant change.	+200
U233 Disposition Program	
OR-0011D / U233 Disposition Program	
• Increase reflects additional funding requirements to continue planned progress toward completion of the Uranium-233 direct disposition campaign.	+1,416
Safeguards and Security	
OR-0020 / Safeguards and Security	
• Increase maintains the security posture.	+3,172

	FY 2017 vs FY 2016
Non-Defense Environmental Cleanup	
Small Sites	
OR-0104 / Community and Regulatory (Non-Defense)	
• Decrease reflects focus on cleanup mission.	-6,000
Uranium Enrichment Decontamination and Decommissioning Fund	
OR-0040 / Nuclear Facility D&D-East Tennessee Technology Park (D&D Fund)	
• Reflects proposal to spend United States Enrichment Corporation Fund balances on these activities.	-194,673
Pension and Community and Regulatory Support	
OR-0102 / East Tennessee Technology Park Contract/Post-Closure Liabilities/Administration	
• Reflects proposal to spend United States Enrichment Corporation Fund balances on these activities.	-16,856
United States Enrichment Corporation Fund	
OR-0040 / Nuclear Facility D&D-East Tennessee Technology Park (D&D Fund)	
• Reflects proposal to spend United States Enrichment Corporation Fund balances on these activities. Net decrease of $35,257,000 reflects planned progress in completing decontamination and decommissioning of remaining facilities.	+159,416
Pension and Community and Regulatory Support	
OR-0102 / East Tennessee Technology Park Contract/Post-Closure Liabilities/Administration	
• Reflects proposal to spend United States Enrichment Corporation Fund balances on these activities. Net increase of $1,916,000 supports anticipated increases in post-retirement life and medical cost.	+18,772
Total, Oak Ridge	**-77,000**

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

Overview

This PBS is within the Defense Environmental Cleanup appropriation.

This PBS funds the storage 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. 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 resumption of waste emplacement operations and receipt of off-site shipments at the Waste Isolation Pilot Plant.

In addition, this PBS includes one line item construction project; the Sludge Processing Facility Buildouts. This 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 2017, requested Other Project Cost funding will continue technology maturation activities to support future regulatory commitments for facility design and construction and sludge processing.

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

Activities and Explanation of Changes

FY 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
$74,597	**$54,557**	**-$20,040**
• 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 • Continue processing and certification of legacy contact-handled and remote-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	• 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. • Continue processing and certification of legacy debris. • Return processed and certified transuranic debris	• Decrease reflects reduction in transfers of transuranic waste; processing and certification of Low-Level Waste/Mixed Low-Level Waste and planning activities required for processing and disposal of transuranic sludge.

year funding.
- Continue characterization and disposal of low-level waste/mixed low-level waste stored at the Oak Ridge National Laboratory.

waste to storage pending reopening of the Waste Isolation Pilot Plant.
- Treat and ship mixed low-level waste to off-site disposal.
- Continue planning and technology maturation activities required to design and construct the facilities to process transuranic sludge.

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 the 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, Compensation 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 necessary 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 for the removal of mercury. In FY 2017, the final design of the Outfall 200 Mercury Treatment Facility will be issued to support contract acquisition and start of construction.

The scope of this PBS also includes direct maintenance and repair that are applicable to these areas.

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

Activities and Explanation of Changes

FY 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
$75,458	**$48,442**	**-$27,016**
• Comply with all requirements for Environmental Management Waste Management Facility operations; groundwater and surface water monitoring; surveillance and maintenance of	• Comply with legal agreements between the Department, United States Environmental Protection Agency, Region 4, and the State of Tennessee; environmental laws and	• Decrease reflects completing the site characterization associated with the preliminary design activities for the Mercury Treatment Facility Project and a reduction in activities

waste sites; and preparation of an annual remediation effectiveness report.
- Perform surveillance and maintenance for EM owned facilities at Y-12.
- Operate Environmental Management Waste Management Facility and other Oak Ridge Reservation Landfills to receive wastes from demolition and remedial activities.
- 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 and DOE Order 435.1 documentation for the newly proposed On-Site Disposal Facility.
- Pursue activities to reduce near term risks associated with aging excess facilities at Y-12.

regulations; and DOE Order requirements for Environmental Management Waste Management Facility operations; groundwater and surface water monitoring; surveillance and maintenance of waste sites and inactive facilities; and preparation of an annual remediation effectiveness report.
- Continue surveillance and maintenance for EM owned facilities at Y-12.
- Operate the 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.
- Continue planning design and preparation of regulatory documentation and Critical Decision reviews for the Outfall 200 Mercury Treatment Facility.
- Continue monitoring of off-site groundwater in accordance with regulatory agreements by sampling wells and surface water.
- Continue preparation of Comprehensive Environmental Response, Compensation, and Liability Act documentation and other planning for the new Comprehensive Environmental Response, Compensation, and Liability Act On-Site Disposal Facility.

associated with surveillance and maintenance of aging excess facilities at Y-12.

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. The scope includes maintenance and monitoring of 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 Compensation and Liability Act Records of Decision. The scope of this PBS also includes direct maintenance and repair that are applicable to these areas.

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

Activities and Explanation of Changes

FY 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
$45,900	**$50,409**	**+$4,509**
• 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 and plan to initiate upgrades to liquid, gaseous and process waste operations systems' infrastructure to support compliance and extension of the design life. • Perform surveillance and maintenance required by the Melton Valley Comprehensive Environmental Response Compensation and	• 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.	• Increase supports upgrades to critical infrastructure for Environmental Management-owned facilities at the Oak Ridge National Laboratory.

Liability Act Record of Decision and for inactive facilities and reactors at the Oak Ridge National Laboratory.

- Conduct infrastructure upgrades to the Liquid and Gaseous Waste Operations facilities to ensure mission critical activities continue at Oak Ridge Environmental Management, the Office of Science and 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 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 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
0	**$100**	**+$100**
• No FY 2016 funding.	• Perform surveillance and maintenance of the Centrifuge Facilities complex, to maintain it in a safe and secure condition in accordance with DOE Orders.	▪ 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 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
$4,400	**$4,400**	**0**
• 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.	• 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.	• No change.

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 technologies, develop cost-effective alternative technologies, and improve and/or provide the next-generation of technologies for insertion into program activities. EM is enhancing its technology development and deployment efforts with a coordinated two-prong approach in which 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 is a regulatory concern and mercury migration into and through other media such as groundwater, 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 are 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 sources and transport through environmental media and the watershed; 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 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
$2,800	**$3,000**	**+$200**
• Continue technology development work in the areas of Soil and Groundwater Source Control, Water Chemistry and Sediment Manipulation, and Ecological	• Plan, develop, evaluate, and demonstrate mercury characterization, remediation and mitigation approaches, and technologies focusing on the Lower East Fork Poplar Creek.	• No significant change.

Manipulation. • Design and begin construction of a field research station.	• Begin comparative testing and demonstration of technologies to solidify/stabilize or otherwise treat mercury soil/debris, to be performed in conjunction with the Applied Field Research Initiative for Remediation of Mercury and Industrial Contaminants at Oak Ridge National Laboratory. • Begin assessments of technologies for debris sorting, decontamination, and macroencapsulation.

U233 Disposition Program (PBS: OR-0011D)

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. Current operations are focused on the disposition of the Consolidated Edison Uranium Solidification Project waste and preparation activities for the future downblending, solidification, and disposal operations in Building 2026 for the remainder of the material.

U233 Disposition Program (PBS: OR-0011D)

Activities and Explanation of Changes

FY 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
$35,895	**$37,311**	**+$1,416**
• 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. • Perform modifications and upgrades to the 2026 Building to allow for future dissolution and down-blending of Uranium-233 materials.	• 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.	• Increase reflects additional funding requirements to continue planned progress toward completion of the Uranium-233 direct disposition campaign.

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 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
$11,828	**$15,000**	**+$3,172**
• 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.	• 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.	• Increase maintains the security posture.

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 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
$6,000	**0**	**-$6,000**
• Complete final design of the K-25 History Center, Equipment Building/Viewing tower. • Initiate procurement activities for construction of the design components. • Complete Historic American Engineering Records for K-1037 and K-25 Buildings.	• No activities in FY 2017.	• Decrease reflects focus on cleanup mission.

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

Overview

This PBS was previously funded within the Uranium Enrichment Decontamination and Decommissioning Fund appropriation in FY 2016 and the mandatory United States Enrichment Corporation Fund in FY 2017.

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 building K-27 will continue in FY 2017. Demolition of this facility along with the previously demolished K-25 will result in a large footprint reduction. The 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, Compensation 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 scope of this PBS also includes direct maintenance and repair that are applicable to these areas.

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 2016 Enacted	FY 2017 Proposal	Explanation of Changes FY 2017 vs FY 2016
$194,673	**$159,416**	**-$35,257**
• Perform surveillance and maintenance activities to maintain the East Tennessee Technology Park (including Centrifuge Facilities complex) in a safe and secure condition. • Conduct base operations activities at the East Tennessee Technology Park to provide infrastructure and support to cleanup projects. • Initiate and continue progress toward completion	• 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 demolition and waste disposal activities. • Perform decontamination and decommissioning	• Reflects proposal to spend United States Enrichment Corporation Fund balances on these activities. Net decrease of $35,257,000 reflects planned progress in completing decontamination and decommissioning of remaining facilities.

of demolition of the K-27 Building.
- Perform pre-demolition/demolition activities for the K-1037 Building, K-1200 Complex (Centrifuge Buildings) and other small facilities.
- Begin demolition of Poplar Creek and Balance of Facilities at the East Tennessee Technology Park.
-

activities on remaining facilities.

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

Overview

This PBS was previously funded within the Uranium Enrichment Decontamination and Decommissioning Fund appropriation in FY 2016 and the mandatory United States Enrichment Corporation Fund in FY 2017.

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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 2016 Enacted	FY 2017 Proposal	Explanation of Changes FY 2017 vs FY 2016
$16,856	**$18,772**	**+$1,916**
• Continue funding of contractor liabilities associated with post-retirement life, medical benefits and pensions.	• Continue funding of contractor liabilities associated with post-retirement life, medical benefits and pensions.	• Reflects proposal to spend United States Enrichment Corporation Fund balances on these activities. Net increase of $1,916,000 supports anticipated increases in post-retirement life and medical cost.

Oak Ridge
Construction Projects Summary ($K)

	Total	Prior Years	FY 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs FY 2016
14-D-403, Outfall 200 Mercury Treatment Facility, OR (OR-0041)							
Total Estimate Cost (TEC)	220,500	4,608	9,400	9,400	9,400	4,000	-5,400
Other Project Costs (OPC)	23,500	10,000	2,800	2,800	1,000	1,100	+100
Total Project Cost (TPC) 15-D-403	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**
Sludge Build Out, OR (OR-0013B)							
Oak Ridge Solid Waste (OR-0013B)							
Total Estimate Cost (TEC)	TBD	0	4,200	4,200	0	0	0
Other Project Costs (OPC)	TBD	15,605	0	0	0	0	0
Subtotal, Sludge Build Out, OR-0013B	TBD	TBD	TBD	TBD	TBD	TBD	TBD
15-D-405, Sludge Build Out, OR (OR-0013B)							
Total Estimate Cost (TEC)	TBD	0	0	0	0	0	0
Other Project Costs (OPC)	TBD	0	0	0	0	0	0
Subtotal, 15-D-405, Sludge Build Out, OR (OR-0013B)	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Total Project Cost (TPC) 15-D-405	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**

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 Construction Project Data Sheet is an update of the FY 2016 Construction Project Data Sheet and does not include a new start for the budget year.

Summary:
The most recent DOE O 413.3B approved Critical Decision is Critical Decision-1 that was approved by the Project Management Executive on May 6, 2015 with a preliminary cost range of $120 Million (M) - $244M and a Critical Decision-4 range of 2Q FY2021 to 3Q FY 2024.

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 III.

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, 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 FY 2017 will be used to continue development of the final 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
FY 2017	3/17/2014[a]	10/13/2014	5/6/2015	TBD	TBD	TBD	N/A	TBD

[a] Critical Decision-0 approval was originally 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.

Note: The schedule dates are only estimates and are consistent with the high end of the schedule range.

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
FY 2017	34,500	TBD	TBD	TBD	0	TBD	TBD

Note: The numbers are only estimates and are consistent with the high end of the cost range.

4. Project Scope and Justification

Scope

The scope of this project is to design and construct a Mercury Treatment Facility for Outfall 200 flow 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 utilities, foundations, parking, and fencing. The Outfall 200 Mercury Treatment Facility will be constructed 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 Critical Decision 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 for Outfall 200 flow 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	1,184
FY 2016	N/A	N/A	11,400
FY 2017	N/A	N/A	5,000
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 2014	4,608	0	0
FY 2015	9,400	14,008	1,184
FY 2016	9,400	6,800	11,400
FY 2017	4,000	4,000	5,000
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	4,400	4,400	3,003
FY 2015	2,800	2,800	2,583
FY 2016	1,000	500	1,617
FY 2017	1,100	1,100	1,500
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	4,400	4,400	3,003
FY 2015	2,800	2,800	2,584
FY 2016	1,000	500	1,616
FY 2017	1,100	1,100	1,500
Outyears	TBD	TBD	TBD
Total, OPC	23,500	23,500	23,500
Total Project Cost (TPC)			
FY 2012	2,300	2,300	2,300[a]
FY 2013	3,300	3,300	3,300[b]

	(dollars in thousands)		
	Appropriations	Obligations	Costs
FY 2014	9,008	4,400	3,003
FY 2015	12,200	16,808	3,767
FY 2016	10,400	7,300	13,017
FY 2017	5,100	5,100	6,500
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	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design			
Design	20,300	21,600	N/A
Title III	9,350	10,200	N/A
Contingency	4,950	2,700	N/A
Total Design	34,500	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	7,300	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 Years	FY 2016	FY 2017	Outyears	Total
FY 2015 Request	TEC	14,000	TBD	TBD	TBD	TBD
	OPC	13,600	TBD	TBD	TBD	TBD
	TPC	27,000	TBD	TBD	TBD	TBD
FY 2016 Request	TEC	14,008	6,800	TBD	TBD	TBD
	OPC	13,600	500	TBD	TBD	TBD
	TPC	27,608	7,300	TBD	TBD	TBD
FY 2017 Request	TEC	14,008	9,400	4,000	TBD	TBD
	OPC	12,800	1,000	1,100	TBD	TBD
	TPC	26,808	10,400	5,100	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
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[a]	6,000	180,000[b]	180,000
Utilities	0	0	0	0
Maintenance	0	0	0	0
Total, Operations & Maintenance	6,000[a]	6,000	180,000[b]	180,000

[a] Annual Costs have been escalated to FY 2024 dollars to reflect estimated cost as of the start of operations.
[b] Life Cycle Costs have not been escalated over the estimated 30-year period of operations.

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 was developed for the project to support Critical Decision-1 approval.

Paducah

Overview

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

To complete cleanup, Paducah will maintain a safe, secure, and compliant posture; support high priority groundwater remediation; deactivate and decommission excess facilities; and disposition mixed and low-level waste.

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

Direct maintenance and repair of the remediation related infrastructure at the Paducah Gaseous Diffusion Plant is estimated to be $24,547,000 in FY 2017.

Highlights of the FY 2017 Budget Request

This FY 2017 budget proposal supports activities to continue the environmental remediation and further stabilizes the gaseous diffusion plant. The stabilization activities include uranium deposit removal, facility modifications, surveillance and maintenance, and activities to remove hazardous materials.

This budget request also supports the safe operation of the Depleted Uranium Hexafluoride Conversion facility.

The FY 2017 proposal includes $2,437,000 for design of the Paducah potential On-Site Waste Disposal Facility project, if the on-site waste disposal facility is selected as the appropriate remedy. The mission of this project will be to design and construct an engineered landfill to provide on-site disposal capacity for anticipated demolition debris and environmental remediation waste from the Paducah cleanup projects.

FY 2016 and FY 2017 Key Milestones/Outlook

- (December 2015) Issue C-400 Phase IIb Treatability Study Report to Regulators (D1)
- (March 2016) Issue Southwest Plume Sources Solid Waste Management Unit 1 Remedial Action Completion Report to Regulators (D1)
- (July 2016) Issue Burial Grounds Solid Waste Management Unit 4 Remedial Investigation Report Addendum to Regulators (D1)
- (August 2016) Issue Onsite Waste Disposal Facility Record of Decision to Regulators (D1)
- (November 2016) Issue Onsite Waste Disposal Facility Remedial Design Work Plan to Regulators (D1)
- (December 2016) Issue C-400 Phase IIb Revised ROD Amendment to Regulators (D1)
- (January 2017) Issue C-400 Phase IIb Remedial Design Work Plan to Regulators (D1)
- (January 2017) Issue Burial Grounds Solid Waste Management Units 5 and 6 Remedial Design Report to Regulators (D1)
- (February 2017) Issue Burial Grounds Solid Waste Management Unit 5 and 6 Remedial Action Work Plan to Regulators (D1)
- (March 2017) Issue Burial Grounds Solid Waste Management Unit 4 Feasibility Study to Regulators (D1)

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, LLC contract for conversion and disposition of depleted uranium hexafluoride, covering the period from 1/03/2011 - 1/1/2016. Competitive procurement for a replacement contract is ongoing.
- Fluor Federal Services for deactivation of the Gaseous Diffusion Plant and legacy soil and groundwater remediation covering a period from 7/22/2014 – 7/22/2017.
- Swift and Staley contract for site support services covering the period 12/01/2015 – 11/30/2018. The contractor is a small business.

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. Deactivation and facility optimization activities are ongoing with future decommissioning plans being developed. In addition, Paducah is operating 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.

Paducah Project Office

Funding ($K)

	FY 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs FY 2016
Discretionary					
Defense Environmental Cleanup					
Safeguards and Security					
PA-0020 / Safeguards and Security	7,297	7,297	13,216	14,049	+833
Non-Defense Environmental Cleanup					
Gaseous Diffusion Plants					
Paducah Gaseous Diffusion Plant					
PA-0011 / NM Stabilization and Disposition-Paducah Uranium Facilities Management	1,369	4,369	1,369	1,369	0
PA-0011X / NM Stabilization and Disposition-Depleted Uranium Hexafluoride Conversion	51,517	48,517	51,517	48,976	-2,541
Subtotal, Paducah Gaseous Diffusion Plant	**52,886**	**52,886**	**52,886**	**50,345**	**-2,541**
Uranium Enrichment Decontamination and Decommissioning Fund					
Paducah					
Paducah Gaseous Diffusion Plant					
PA-0040 / Nuclear Facility D&D-Paducah	207,215	207,215	199,925	0	-199,925
Pension and Community and Regulatory Support					
Paducah Gaseous Diffusion Plant					
PA-0103 / Paducah Community and Regulatory Support	1,725	1,725	1,725	0	-1,725
PA-0102 / Paducah Contract/Post-Closure Liabilities/Administration	650	650	650	0	-650
Subtotal, Paducah Gaseous Diffusion Plant	**2,375**	**2,375**	**2,375**	**0**	**-2,375**
Total, Uranium Enrichment Decontamination and Decommissioning Fund	**209,590**	**209,590**	**202,300**	**0**	**-202,300**
Mandatory					
United States Enrichment Corporation Fund					
Paducah					
Paducah Gaseous Diffusion Plant					
PA-0040 / Nuclear Facility D&D-Paducah	0	0	0	205,530	+205,530

	FY 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs FY 2016
Pension and Community and Regulatory Support					
Paducah Gaseous Diffusion Plant					
PA-0103 / Paducah Community and Regulatory Support	0	0	0	1,725	+1,725
PA-0102 / Paducah Contract/Post-Closure Liabilities/Administration	0	0	0	661	+661
Subtotal, Paducah Gaseous Diffusion Plant	**0**	**0**	**0**	**2,386**	**+2,286**
Total, United States Enrichment Corporation Fund	**0**	**0**	**0**	**207,916**	**+207,916**
Total, Paducah	**269,773**	**269,773**	**268,402**	**272,310**	**+3,908**

Paducah Project Office Explanation of Major Changes ($K)

	FY 2017 vs FY 2016
Defense Environmental Cleanup	
Safeguards and Security	
PA-0020 / Safeguards and Security	
• Increased funding maintains the security posture.	+833
Non-Defense Environmental Cleanup	
Gaseous Diffusion Plants	
Paducah Gaseous Diffusion Plant	
PA-0011X / NM Stabilization and Disposition-Depleted Uranium Hexafluoride Conversion	
• Decrease represents use of prior-year carryover to complete facility upgrades during shutdown of plant.	-2,541
Uranium Enrichment Decontamination and Decommissioning Fund	
Paducah	
PA-0040 / Nuclear Facility D&D-Paducah	
• Reflects proposal to spend United States Enrichment Corporation Fund balances on these activities.	-199,925
Pension and Community and Regulatory Support	
PA-0102 / Paducah Contract/Post-Closure Liabilities/Administration	
• Reflects proposal to spend Unites States Enrichment Corporation Fund balances on these activities.	-650
PA-0103 / Paducah Community and Regulatory Support	
• Reflects proposal to spend Unites States Enrichment Corporation Fund balances on these activities.	-1,725
United States Enrichment Corporation Fund	
Paducah	
PA-0040 / Nuclear Facility D&D-Paducah	
• Reflects proposal to spend United States Enrichment Corporation Fund balances on these activities. Net increase of $5,605,000 supports design of the potential Paducah On-Site Waste Disposal Facility Project, if selected as the appropriate remedy for waste disposal and supports the C-400 Phase IIb activities.	+205,530
Pension and Community and Regulatory Support	
PA-0102 / Paducah Contract/Post-Closure Liabilities/Administration	
• Reflects proposal to spend Unites States Enrichment Corporation Fund balances on these activities.	+661
PA-0103 / Paducah Community and Regulatory Support	

	FY 2017 vs FY 2016
• Reflects proposal to spend Unites States Enrichment Corporation Fund balances on these activities with a net $0 change	+1,725
Total, Paducah	**+3,908**

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, classified uranium enrichment technology, equipment, personnel, and facilities. This program includes maintaining a security protective force to ensure safeguard of nuclear materials, classified technology/information, personnel, and compliance with cyber security requirements necessary to protect DOE information. The safeguards and security program also supports the Paducah remediation and cleanup programs.

DOE is responsible for providing security operations necessary to protect the respective site's national security interests, personnel, 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, personnel, 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 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
$13,216	**$14,049**	**+$833**
• 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.	• 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.	• Increased funding maintains the security posture.

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 ft^2 and contain approximately 16,000 collection systems.

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

Activities and Explanation of Changes

FY 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
$1,369	**$1,369**	**0**
• 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. • Complete disposition of polychlorinated biphenyl transformer oil from electrical transformers in process buildings.	• 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.	• 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. The scope of this PBS also includes direct maintenance and repair that are applicable to these areas.

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 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
$51,517	**$48,976**	**-$2,541**
• Continue steady state operations of the DUF6 conversion facility with emphasis on plant availability and maintain optimum throughput including emergent facility upgrades to support operations. • 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. • Award new five year operations contract.	• Continue steady state operations of the DUF6 conversion facility with emphasis on plant availability and achieving optimal 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, stable condition.	• Decrease represents use of prior-year carryover to complete facility upgrades during shutdown of plant.

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

Overview

This PBS is within the Uranium Enrichment Decontamination and Decommissioning Fund appropriation in FY 2016 and the mandatory United States Enrichment Corporation Fund proposal in FY 2017.

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, remediation of contaminated soils and burial grounds, and decontamination and decommissioning of inactive or excess facilities, including the gaseous diffusion plant facilities that were returned in FY 2015. The scope also includes landfill operations and maintenance activities. Compliance requirements at the Paducah site are subject to negotiations with the regulators.

This FY 2017 budget proposal supports activities to further stabilize the gaseous diffusion plant to achieve a safe configuration, including facility modifications, surveillance and maintenance activities, 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 is 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 2017 proposal supports the continued design for the potential On-Site Waste Disposal Facility. This project is being conducted in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act process. The scope of this PBS also includes direct maintenance and repair that are applicable to these areas.

Completion of these activities is 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 2016 Enacted	FY 2017 Proposal	Explanation of Changes FY 2017 vs FY 2016
$199,925	**$205,530**	**+$5,605**
• Continue optimization of the Northeast Plume Pump and Treat. • Complete sampling activities at one historical burial grounds (Solid Waste Management Unit 4) and prepare Remedial Investigation Report Addendum. • Continue C-400 Trichloroethylene Source Area	• 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.	• Reflects proposal to spend United States Enrichment Corporation Fund balances on these activities. Net increase of $5,605,000 supports design of the potential Paducah On-Site Waste Disposal Facility Project, if selected as the appropriate remedy for waste disposal and supports the C-400 Phase IIb activities.

Phase IIb regulatory documents.
- Conduct management and infrastructure surveillance and maintenance.
- Continue existing landfill operations and maintenance.
- Complete Oil Landfarm (Solid Waste Management Unit 1) Deep Soil Mixing remedial action and submit Remedial Action Completion Report.
- Complete remedial investigation/feasibility report and develop proposed plan of Waste Disposal Alternatives.
- 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.
- Complete Operational Readiness Review for initiation of deposit removal activities in buildings C-337 and C-337-A.
- Initiate demonstration of cell treatment operations proof of principle in C-337 process building.
- Perform additional gaseous diffusion plant facility stabilization and system isolation activities.
- Complete fabrication and testing of the portable cell treatment and instrument carts.
- Complete facility modifications in buildings C-335 and C-310 in support of deposit removal.
- Complete Freon removal in C-337 Process Building and initiate disposal.
- Complete lube oil removal in process buildings.
- Complete resurfacing of remaining process buildings' roofs (approx. 2.2 million ft2) and roof drain repair.
- Continue uranium deposit removal in the C-337 process building and initiate deposit removal in C-333 process building.
- Initiate and continue the development of Comprehensive Environmental Response, Compensation and Liability Act documents including the Proposed Plan, Record of Decision amendment, Remedial Design Work Plan, and Remedial Design for C-400 Trichloroethylene Source Area Phase IIb.
- Continue design activities associated with the first cell of the On-Site Waste Disposal Facility.
- Manage and disposition waste generated in accordance with applicable laws, regulations and DOE Orders.
- Continue regulatory document submittals related to one unlined burial ground.
- Conduct management and infrastructure surveillance and maintenance.
- Continue existing landfill operations and maintenance.
- Continue pump-and-treat operations and environmental surveillance, monitoring, and reporting.

- Complete decommissioning and demolition of 11 inactive facilities.
- Design new McCaw Road Bridge to improve emergency response; perform long-standing fire impairment repairs.

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

Overview

This PBS can be found within the Uranium Enrichment Decontamination and Decommissioning fund appropriation in FY 2016 and the mandatory United States Enrichment Corporation Fund proposal in FY 2017.

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 2016 Enacted	FY 2017 Proposal	Explanation of Changes FY 2017 vs FY 2016
$650	**$661**	**+$11**
• 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.	• 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.	• Reflects proposal to spend Unites States Enrichment Corporation Fund balances on these activities.

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

Overview

This PBS can be found within the Uranium Enrichment Decontamination and Decommissioning Fund appropriation in FY 2016 and the mandatory United States Enrichment Corporation Fund proposal in FY 2017.

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 2016 Enacted	FY 2017 Proposal	Explanation of Changes FY 2017 vs FY 2016
$1,725	**$1,725**	**0**
• 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 Federal Facility Agreement and Agreement-In-Principle grants.	• 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 Federal Facility Agreement and Agreement-In-Principle grants.	• Reflects proposal to spend Unites States Enrichment Corporation Fund balances on these activities with a net $0 change.

Paducah
Construction Projects Summary ($K)

	Total	Prior Years	FY 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs FY 2016
15-U-407, On Site Waste Disposal Facility (PA-0040)							
Total Estimate Cost (TEC)	303,400	0	8,486	8,486	0	2,437	+2,437
Other Project Costs (OPC)	8,100	0	0	0	0	0	0
Total Project Cost (TPC) 15-U-407	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**
16-U-401, Solid Waste Management Unit 5 & 6 (PA-0040)							
Total Estimate Cost (TEC)	TBD	0	0	0	1,196	0	-1,196
Other Project Costs (OPC)	TBD	0	960	960	693	0	-693
Total Project Cost (TPC) 16-U-401	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**

15-U-407
On-Site Waste Disposal Facility- Cell 1 Design and Construction
Paducah, Kentucky
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 Congressional Construction Project Data Sheet and does not include a new start for the budget year. There was no funding requested in the FY 2016 President's Budget or corresponding Construction Project Data Sheet. No scope changes have been made to this project.

The project schedule has been revised due to ongoing regulatory discussions necessary to complete documentation supporting the Record of Decision approval. The delay changed the Critical Decision-4 date from FY 2020 to FY 2022 and the rough order of magnitude cost estimate range changed from $110,000,000 - $290,000,000 to $110,000,000-$311,500,000.

Summary

This project currently is developing Critical Decision-0 (Approve Mission Need) and Critical Decision-1 (Approve Alternative Selection and Cost Range) per the requirements of DOE O 413.3B.

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

The Comprehensive Environmental Response, Compensation, and Liability Act process ongoing at the Paducah Gaseous Diffusion Plant in Paducah, Kentucky, will result in a decision either to construct and operate an On-Site Waste Disposal Facility, to take no action to construct and operate such a facility, or use off-site disposal. 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 Comprehensive Environmental Response, Compensation, and Liability Act process.

The funding reflected in this FY 2017 Budget proposal for the On-Site Waste Disposal Facility at the Paducah Gaseous Diffusion Plant in Paducah, Kentucky, is estimated pending final approval of the project's Record of Decision which is expected between the fourth Quarter of FY 2016 and the second Quarter of FY 2017.

In the event an On-Site Waste Disposal Facility is the selected remedy, the specific line-item funding proposal for FY 2017 would support design for the On-Site Waste Disposal Facility and remedial design site investigation work plan document preparation and implementation. No Total Estimated Cost funding will be spent until the Record of Decision and subsequent Critical Decision-0/1 have been approved.

This project is being conducted 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 an On Site Waste Disposal Facility, or off-site disposal. In accordance with the Comprehensive Environmental Response, Compensation, and Liability Act process and the requirements of the Paducah Federal Facilities Agreement, DOE is currently conducting this analysis, including the remedial investigation/feasibility study, remedy development and evaluation, and remedy selection process, to identify the preferred approach for disposition of the projected waste volumes. It is anticipated that the process will result in the selection of the design and construction of an On Site Waste Disposal Facility at the Paducah Gaseous Diffusion Plant.

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 Request	3Q FY 2015	N/A	3Q FY 2015	FY 2017	N/A	FY 2017	N/A	FY 2020
FY 2017 Request	2Q FY 2017	N/A	2Q FY 2017	TBD	TBD	TBD	N/A	TBD

*****All dates are based on current schedules and are subject to change until the baseline is validated and approved. The above dates do not reflect schedule contingency. The schedules are only estimates and are consistent with the high end of the schedule ranges.

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. Baseline and Validation Status ($K)

	TEC, Design	TEC, Construction	TEC, Total	OPC, Design	OPC, Construction	OPC, Total	TPC
FY 2015 Request	47,486	234,500	281,986	514	7,500	8,014	290,000
FY 2017 Proposal	TBD	TBD	TBD	TBD	TBD	TBD	TBD

* Costs are estimated based on the Critical Decision-0 Rough Order of Magnitude Cost Range, $110,000,000-$311,500,000. All numbers are subject to change until the baseline is validated and approved at Critical Decision-2. The numbers are only estimates and are consistent with the high end of the cost ranges.

4. Project Description, Justification, and Scope

Scope

If an On-Site Waste Disposal Facility is selected as the remedy, the scope of this project would include the design of an On-Site Waste Disposal Facility, currently being evaluated with an air capacity up to eight million cubic yards, including support facilities and infrastructure. An On-Site Waste Disposal Facility would be able to provide on-site waste disposal capacity for anticipated demolition debris and environmental remediation waste from the Paducah cleanup projects. This Construction Project Data Sheet addresses a potential On-Site Waste Disposal Facility Cell 1 Design and Construction.

In the event an On-Site Waste Disposal Facility is the selected remedy, the specific line-item funding proposal for FY 2017 would support design for the On Site Waste Disposal Facility and remedial design site investigation work plan document preparation and implementation. The remedial design site investigation field work likely could include, but not be limited

to, hydrogeological studies, well installation monitoring, geotechnical field investigation, shear wave velocity testing for seismic resistance, wetlands delineation, floodplains assessment, and threatened and endangered species study. The On-Site Waste Disposal Facility Cell 1 Design and Construction Project (henceforth referred to as "the project") would include, but would not be limited to, the design and construction of the waste disposal facility and necessary infrastructure. Components of the current conceptual design include geo-synthetic liners, leachate collection systems, support facilities, and necessary infrastructure.

The project would be developed and conducted in accordance with the project management requirements of the DOE Order 413.3B, Program and Project Management for the Acquisition of Capital Assets, and all appropriate project management requirements would be met throughout project execution.

This project does not include the final cap for Cell 1 of the On-Site Waste Disposal Facility. It is anticipated that a separate project data sheet will be developed in the future to place final caps on multiple cells. Subsequent construction of cells related to a potential On-Site Waste Disposal Facility would be separate construction projects, each to be managed as separate line-item capital asset projects, including individual sets of project data sheets. The construction of the first cell and necessary site preparations and infrastructure activities would need to be completed in sufficient time to ensure availability of on-site disposal for anticipated environmental remediation and demolition projects.

Justification

The mission need is based on the projected waste volumes identified in the comprehensive Paducah lifecycle scope and the alternative analysis being conducted to determine whether an On Site Waste Disposal Facility should be selected as the remedy. The Comprehensive Environmental Response, Compensation, and Liability Act analysis includes the development of a conceptual design to support the evaluation.

Due to the projected waste volumes identified in the comprehensive Paducah lifecycle scope, it was determined that analysis was necessary, in accordance with Comprehensive Environmental Response, Compensation, and Liability Act and the Paducah Federal Facilities Agreement, to evaluate potential alternatives to address the disposition of those projected waste volumes associated with remediation actions and demolition of Paducah Gaseous Diffusion Plant facilities. The alternatives being evaluated are no action (required by Comprehensive Environmental Response, Compensation, and Liability Act), the potential construction and operation of an On-Site Waste Disposal Facility or off-site disposal. In accordance with the Comprehensive Environmental Response, Compensation, and Liability Act process and the requirements of the Paducah Federal Facilities Agreement, DOE is currently conducting this analysis, including the remedial investigation/feasibility study, remedy development and evaluation, and remedy selection process, to identify the preferred approach for disposition of the projected waste volumes.

An On-Site Waste Disposal Facility would be a landfill to provide on-site waste disposal capacity for anticipated demolition debris and environmental remediation waste from the Paducah cleanup projects. This Project Data Sheet addresses a potential On-Site Waste Disposal Facility Cell 1 Design and Construction 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

	(dollars in thousands)		
	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
Design			
FY 2015	N/A	N/A	0
FY 2016	N/A	N/A	0

FY 2017*	N/A	N/A	10,923
Outyears	N/A	N/A	0
Total, Design	N/A	N/A	TBD
Construction			
Outyears	N/A	N/A	TBD
Total, Construction	N/A	N/A	TBD
TEC			
FY 2015	8,486	8,486	0
FY 2016	0	0	0
FY 2017*	2,437	2,437	10,923
Outyears	TBD	TBD	TBD
Total TEC	TBD	TBD	TBD
Other Project Cost (OPC)			
OPC except D&D			
Outyears	TBD	TBD	TBD
Total, OPC except D&D	TBD	TBD	TBD
OPC			
Outyears	TBD	TBD	TBD
Total, OPC	TBD	TBD	TBD
Total Project Cost (TPC)			
FY 2015	8,486	8,486	0
FY 2016	0	0	0
FY 2017*	2,437	2,437	10,923
Outyears	TBD	TBD	TBD
Total, TPC	TBD	TBD	TBD

* This Construction Project Data Sheet is within the Uranium Enrichment Decontamination and Decommissioning Fund appropriation in FY 2016 and the mandatory United States Enrichment Corporation Fund proposal in FY 2017.

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	24,384	N/A
Contingency	TBD	23,102	N/A
Total Design	TBD	47,486	N/A

	(dollars in thousands)		
	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Construction			
Building & Site Work	TBD	116,139	N/A
Contingency	TBD	118,361	N/A
Total Construction	TBD	234,500	N/A
Total, TEC	TBD	281,986	N/A
Contingency, TEC	TBD	141,463	N/A
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning	TBD	866	N/A
Start-Up	TBD	0	N/A
Contingency	TBD	3,051	N/A
Other OPC	TBD	4,097	N/A
Total, OPC except D&D	TBD	8,014	N/A
Total, OPC	TBD	8,014	N/A
Contingency, OPC	TBD	3,051	N/A
Total, TPC	TBD	290,000	N/A
Total, Contingency	TBD	144,514	N/A

7. Schedule of Appropriation Requests

		Prior Years	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	Outyears	Total
FY 2015 Request	TEC	8,486	24,000	58,000	38,000	68,000			85,500	281,986
	OPC	514	3,000	4,000	200	0			300	8,014
	TPC	9,000	27,000	62,000	38,200	68,000			85,800	290,000
FY 2017 Proposal	TEC	8,486	0	2,437					TBD	TBD
	OPC	0	0	0					TBD	TBD
	TPC	8,486	0	2,437					TBD	TBD

8. Related Operations and Maintenance Funding Requirements

Security costs for this project are not included in the cost presented. Security costs are funded from a separate appropriation (Defense appropriation for PBS PA-0020). Security costs for this project are nominal, and consequently, are not included in the costs of this data sheet.

Start of Operation or Beneficial Occupancy (fiscal quarter or date)	TBD
Expected Useful Life (duration of waste placement operations)	3 – 5 years [1]
Expected Future Start of D&D of this Capital Asset (fiscal quarter)	N/A [2]

[1] Annual estimate for this project is pre-Critical Decision-0/1 and only represents cost during waste placement. The lifecycle estimate does not include post-closure activities or long-term surveillance and maintenance.

[2] No D&D is planned related to this project.

Construction of the OSWDF Cell 1 has no direct operations, maintenance, and utilities.

(dollars in thousands)

	Annual Costs		Life Cycle Costs	
	Current Total Estimate	Previous Total Estimate	Current Total Estimate	Previous Total Estimate
Operations	TBD	10,000	TBD	50,000
Utilities	N/A	N/A	N/A	N/A
Maintenance	N/A	N/A	N/A	N/A
Total, Operations & Maintenance*	TBD	10,000	TBD	50,000

*Utilities and Maintenance costs are included in the Operations.

9. Required D&D Information

Area	Square Feet
N/A*	N/A

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

This project would provide a new capability and would not replace a current capability. Thus, the basis for this project's justification would not be replacing current facilities; accordingly, no existing facilities would 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 approach for the project would be through competitive bids and the use of consent packages, consistent with current Paducah prime contract requirements under Federal Acquisition Regulation 44. An Acquisition Strategy for the project will be developed for submission of Critical Decision-1. An Acquisition Plan for the remaining design efforts and construction phases of the project will be prepared prior to Critical Decision-2/3 following the finalization of the Record of Decision.

Portsmouth

Overview

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

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

Direct maintenance and repair at the Portsmouth Site in FY 2017 is estimated to be $51,427,000.

Highlights of the FY 2017 Budget Request

In FY 2017, the Budget proposes to fund Uranium Enrichment Decontamination and Decommissioning Fund activities utilizing balances within the United States Enrichment Corporation Fund. Previously, these activities were funded in the Uranium Enrichment Decontamination and Decommissioning Fund appropriation.

This FY 2017 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 Portsmouth United States Enrichment Corporation Fund proposal includes $168,638,000 and 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 to prepare for demolition.

The FY 2017 proposal includes $41,168,000 ($5,468,000 for design, $35,000,000 for construction and $700,000 for other project cost) for the Portsmouth On-Site Waste Disposal Facility. The mission of this project is to construct an on-site facility for the disposal of waste expected to be generated from the demolition of the Portsmouth Gaseous Diffusion Plant and associated facilities.

FY 2016 and FY 2017 Key Milestones/Outlook

In accordance with the Ohio Environmental Protection Agency Director's Final Findings and Order for Decontamination and Decommissioning, the Waste Disposition and Process Building Records of Decision received Ohio Environmental Protection Agency concurrence and DOE issued the Record of Decision in FY 2015. The Director's Final Findings and Order contains a milestone for submittal of Remedial Design/Remedial Action Work Plans within 180 days of the Records of Decision. These Remedial Design/Remedial Action Work Plans, which require Ohio Environmental Protection Agency concurrence and approval of enforceable milestones, may impact the milestones outlined below.

- (March 2016) Complete site clearing for the On-Site Waste Disposal Facility.
- (September 2016) Complete facility demolition of (X-114A) Firing Range.
- (September 2016) Complete On-Site Waste Disposal Facility 90% design and final design approval.
- (September 2017) Complete Phase I Infrastructure activities for the On-Site Waste Disposal Facility.
- (September 2017) Contractor declaration that X-326 Highly Enriched Uranium Enrichment Building is "Criticality Incredible."

In accordance with the Ohio Consent Decree, Ohio Environmental Protection Agency issues a Decision Document for soil and groundwater remediation which requires a work plan within 90 days that contains enforceable milestones.

- Prepare Resource Conservation Recovery Act Decision Documents for final soil and groundwater cleanup in FY 2017.

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, 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 for Decontamination and Decommissioning to formalize the terms and requirements of this agreement. The Remedial Design/Remedial Action Work Plans will describe, in detail, the actions required to perform the demolition and waste disposition. In addition, DOE and the Ohio Environmental Protection Agency have an agreement for surveillance and maintenance of the cylinder yards and depleted uranium hexafluoride cylinders while awaiting conversion. A separate Directors Final Findings and Orders formalize the terms and requirements of this agreement.

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:

- Babcock and Wilcox Conversion Services contract is a cost plus award fee contract for treatment and disposition of Depleted Uranium Hexafluoride, covering the period from 1/03/2011 - 1/1/2016. Competitive procurement for a replacement contract is ongoing.
- Fluor - Babcock and Wilcox Portsmouth contract is a cost plus award fee contract for decontamination and decommissioning of uranium gaseous diffusion buildings, legacy soil and groundwater remediation, covering the period 3/29/2011 - 3/28/2016 with an option to extend through 3/28/21. A decision on the five year option has not yet been made.
- Portsmouth Mission Alliance, LLC contract for site infrastructure support services is a firm-fixed price contract that covers the period of 3/16/2016 – 3/15/2019 with an additional 22-month option period.

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 with the completion of the first of three major process facilities. 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.

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 regulatory documents which could have significant impacts on individual projects and may affect the overall costs and schedule are outlined below:

- The Waste Disposition Record of Decision and the Process Building Record of Decision were completed in FY 2015.
- DOE will develop Remedial Design/Remedial Action Work Plans as part of the decision making process in coordination with the Ohio Environmental Protection Agency that will describe in detail the actions required to perform the demolition and waste disposition activities.
- DOE has received approval of the Resource Conservation and Recovery Act Facility Investigation/Corrective Measure Study from the Ohio Environmental Protection Agency as part of the decision making process for the Resource Conservation Recovery Act soil remediation Decision Documents.
- DOE will be completing the Resource Conservation Recovery Act Facility Investigation/Corrective Measure Study as part of the decision making process for the Resource Conservation and Recovery Act soil and groundwater Decision Document.

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 allow 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 1,855 metric tons of uranium in FY 2015, based on the Secretarial Determination of May 2015. The Secretarial Determination of May 2015 reduced the volume to 1,600 metric tons of uranium for FY 2016. For FY 2017 budgeting purposes, uranium transfer quantities are assumed to remain consistent with the FY 2016 volume in the FY 2015 Secretarial Determination. The actual value of the material is subject to the final amounts transferred quarterly and the market value at the time of the transfer.

Portsmouth Project Office

Funding ($K)

	FY 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs FY 2016
Discretionary					
Defense Environmental Cleanup					
Safeguards and Security					
PO-0020 / Safeguards and Security	8,492	8,492	10,492	14,049	+3,557
Non-Defense Environmental Cleanup					
Gaseous Diffusion Plants					
Portsmouth Gaseous Diffusion Plant					
PO-0011X / NM Stabilization and Disposition-Depleted Uranium Hexafluoride Conversion	51,517	49,517	51,517	50,959	-558
Uranium Enrichment Decontamination and Decommissioning Fund					
Portsmouth					
Portsmouth Gaseous Diffusion Plant					
PO-0040 / Nuclear Facility D&D-Portsmouth	214,024	214,024	225,166	0	-225,166
Pension and Community and Regulatory Support					
Portsmouth Gaseous Diffusion Plant					
PO-0104 / Portsmouth Community and Regulatory Support	1,020	1,020	1,020	0	-1,020
PO-0103 / Portsmouth Contract/Post-Closure Liabilities/Administration	775	775	775	0	-775
Subtotal, Portsmouth Gaseous Diffusion Plant	**1,795**	**1,795**	**1,795**	**0**	**-1,795**
Total, Uranium Enrichment Decontamination and Decommissioning Fund	**215,819**	**215,819**	**226,961**	**0**	**-226,961**
Mandatory					
United States Enrichment Corporation Fund					
Portsmouth					
Portsmouth Gaseous Diffusion Plant					
PO-0040 / Nuclear Facility D&D-Portsmouth	0	0	0	255,850	+255,850
Pension and Community and Regulatory Support					
Portsmouth Gaseous Diffusion Plant					

	FY 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs FY 2016
PO-0104 / Portsmouth Community and Regulatory Support	0	0	0	1,020	+1,020
PO-0103 / Portsmouth Contract/Post-Closure Liabilities/Administration	0	0	0	775	+775
Subtotal, Portsmouth Gaseous Diffusion Plant	0	0	0	**1,795**	**+1,795**
Total, United States Enrichment Corporation Fund	0	0	0	**257,645**	**+257,645**
Total, Portsmouth	**275,828**	**273,828**	**288,970**	**322,653**	**+33,683**

Portsmouth Project Office Explanation of Major Changes ($K)

	FY 2017 vs FY 2016
Defense Environmental Cleanup	
Safeguards and Security	
PO-0020 / Safeguards and Security	
• Increased funding maintains the security posture accounting for a reduction of prior year carryover balances.	+3,557
Non-Defense Environmental Cleanup	
Gaseous Diffusion Plants	
Portsmouth Gaseous Diffusion Plant	
PO-0011X / NM Stabilization and Disposition-Depleted Uranium Hexafluoride Conversion	
• Decrease represents use of prior-year carryover to complete facility upgrades during shutdown of plant.	-558
Uranium Enrichment Decontamination and Decommissioning Fund	
Portsmouth	
PO-0040 / Nuclear Facility D&D-Portsmouth	
• Reflects proposal to spend United States Enrichment Corporation Fund on these activities. Net increase of $30,684,000 supports design and construction of the On-Site Waste Disposal Facility offset by the completion of the removal of contaminated process gas equipment from the X-326 Process Building and deferred maintenance activities.	-225,166
PO-0104 / Portsmouth Community and Regulatory Support	
• Reflects proposal to spend United States Enrichment Corporation Fund on these activities.	-1,020
PO-0103 / Portsmouth Contract/Post-Closure	
• Reflects proposal to spend United States Enrichment Corporation Fund on these activities.	-775
United States Enrichment Corporation Fund	
Portsmouth	
PO-0040 / Nuclear Facility D&D-Portsmouth	
• Reflects proposal to spend United States Enrichment Corporation Fund on these activities. Net increase of $30,684,000 supports design and construction of the On-Site Waste Disposal Facility offset by the completion of the removal of contaminated process gas equipment from the X-326 Process Building and deferred maintenance activities.	+255,850

	FY 2017 vs FY 2016
PO-0104 / Portsmouth Community and Regulatory Support	
• Reflects proposal to spend United States Enrichment Corporation Fund on these activities with a net $0 change.	+1,020
PO-0103 / Portsmouth Contract/Post-Closure	
• Reflects proposal to spend United States Enrichment Corporation Fund on these activities with a net $0 change.	+775
Total, Portsmouth	**+33,683**

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 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
$10,492	**$14,049**	**+$3,557**
• 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.	• 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.	• Increased funding maintains the security posture accounting for a reduction of prior year carryover balances.

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. The scope of this PBS also includes direct maintenance and repair that are applicable to these areas.

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 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
$51,517	**$50,959**	**-$558**
• Continue steady state operations of the DUF6 conversion facility with emphasis on plant availability and maintain optimum throughput including facility upgrades to support operations. • 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. • Award new five-year operations contract.	• 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.	• Decrease represents use of prior-year carryover to complete facility upgrades during shutdown of plant.

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

Overview

This PBS is within the Uranium Enrichment Decontamination and Decommissioning Fund appropriation in FY 2016 and the mandatory United States Enrichment Corporation Fund proposal in FY 2017.

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 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 2017 proposal is $209,106,000. The United States Enrichment Corporation Fund proposal includes $168,638,000 and 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 2017 proposal includes $41,168,000 ($5,468,000 for design, $35,000,000 for construction, and $700,000 for other project cost funded within PBS PO-0040, Nuclear Facility Decontamination and Decommissioning-Portsmouth operating account) 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 2016 Enacted	FY 2017 Proposal	Explanation of Changes FY 2017 vs FY 2016
$225,166	**$255,850**	**+$30,684**
• Finalize Waste Disposition and Process Building Remedial Design/Remedial Action Work Plans. • Complete removal of contaminated process gas equipment from X-326 Process Building. • Initiate mobilization in X-333 Process Building to prepare for deactivation.	• Complete deactivation and declaration of criticality incredible and initiate downgrade (from a Category II Nuclear Facility to a radiological facility) of X-326, the first process building, for "demolition ready" in FY 2017. • Continue On-Site Waste Disposal Facility site	• Reflects proposal to spend United States Enrichment Corporation Fund on these activities. Net increase of $30,684,000 supports design and construction of the On-Site Waste Disposal Facility offset by the completion of the removal of contaminated process gas equipment from the X-

- Continue offsite waste disposition while the construction of the On Site Waste Disposal Facility is in progress.
- 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.
- Initiate/Continue/Replace deferred maintenance items: High Pressure Fire Water, Sanitary Water Systems, Power Poles, X-530 Wave Trap and Oil Circuit Breaker Bushing, X-611 Slow Mix Basins, X-530 Oil Filtration System, X-300 Lightning Detector, X-690 Weather and Freeze Protection, X-6619 Control and Detection, and Sanitary Water Controls.
- Conduct characterization, treatment and disposition of waste associated with deactivation and decommissioning.

preparation including infrastructure activities.

- Obtain On-site Waste Disposal Facility Critical Decision-3 approval in FY 2017.
- Prepare Resource Conservation Recovery Act Decision Documents for final soil and groundwater cleanup in FY 2017.
- Continue treatment and offsite waste disposition while the construction of the On-Site Waste Disposal Facility is in progress.
- 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.

326 Process Building and deferred maintenance activities.

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

Overview

This PBS is within the Uranium Enrichment Decontamination and Decommissioning Fund appropriation in FY 2016 and the mandatory United States Enrichment Corporation Fund proposal in FY 2017.

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 2016 Enacted	FY 2017 Proposal	Explanation of Changes FY 2017 vs FY 2016
$775	**$775**	**0**
• 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.	• 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.	• Reflects proposal to spend United States Enrichment Corporation Fund on these activities with a net $0 change.

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

Overview

This PBS is within the Uranium Enrichment Decontamination and Decommissioning Fund appropriation in FY 2016 and the mandatory United States Enrichment Corporation Fund proposal in FY 2017.

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 2016 Enacted	FY 2017 Proposal	Explanation of Changes FY 2017 vs FY 2016
$1,020	**$1,020**	**0**
• Provide support for oversight activities of the Ohio Environmental Protection Agency. • Support the designated Site Specific Advisory Board. • Provide grant to Ohio University to produce selected environmental reports. • Provide Payment in Lieu of Taxes to Pike County.	• Support oversight activities of the Ohio Environmental Protection Agency. • Support the designated Site Specific Advisory Board.	• Reflects proposal to spend United States Enrichment Corporation Fund on these activities with a net $0 change.

Portsmouth
Construction Projects Summary ($K)

	Total	Prior Years	FY 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs FY 2016
15-U-408, On Site Waste Disposal Facility (PO-0040)							
Total Estimate Cost (TEC)	338,818	0	4,500	4,500	21,749	40,468	+18,719
Other Project Costs (OPC)	11,182	0	0	0	0	700	+700
Total Project Cost (TPC) 15-U-408	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**

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 Construction Project Data Sheet is an update to the FY 2016 President's Budget Request Construction Project Data Sheet. The Comprehensive Environmental Response, Compensation, and Liability Act process was completed in June 2015, resulting in a Record of Decision selecting a combined on-site and off-site waste disposal approach as the preferred alternative. There were no significant changes to the scope, cost, schedule, funding profile, major risks, approved critical decisions, Federal Project Director assignment, or use of contingency for this project since the FY 2016 request.

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

Summary
The DOE O 413.3B Critical Decision process resulted in an approved Critical Decision 0, *Approve Mission Need,* Critical Decision 1, *Approve Alternative Selection and Cost Range*, and Critical Decision 3A, *Approve Start of Partial Construction/Execution,* on August 28, 2015. The design maturity required for approval of the Record of Decision facilitated a risk-based cost estimate to be used in support of Critical Decision 1. The approved Critical Decision 1 cost range is $242,000,000 to $350,000,000 with a Critical Decision 4 completion range of fourth quarter FY 2019 to fourth quarter FY 2020. This falls within the cost and schedule estimate ranges submitted on the FY 2016 Construction Project Data Sheet.

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

The TEC scope for the FY 2017 budget year includes large scale grading for infrastructure installations, impacted material transfer area haul road, and Interim Leachate Treatment System construction, and initiation of construction of the Fog Road Overpass. The engineering and procurement of the Cell 1 and North leachate treatment system and the impacted material haul road will be completed in FY 2017.

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	CD-2	Final Design Complete	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
FY 2017	4Q FY2015	04/10/2014*	4Q FY2015	TBD	TBD	TBD	N/A	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 Alternative Selection and Cost Range
CD-2 – Approve 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 Completion
PB – Indicates the Performance Baseline

(Fiscal quarter or date)

CD-3A Milestones	Long Lead Procurement Complete *	Initial Site Preparation Complete *	Access Control Fencing Complete *
FY 2015 Request	1Q FY2015	3Q FY2015	3Q FY2015
FY 2016 Request	2Q FY2015	4Q FY2016	4Q FY2016
FY 2017 Request	2Q FY2017	2Q FY2017	2Q FY2017

***** *Critical Decision-3A has been approved on 8-28-2015 to allow for long-lead procurement, site preparation, and access control fencing necessary prior to Critical Decision-2/3 approval.*

* *The above milestones reflect the projected upper range finish dates of the CD-3A scope, as defined in the CD-3A proposal, in accordance with DOE O 413.3B.*

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
FY 2017	TBD	TBD	TBD	TBD	N/A	TBD	TBD

Note: Numbers are only estimates and are consistent with the high end of the cost range.

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 was established by the approval of Mission Need (Critical Decision 0) for the On Site Waste Disposal Facility Cell 1 Liner Project, on August 28, 2015. 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. The Comprehensive Environmental Response, Compensation, and Liability Act process was completed in June 2015, resulting in a Record of Decision selecting a combined on-site and off-site waste disposal approach as the preferred alternative.

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	200
FY 2016	N/A	N/A	7,800
FY 2017[a]	N/A	N/A	7,573
Total, Design	N/A	N/A	TBD
Construction			
FY 2015*	N/A	N/A	300
FY 2016*	N/A	N/A	25,000
FY 2017a	N/A	N/A	36,368
Outyears	TBD	TBD	TBD
Total, Construction	N/A	N/A	TBD
TEC			
FY 2015	4,500	4,500	500
FY 2016	21,749	21,749	32,800
FY 2017[a]	40,468	40,468	43,941
Outyears	TBD	TBD	TBD
Total, TEC	TBD	TBD	TBD
[Other Project Cost (OPC)]			
OPC except D&D			
FY 2016	N/A	N/A	700

(dollars in thousands)

	Appropriations*	Obligations*	Costs*
FY 2017[a]	N/A	N/A	700
Outyears	TBD	TBD	TBD
Total, OPC except D&D	N/A	N/A	TBD
OPC, D&D	N/A	N/A	N/A
Total, D&D	N/A	N/A	N/A
OPC			
FY 2016	0	0	0
FY 2017[a]	700	700	700
Outyears	TBD	TBD	TBD
Total, OPC	TBD	TBD	TBD
Total Project Cost (TPC)			
FY 2015	4,500	4,500	500
FY 2016	21,749	21,749	33,500
FY 2017[a]	41,168	41,168	44,641
Outyears	TBD	TBD	TBD
Total, TPC	TBD	TBD	TBD

*Long-lead procurement CD-3A

[a]In FY 2017, the Budget proposes to fund Uranium Enrichment Decontamination and Decommissioning Fund activities utilizing balances within the United States Enrichment Corporation Fund. Previously, these activities were funded in the Uranium Enrichment Decontamination and Decommissioning Fund appropriation.

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			
Building & Site Work	TBD	N/A	N/A
D&D	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

	(dollars in thousands)		
	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning	TBD	N/A	N/A
Cold startup	TBD	N/A	N/A
Other OPC Costs	TBD	N/A	N/A
Contingency	TBD	N/A	N/A
Total, OPC except D&D	TBD	N/A	N/A
D&D *(if any)*			
D&D	N/A	N/A	N/A
Contingency	N/A	N/A	N/A
Total, D&D	N/A	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

($K)

		Prior Years	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	Outyears	Total
FY 2015 Request	TEC	28,539	63,706	66,283	76,725	52,073	0	0	287,326
	OPC	6,461	5,574	5,860	2,369	2,410	0	0	22,674
	TPC	34,300	69,280	72,143	79,094	54,483	0	0	310,000
FY 2016 Request	TEC	4,500	21,749	TBD					
	OPC	0	0	TBD					
	TPC	4,500	21,749	TBD					
FY 2017 Request[a]	TEC	4,500	21,749	40,468	TBD	TBD	TBD	TBD	TBD
	OPC	0	0	700	TBD	TBD	TBD	TBD	TBD
	TPC	4,500	21,749	41,168	TBD	TBD	TBD	TBD	TBD

[a]In FY 2017, the Budget proposes to fund Uranium Enrichment Decontamination and Decommissioning Fund activities utilizing balances within the United States Enrichment Corporation Fund. Previously, these activities were funded in the Uranium Enrichment Decontamination and Decommissioning Fund appropriation.

8. Related Operations and Maintenance Funding Requirements

Nominal activities related to site services including safeguards and security 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 *

* *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	TBD	TBD	TBD
Utilities	TBD	TBD	TBD	TBD
Maintenance	TBD	TBD	TBD	TBD
Total, Operations & Maintenance	TBD	TBD	TBD	TBD

** 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 2017 budget request process, specifically pertaining to United States Enrichment Corporation 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 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 $84,844,000.

Highlights of the FY 2017 Budget Request

Richland's FY 2017 budget request represents continued achievement of important cleanup progress required by the Tri-Party Agreement. In summary, the Richland budget request is designed to maintain safe operations; Hanford site-wide services; continue groundwater remediation; complete Plutonium Finishing Plant demolition, capping and demobilization; maturing of technology and approach for 300-296 , completion of 618-10 vertical piping units and support K West Basin sludge removal progress. Cleanup work is accomplished while maintaining safe and compliant waste management, decontamination and decommissioning, and groundwater capabilities in the Central Plateau.

The FY 2017 request includes funding for line item 15-D-401, the KW Basin Sludge Removal construction project ($11,486,000). 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 until shipped to the Waste Isolation Plant. 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 $11,486,000 requested for this project, $1,103,000 is for construction activities and $10,383,000 is for other project costs funded within PBS RL-0012, Spent Nuclear Fuel Stabilization and Disposition.

The Richland Operations Office provides the Hanford site landlord services. For FY 2017, Richland's request also includes the introduction of new Project Baseline Summaries for Hanford Site Wide Services. These Project Baseline Summaries are being created to provide better visibility and delineation between these site services and the direct project cleanup work. In previous annual budget requests, these services were funded through an allocation to most or all of the other Richland Project Baseline Summaries. The services include, but are not limited to, roads and transportation services; electrical and water services; facility maintenance; network and software engineering; and records management.

The following table provides a crosswalk of the funding for these services in fiscal year 2015 through the request year of 2017:

PBS	PBS Title	FY 2015 Enacted	FY 2015 Site Wide Services Distributed	FY 2016 Enacted	FY 2016 Site Wide Services Distributed	FY 2017 Request	FY 2017 vs FY 2016 Site Wide Services Distributed
RL-0011	NM Stabilization and Disposition - PFP	137,130	118,030	148,661	94,714	72,000	-22,714
RL-0012	SNF Stabilization and Disposition	67,746	34,946	81,192	48,986	58,014	+9,028
RL-0012	15-D-401 Containerized Sludge Line Item	46,055	46,055	77,016	77,016	11,486	-65,530
RL-0013	Solid Waste Stabilization and Disposition - 200 Area	107,651	89,151	150,691	97,345	104,400	+7,055
RL-0030	Soil and Water Remediation - Groundwater/Vadose Zone	184,929	125,029	174,619	106,832	139,904	+33,072
RL-0201	Site Wide Services/RL Direct/Infrastructure Upgrades	0	242,000	0	257,000	246,551	-10,449
Subtotal	**Central Plateau Remediation**	**543,511**	**655,211**	**632,179**	**681,893**	**632,355**	**-49,538**
RL-0040	Nuclear Facility D&D - Remainder of Hanford	65,922	11,122	88,874	32,906	41,000	+8,094
RL-0041	Nuclear Facility D&D - River Corridor Closure Project	311,866	254,966	181,836	189,712	28,755	-160,957
Subtotal	**River Corridor and Other Cleanup Operations**	**377,788**	**266,088**	**270,710**	**222,618**	**69,755**	**-152,863**
RL-0020	Safeguards and Security	63,668	63,668	65,501	63,879	72,000	+8,121
RL-0042	Nuclear Facility D&D - Fast Flux Test Facility Project	2,562	2,562	2,562	2,562	2,240	-322
RL-0100	Richland Community and Regulatory Support	19,701	19,701	19,701	19,701	14,701	-5,000
RL-0202	General Plant Projects	0	0	0	0	8,949	+8,949
Total - RL	**Richland Field Office Funding Summary**	**1,007,230**	**1,007,230**	**990,653**	**990,653**	**800,000**	**-190,653**

Within the FY 2017 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 a wide range of applied research activities in subsurface science, including the development of technologies and approaches for subsurface characterization, monitoring, remediation, and waste disposal. EM is also developing advanced computer modeling capabilities to simulate and predict the behavior and evolution of complex natural and engineered subsurface environments over long time periods. EM will support several technology development activities that are highly relevant to the Subsurface Crosscut and that complement efforts in DOE's Office of Nuclear Energy and other DOE programs.

As part of its commitment to the Subsurface Crosscut, EM will focus on developing a universal canister for deep borehole waste disposal. Activities will include design, fabrication and performance testing of waste canisters; assessment of packaging, transportation, and disposal requirements; and development of sensors, detectors, and devices for measurement and imaging. Various radioactive waste forms will also be evaluated for possible deep borehole disposal.

FY 2017 Crosscuts ($K)

	Subsurface Engineering
Richland	**3,000**

FY 2016 & FY 2017 Key Milestones/Outlook

- (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.
- (December 2016) M-015-79; Submit CERCLA Soil and Groundwater Remedial Investigation/Feasibility Study Report and Proposed Plan for 100-BC-1/2/5.
- (September 2017) M-016-177; Complete 105-K West sludge transfer equipment installation.
- (September 2017) M-016-193; Investigate SE Chromium Plume, install wells, evaluate groundwater monitoring data and install monitoring wells.

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. In 2015, the Tri-Parties also reached agreement on additional milestone date changes.

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 has added an additional year to this contract to complete tasks in 2016 in order to maximize progress in the River Corridor. In FY 2017, EM will transition remaining scope after FY 2016 to CH2M Hill Plateau Remediation Company.
- 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 mission includes 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.

Funding ($K)

	FY 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs FY 2016
Defense Environmental Cleanup					
Hanford Site					
Central Plateau Remediation					
RL-0011 / NM Stabilization and Disposition-PFP	137,130	137,130	148,661	72,000	-76,661
RL-0012 / SNF Stabilization and Disposition	113,801	113,801	158,208	69,500	-88,708
RL-0013C / Solid Waste Stabilization and Disposition- 2035	107,651	107,651	150,691	104,400	-46,291
RL-0030 / Soil and Water Remediation-Groundwater/Vadose Zone - 2035	184,929	184,929	174,619	139,904	-34,715
RL-0201 / Hanford Site Wide Services	0	0	0	246,551	+246,551
Subtotal, Central Plateau Remediation	**543,511**	**543,511**	**632,179**	**632,355**	**+176**
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	65,922	76,811	88,874	41,000	-47,874
RL-0041 / Nuclear Facility D&D-River Corridor Closure Project	311,866	300,977	181,836	28,755	-153,081
Subtotal, River Corridor and Other Cleanup Operations	**377,788**	**377,788**	**270,710**	**69,755**	**-200,955**
Total, Hanford Site	**941,000**	**941,000**	**922,590**	**716,811**	**-205,779**
Safeguards and Security					
RL-0020 / Safeguards and Security	63,668	63,668	65,501	72,000	+6,499
Infrastructure Recapitalization					
RL-0202 / General Plant Projects	0	0	0	8,949	+8,949
Total, Defense Environmental Cleanup	**1,004,668**	**1,004,668**	**988,091**	**797,760**	**-190,331**
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	2,562	2,562	2,562	2,240	-322

	FY 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs FY 2016
Total, Richland	**1,007,230**	**1,007,230**	**990,653**	**800,000**	**-190,653**

Richland Explanation of Major Changes ($K)

	FY 2017 vs FY 2016
Defense Environmental Cleanup	
Hanford Site	
Central Plateau Remediation	
RL-0011 / NM Stabilization and Disposition-PFP	
• The decrease reflects culmination of the majority of the effort toward decommissioning and demolition of the Plutonium Finishing Plant facilities to slab-on-grade by 2016 (decrease of $22,714,000). Additionally, the decrease reflects a redistribution of Hanford Site Service cost to PBS RL-0201 (Site Wide Services). See above Site Wide Services distribution table.	-76,661
RL-0012 / SNF Stabilization and Disposition	
• The decrease reflects completion of facility modifications to prepare for installation of sludge removal systems for the K West Basin, as well as purchase of the engineered containers for sludge repackaging (decrease of $65,530,000 for the line item construction project: 15-D-401 – Containerized Sludge). An increase for the work in T Plant (increase of $9,028,000). Additionally, the decrease reflects a redistribution of Hanford Site Service cost to PBS RL-0201 (Site Wide Services). See above Site Wide Services distribution table.	-88,708
RL-0013C / Solid Waste Stabilization and Disposition- 2035	
• The decrease reflects redistribution of the Hanford Site Services costs to PBS RL-0201 (Site Wide Services). See above Site Wide Services distribution table. There is an increase to provide additional support to include planning for dry storage options for the cesium and strontium capsules (increase of $7,055,000).	-46,291
RL-0030 / Soil and Water Remediation-Groundwater/Vadose Zone - 2035	
• The decrease reflects redistribution of Hanford Site Service cost to PBS RL-0201 (Site Wide Services), partially offset by increased effort in implementation of final groundwater remedies (pump and treat system and a gaseous reduction process) in the Central Plateau (increase of $33,072,000). See above Site Wide Services distribution table.	-34,715
RL-0201 / Hanford Site Wide Services	
• The increase reflects the creation of a new PBS to capture these costs which were previously spread amongst the other PBSs. Considering the aggregated amount for FY 2016 of $257,000,000, the delta for FY 2017 is a decrease of $10,499,000. Additionally, the increase reflects a redistribution of $8,949,000 to new General Plant Projects PBS RL-0202.	+246,551
Richland Community and Regulatory Support	
RL-0100 / Richland Community and Regulatory Support	
• Decrease reflects focus on cleanup mission.	-5,000

	FY 2017 vs FY 2016
River Corridor and Other Cleanup Operations	
RL-0040 / Nuclear Facility D&D-Remainder of Hanford - 2035	
• The decrease primarily reflects redistribution of Hanford Site Services and infrastructure support to PBS RL-0201 (Site Wide Services). See above Site Wide Services distribution table. However, there was also an increase for work at REDOX and PUREX (increase of $8,094,000).	-47,874
RL-0041 / Nuclear Facility D&D-River Corridor Closure Project	
• The decrease reflects completion of remediation in the 300 area, 100K area and 618-10 trenches and a portion of the vertical pipe units. The change also reflects redistribution of the Hanford Site Services costs to PBS RL-0201 (Site Wide Services). See above Site Wide Services distribution table.	-153,081
Infrastructure Recapitilization	
RL-0202 / General Plant Projects	
• The increase reflects the establishment of a new PBS for Recapitalization/GPP projects to support Secretary's infrastructure initiatives.	+8,949
Safeguards and Security	
RL-0020 / Safeguards and Security	
• Increased funding maintains the security posture accounting for reduction in prior year carryover balances and also supports improvements in cybersecurity.	+6,499
Non-Defense Environmental Cleanup	
Fast Flux Test Reactor Facility D&D	
RL-0042 / Nuclear Facility D&D-Fast Flux Test Facility Project	
• The decrease represents use of prior-year carryover to offset FY 2017 funding.	-322
Total, Richland	**-190,653**

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. 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 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
$148,661	**$72,000**	**-$76,661**
• 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 Reclamation Facility), 243-Z (Low Level Waste Treatment Facility) and 242-Z (Waste Treatment	• Accomplish program management and cross cutting activities to support final decontamination and decommissioning field teams. • Complete Plutonium Finishing Plant Facility transition and selected disposition activities pursuant to achieving slab-on-grade. • Completion of a cap over the Plutonium Finishing Plant slab. • Completion of project closeout activities.	• The decrease reflects culmination of the majority of the effort toward decommissioning and demolition of the Plutonium Finishing Plant facilities to slab-on-grade by 2016 (decrease of $22,714,000). Additionally, the decrease reflects a redistribution of Hanford Site Service cost to PBS RL-0201 (Site Wide Services). See above Site Wide Services distribution table.

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 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 (KW) 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 at Hanford's Central Plateau for temporary storage. The project has completed the final design of the sludge handling and supporting equipment.

This PBS included direct maintenance and repair in FY 2016, but in FY 2017 funds are requested in PBS OR-0201, Hanford Site Wide.

SNF Stabilization and Disposition (PBS: RL-0012)

Activities and Explanation of Changes

FY 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
$158,208	**$69,500**	**-$88,708**
• 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, a 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	• Provide operation and maintenance support to maintain the K West Basin, a CAT 2 nuclear facility, in a safe and compliant manner. Funding also supports surveillance and maintenance activities. • Complete installation of Engineered Container Retrieval and Transfer System into the K West Basin and Annex and complete engineering, testing and cold commissioning activities for the Engineered Container Retrieval and Transfer	• The decrease reflects completion of facility modifications to prepare for installation of sludge removal systems for the K West Basin, as well as purchase of the engineered containers for sludge repackaging (decrease of $65,530,000 for the line item construction project: 15-D-401 – Containerized Sludge). An increase for the work in T Plant (increase of $9,028,000). Additionally, the decrease reflects a redistribution of Hanford Site

and procurement of long-lead equipment for sludge removal. ($77,016,000).

- Initiate T Plant modifications necessary to receive and store sludge.
- Provide project management support during the Containerized Sludge construction, installation, and readiness activities.

System ($11,486,000).

- Continue T Plant modifications and T Plant cell cleanout necessary to receive and store sludge.
- Provide project management support during the Containerized Sludge construction, installation, and readiness activities.

Service cost to PBS RL-0201 (Site Wide Services). See above Site Wide Services distribution table.

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.

This PBS included direct maintenance and repair in FY 2016, but in FY 2017 funds are requested in PBS OR-0201, Hanford Site Wide.

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

Activities and Explanation of Changes

FY 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
$150,691	**$104,400**	**-$46,291**
• 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.	• Support operations necessary to provide for safe and compliant interim storage of nuclear fuel, which include operating and maintaining the Canister Storage Building and the 200 Area Interim Storage Area facilities, operating systems, equipment and monitoring systems. • Support safe storage of 1,936 cesium and strontium capsules in the Waste Encapsulation and Storage Facility. • Begin project planning for dry storage options for the cesium and strontium capsules. • Maintain T Plant Complex in a safe, compliant, and cost-effective manner for acceptance/storage	• The decrease reflects redistribution of the Hanford Site Services costs to PBS RL-0201 (Site Wide Services). See above Site Wide Services distribution table. There is an increase to provide additional support to include planning for dry storage options for the cesium and strontium capsules (increase of $7,055,000).

- Maintain T Plant Complex in a safe, compliant, and cost-effective manner for acceptance/storage of low-level waste, mixed low-level waste, and transuranic 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 transuranic mixed waste.
- Complete upgrades to the Waste Encapsulation and Storage Facility K-3 exhaust system for ventilation confinement and hydrogen gas removal.

of low-level waste, mixed low-level waste, and TRU waste. Provide the operations necessary to support K-Basin sludge storage.
- Provide core project, waste and transportation management, including safe and compliant storage of the spent nuclear fuel.
- Maintain operations of 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 suspect transuranic/mixed waste to meet Federal and State regulations.

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.

This PBS included direct maintenance and repair in FY 2016, but in FY 2017 funds are requested in PBS OR-0201, Hanford Site Wide.

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

Activities and Explanation of Changes

FY 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
$174,619	**$139,904**	**-$34,715**
• 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.	• 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. • Continue progress toward completing decision documentation for the Comprehensive Environmental Response, Compensation and Liability Act Remedial Investigation/Feasibility	• The decrease reflects redistribution of Hanford Site Service cost to PBS RL-0201 (Site Wide Services), partially offset by increased effort in implementation of final groundwater remedies (pump and treat system and a gaseous reduction process) in the Central Plateau (increase of $33,072,000). See above Site Wide Services distribution table.

Study process to obtain the final Records of Decisions for operable units in the River Corridor and the Central Plateau.

- Support implementation of remedies to stop contaminants from reaching the Columbia River.

Hanford Site Wide Services (PBS: RL-0201)

Overview

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

This PBS scope includes services and projects to ensure safe and secure daily operations on the 586-square-mile Hanford Site. The Richland Operations Office provides these Hanford site landlord services. These site services are essential to support cleanup activities at both the Richland Operations Office and the Office of River Protection, as well as the science and research mission of the Pacific Northwest National Laboratory, which also includes General Plant Projects as well as direct maintenance and repair that are applicable to these areas. These integrated infrastructure services and projects include, but are not limited to, roads and transportation services; electrical and water services; facility maintenance; network and software engineering; and records management.

Hanford Site Wide Services (PBS: RL-0201)

Activities and Explanation of Changes

FY 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
0	**$246,551**	**+$246,551**
• This PBS did not exist in previous submissions but was included in multiple PBSs at a total value of $257,000,000.	• Services include, but are not limited to, roads and transportation services; electrical and water services; facility maintenance; network and software engineering; and records management. • Infrastructure projects to repair water lines, electrical utilities, fire alarm systems and overlay roads essential to Hanford clean-up efforts including the Office of River Protection activities in support of direct low-activity waste feed.	• The increase reflects the creation of a new PBS to capture these costs which were previously spread amongst the other PBSs. Considering the aggregated amount for FY 2016 of $257,000,000, the delta for FY 2017 is a decrease of $10,499,000. Additionally, the increase reflects a redistribution of $8,949,000 to new General Plant Projects PBS RL-0202.

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 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
$19,701	**$14,701**	**-$5,000**
• 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. • Restores funding to FY 2012 and previous levels; FY 2016 target supports full funding required for PILT payment, funding of mixed waste fee, air emissions monitoring, HAB, Dept. of Ecology Oversight, etc.	• 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.	• Decrease reflects focus on cleanup mission.

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. 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 scope includes the physical cleanup of these waste sites and facilities.

This PBS included direct maintenance and repair in FY 2016, but in FY 2017 funds are requested in PBS OR-0201, Hanford Site Wide.

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

Activities and Explanation of Changes

FY 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
$88,874	**$41,000**	**-$47,874**
• 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 Environmental Safety and Health oversight, quality management, safety and job hazards analysis, and technical support. • Provide steam for critical site heating systems, occupational medicine, Bonneville Power	• Support surveillance and maintenance activities necessary to ensure safety for waste sites and surplus facilities on Hanford's Central Plateau. Also supports core project management staff which includes: Environment, Safety and Health oversight, quality management, safety and job hazards analysis, technical support, and integration with site activities. • Initiation of canyon infrastructure risk reduction at REDOX and PUREX.	• The decrease primarily reflects redistribution of Hanford Site Services and infrastructure support to PBS RL-0201 (Site Wide Services). See above Site Wide Services distribution table. However, there was also an increase for work at REDOX and PUREX (increase of $8,094,000).

Administration electricity, litigation support, General Services Administration office space rent and Land Conveyance efforts.

- Support infrastructure systems and projects to ensure critical utilities, roads and facility systems are safe for continued operations and uninterrupted low-activity waste operations at the Waste Treatment and Immobilization Plant.

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.

This PBS included direct maintenance and repair in FY 2016, but in FY 2017 funds are requested in PBS OR-0201, Hanford Site Wide.

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

Activities and Explanation of Changes

FY 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
$181,836	**$28,755**	**-$153,081**
• 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	• 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. • Support remediation of the highly radioactive waste site 300-296 located beneath the 324 Building. • Remediation of 618-10 Vertical Pipe Units. • Support progress toward facility and waste remediation efforts in the 100 K Area.	• The decrease reflects completion of remediation in the 300 area, 100K area and 618-10 trenches and a portion of the vertical pipe units. The change also reflects redistribution of the Hanford Site Services costs to PBS RL-0201 (Site Wide Services). See above Site Wide Services distribution table.

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.

- Complete 100 Area and 300 Area field remediation except the 100 K Area.
- 618-10 vertical piping units auguring and remediation efforts along with expansion of ERDF operations.
- Long-lead procurements for design verification, in preparation for remediation of the 300-296 waste site beneath the 324 Building.
- Completion of 300-288:2 waste site remediation.
- Initiation of waste site remediation in the 100K Area.

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 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
$65,501	**$72,000**	**+$6,499**
• Provide a Safeguards and Security services program at the Hanford Site, including protection of Category I Spent Nuclear Material. • 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).	• Provide a Safeguards and Security services program at the Hanford Site, including protection of Category I Spent Nuclear Material. 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). • Upgrade/replacement of aged/obsolete physical security, qualification, and training systems and facilities. • Address information technology system	• Increased funding maintains the security posture accounting for reduction in prior year carryover balances and also supports improvements in cybersecurity.

cybersecurity initiatives to improve protection of classified and controlled unclassified information, to include privacy information.

General Plant Projects (PBS: RL-0202)

Overview

This PBS can be found within the Defense Appropriation.

The Recapitalization program, the key to effectively managing EM infrastructure, invests at a site level to improve the condition and extend the design life of the structures, capabilities, and/or systems. Investments are targeted to improve the reliability, sustainability, productivity, and efficiency of EM's general purpose infrastructure to reduce overall operating costs. They also reduce safety, environmental, and program risk associated with facilities and systems that are well beyond their design life. Investments are also made to manage risks in existing capabilities by investing to upgrade and improve the reliability, efficiency, and capability of programmatic equipment and associated infrastructure to meet Environmental Management requirements.
Infrastructure investments include costs for minor construction projects, capital equipment, and Other Project Costs for general purpose infrastructure Line Item construction projects. Infrastructure and Safety also funds some deactivation and disposal of excess infrastructure, resulting in surveillance and maintenance cost avoidance and reduced risk to workers, the public, the environment, and programs. In support of sustainability and energy performance goals, Recapitalization projects will include energy conservation measures to the greatest extent practicable.

The Capability Based Investments (CBI) are multi-year projects and strategies to sustain, enhance or replace capabilities through investments supporting the core programmatic requirements across the enterprise. These investments address needs beyond any single facility, activity, or system and are essential to achieving program mission objectives. To support ongoing and future cleanup activities, the Capability Based Investments invests in projects to reduce risk to the mission and ensure needed capabilities are available for mission work. The Capability Based Investments provides a corollary to EM's line-item construction by funding smaller projects to enhance or sustain critical EM capabilities across the enterprise. The Capability Based Investments projects include: minor construction projects, Capital Equipment Projects, and Expense Funded Projects. The Capability Based Investments subprogram also funds Other Project Costs for EM-specific infrastructure Line Item construction projects.

General Plant Projects (PBS: RL-0202)

Activities and Explanation of Changes

FY 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
0	**$8,949**	**+$8,949**
• No activities, as this PBS was established in FY 2017.	• Continue transmission and distribution system wood power poles testing and replacement. • Replace radio fire alarm repeater.	• The increase reflects the establishment of a new PBS for Recapitalization/GPP projects to support Secretary's infrastructure initiatives.

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 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
$2,562	**$2,240**	**-$322**
• 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.	• Support long-term safe and compliant surveillance and maintenance for Fast Flux Test Facility and support facilities, which also includes residual and stored bulk sodium at the Fast Flux Test Facility.	• The decrease represents use of prior-year carryover to offset FY 2017 funding.

Richland
Capital Summary ($K)

	Total	Prior Years	FY 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs FY 2016
Capital Operating Expenses Summary (including Major Items of Equipment (MIE))							
Capital Equipment > $500K (including MIE)	0	0	0	0	0	0	0
Plant Projects (GPP and IGPP) (<$10M)	0	0	0	0	8,877	8,949	+72
Total, Capital Operating Expenses	**0**	**0**	**0**	**0**	**6,257**	**8,949**	**+2,692**
Capital Equipment > $500K (including MIE)	0	0	0	0	0	0	0
Total, Capital Equipment (including MIE)	**0**	**0**	**0**	**0**	**6,257**	**8,949**	**+2,692**
Plant Projects (GPP and IGPP) (Total Estimated Cost (TEC) <$10M)							
Richland							
Transmission & Distribution System Wood Power Poles Testing and Replacement	0	0	0	0	6,257	2,779	-3,478
Replace Radio Fire Alarm Repeater	0	0	0	0	0	6,170	+6,170
Total, Richland	**0**	**0**	**0**	**0**	**6,257**	**8,949**	**+2,692**
Total, Plant Projects (GPP and IGPP) (Total Estimated (TEC) <$10M	**0**	**0**	**0**	**0**	**6,257**	**8,949**	**+2,692**
Total, Capital Summary	**0**	**0**	**0**	**0**	**6,257**	**8,949**	**+2,692**

Richland
Construction Projects Summary ($K)

	Total	Prior Years	FY 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs FY 2016
KW Basin Sludge Removal Project, Hanford Washington (RL-0012)							
SNF Stabilization and Disposition (RL-0012)							
Total Estimate Cost (TEC)	230,355	106,181	0	0	0	0	0
Other Project Costs (OPC)	77,918	48,014	0	0	0	0	0
Subtotal, KW Basin Sludge Removal Project, Hanford Washington (RL-0012)	TBD	TBD	TBD	TBD	TBD	TBD	TBD
15-D-401, KW Basin Sludge Removal Project, Hanford Washington (RL-0012)							
Total Estimate Cost (TEC)	0	0	46,055	46,055	77,016	1,103	-75,913
Other Project Costs (OPC)	0	0	5,043	5,043	6,407	10,383	+3,976
Subtotal, 15-D-401, KW Basin Sludge Removal Project, Hanford Washington (RL-0012)	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Total Project Cost (TPC) 15-D-401	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**

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 2017 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 Project Management Executive. Upon completion of the re-baseline effort this Project Data Sheet will be formally revised and submitted to Congress.

The most recent site baseline was approved on February 3, 2014 by the Richland Manger when the project was being managed as an operations activity, with an estimated total Project Cost (TPC) of $308,273,000 and Critical Decision-4 in the 4th quarter of FY 2018. An Independent cost Estimate (ICE) and External Independent Review (EIR) following the requirements of DOE O 413.3B to support CD-2/3 approval is planned for FY 2016.

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 2017.

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
FY 2017 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 Completion
D&D Start – Start of Demolition & Decontamination (D&D) work
D&D Complete –Completion of Demolition & Decontamination work

(Fiscal Quarter or Date)		
	Performance Baseline Validation*	CD-3A Long Lead Procurement
FY 2015 Request	2QFY2014	2QFY2012
FY 2016 Request	TBD	2QFY2012
FY 2017 Request	TBD	2QFY2012

CD-3A – Procurement of long lead equipment and construction of the KW Basin Annex Building with associated building systems. The annex is 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 principles of DOE O 413.3B with a tailored approach. The above dates for CD-0 and CD-1 were established when this project was being managed as an operations activity. CD-2 and subsequent Critical Decisions will be approved per DOE 413.3B.

3. Baseline and Validation Status

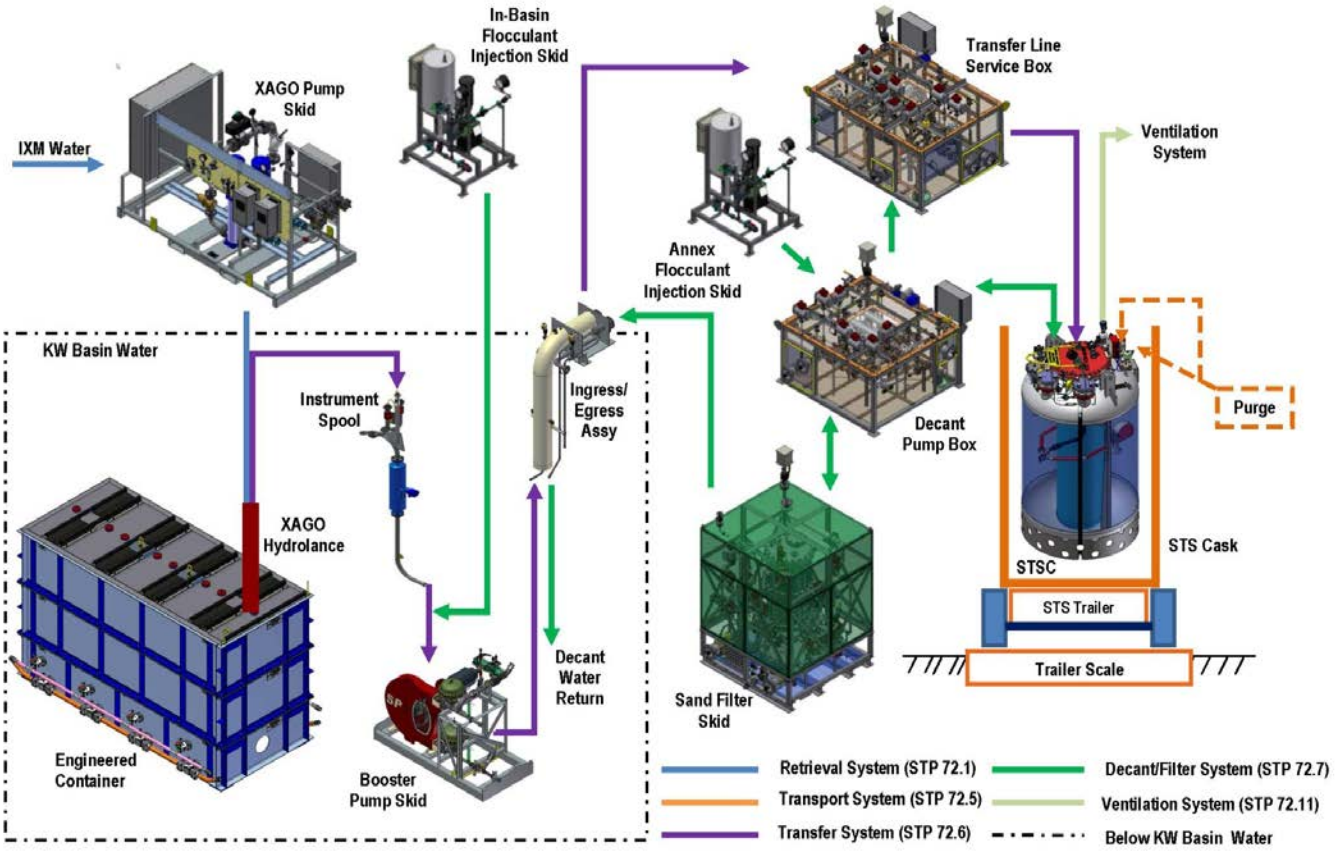
	(dollars in thousands)						
	TEC, Design	TEC, Construction	TEC, Total	OPC Except D&D	OPC, D&D	OPC, Total	TPC
FY 2015 Request	41,072	189,283	230,355	77,918	N/A	77,918	308,273
FY 2016 Request	41,072	189,283	230,355	77,918	N/A	77,918	308,273
FY 2017 Request	41,072	TBD	TBD	TBD	N/A	TBD	TBD

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 and install 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 conducted for this project in 2009 and 2012. The most recent technology readiness assessment, conducted to support site baseline 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 site baseline decision an EM-led independent review was conducted in October 2013. As part of bringing the project into full compliance with DOE Order 413.3B, an External Independent Review is planned to be scheduled during FY 2016.

5. Financial Schedule

(dollars in thousands)

	Appropriations	Obligations	Costs
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
FY 2017[(a)]	N/A	N/A	1,103
Outyears	TBD	TBD	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
FY 2017[(a)]	1,103	1,103	1,103
Outyears	TBD	TBD	TBD
Total, TEC	TBD	TBD	TBD

	(dollars in thousands)		
	Appropriations	Obligations	Costs
Other Project Cost (OPC)			
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
FY 2017[(a)]	10,383	10,383	10,383
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
FY 2017[(a)]	10,383	10,383	10,383
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
FY 2017[(a)]	11,486	11,486	11,486
Outyears	TBD	TBD	TBD
Total, TPC	TBD	TBD	TBD

This project was originally executed as an operations activity. 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 Project Management 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
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	TBD	39,604
Construction	TBD	TBD	98,133
Contingency	TBD	TBD	51,546
Total, Construction	TBD	TBD	189,283
Total, TEC	TBD	TBD	230,355
Contingency, TEC	TBD	TBD	51,546
Other Project Cost (OPC)			
OPC except D&D			
Testing	TBD	TBD	33,539
Sampling & Analysis	TBD	TBD	14,355
Conceptual Design	TBD	TBD	5,603
Start-Up	TBD	TBD	6,100
Other OPC Costs	TBD	TBD	9,321
Contingency	TBD	TBD	9,000
Total, OPC except D&D	TBD	TBD	77,918
Total, OPC	TBD	TBD	77,918
Contingency, OPC	TBD	TBD	9,000
Total, TPC	TBD	TBD	308,273
Total, Contingency	TBD	TBD	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	TEC	106,181	46,055	77,016	1,103	0	0	0	0	230,355

Request	OPC	48,014	5,043	6,407	10,383	TBD	0	0	TBD	TBD
	TPC	154,195	51,098	83,423	11,486	TBD	0	0	TBD	TBD

FY 2017 Request	TEC	106,181	46,055	77,016	1,103	TBD	0	0	TBD	TBD
	OPC	48,014	5,043	6,407	10,383	TBD	0	0	TBD	TBD
	TPC	154,195	51,098	83,423	11,486	TBD	0	0	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)	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 sludge 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		TBD	
Utilities	0		0	
Maintenance & Repair	0		0	
Total	TBD		TBD	

9. Required D&D Information

Area	Square Feet
Area of new construction	(a)
Area of existing facility(s) being replaced and demolition & decontaminated by this project	
Area of additional demolition & decontamination 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 plus Award 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 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 retrieve waste from the past production of nuclear materials stored in the underground tank farms at the Hanford Site, treat waste to standards that are protective of human health and the environment, prepare 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 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 pursuing the construction of the Low-Activity Waste Facility, Balance of Facilities and Analytical Laboratory and 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)). The Department is also continuing with those activities necessary to resolve the technical issues associated with the Pretreatment and High-Level Waste facilities. Since the Low-Activity Waste Facility, Balance of Facilities and Analytical Laboratory are nearest to completion, Department is pursuing activities necessary for the start-up and operations of these facilities.

Consistent with the Department's intent to complete 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 2017 budget includes support for analysis and preliminary design of a Low-Activity Waste Pretreatment System Facility. Pursuing the completion of the Low-Activity Waste Facility, the Balance of Facilities, and the Analytical Laboratory allows DOE to address the most mobile tank waste (liquid) in the near term while in parallel working to resolve the technical and design 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 $75,413,000.

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. This agreement, 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 Atomic Energy Act authority. 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 (E.D. Wash.). The Consent Decree covers certain work and scheduled activities for the Waste Treatment and Immobilization Plant and Tank Farms. Since multiple technical and programmatic issues with WTP and the tank farms have arisen since 2010, DOE has informed the state that serious risks still exist which DOE may be unable to meet certain 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. Both DOE and the State of Washington filed a proposal to amend the Consent Decree with the Court on October 3, 2014. In August 2015 the court issued an order (1) directing the parties to submit revised proposals in line with the court's ruling on the extent and nature of the modifications that would be permissible, and (2) reflecting the court's intent to use a three-member expert panel to assist the court with the technical aspects of the proposals. The parties submitted revised proposals in November 2015, and an expert panel has been appointed. The Court's ruling on these motions could change the Department's current Consent Decree obligations. The Office of River Protection and WTP remain a high priority for EM and the Department.

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.
- Wastren Advantage, Incorporated to provide analytical testing and services required to operate the 222-S Laboratory that is responsible for the analysis of highly radioactive waste samples in support of all the Hanford projects. The estimated period of performance for the contract is 9/25/2015 – 9/24/2020, consisting of one 2-year base period and three 1-year option periods. It is a fixed price award fee contract.

Highlights of the FY 2017 Budget Request

The Office of River Protection's FY 2017 budget request represents planned efforts for continued progress toward 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 and maintenance of infrastructure necessary to enable waste treatment operations; to advance construction work at 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 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 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, some construction, and the resolution of technical issues. 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 2017 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 ($73,000,000). 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.

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. 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 advancing the completion of the design, procurement and construction of the Low-Activity Waste Facility, Balance of Facilities and Analytical Laboratory necessary to operate the Low-Activity Waste Facility independent of the Pretreatment and High-Level Waste Facilities. DOE expects construction of these facilities to be nearly complete during FY 2017 with startup and commissioning activities continuing.

The operations costs of the Low-Activity Waste Facility, the Analytical Laboratory, and the majority of the Balance of Facilities, are captured in a new control element beginning in FY 2017. The element will capture activities supporting operations of Low-Activity Waste Facility, the Analytical Laboratory and the Balance of Facilities post-project completion (Critical Decision-4). The first phase of Waste Treatment and Immobilization Plant operations for the direct feed of the Low-Activity Waste Facility will vitrify low-activity tank wastes. The activities in FY 2017 support the procurement of spare parts and consumable commodities necessary to support operations. The remaining Waste Treatment and Immobilization Plant facilities, the High-Level Waste Facility and the Pretreatment Facility, will be isolated from the operational facilities and remain under construction under the continuing Waste Treatment and Immobilization Plant Project.

River Protection

Funding ($K)

	FY 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs FY 2016
Defense Environmental Cleanup					
Office of River Protection					
Tank Farm Activities					
ORP-0014 / Radioactive Liquid Tank Waste Stabilization and Disposition	545,000	545,000	724,000	794,456	+70,456
Waste Treatment and Immobilization Plant					
ORP-0060 / Major Construction-Waste Treatment Plant	667,000	667,000	690,000	690,000	0
ORP-0070 / Waste Treatment Plant Commissioning	0	0	0	3,000	+3,000
Subtotal, Waste Treatment and Immobilization Plant	**667,000**	**667,000**	**690,000**	**693,000**	**+3,000**
Total, Office of River Protection	**1,212,000**	**1,212,000**	**1,414,000**	**1,487,456**	**+73,456**
Infrastructure Recapitalization					
ORP-0202 / General Plant Projects	0	0	0	12,509	+12,509
Total, Defense Environmental Cleanup	**1,212,000**	**1,212,000**	**1,414,000**	**1,499,965**	**+85,965**

River Protection Explanation of Major Changes ($K)

	FY 2017 vs FY 2016
Defense Environmental Cleanup	
Office of River Protection	
Tank Farm Activities	
ORP-0014 / Radioactive Liquid Tank Waste Stabilization and Disposition	
• Increase reflects the activities required in the tank farms to support A/AX Single Shell tank retrievals; upgrades to the Effluent Treatment Facility; support for Tank Farms critical spares for retrievals; and modifications to Double Shell Tank AP-107 to support feed to the Low Activity Waste Pretreatment System. Additionally, the increase reflects a redistribution of $12,509,000 to new General Plant Projects PBS ORP-0202.	+70,456
Waste Treatment and Immobilization Plant	
ORP-0070 / Waste Treatment Plant Commissioning	
• The increase reflects the procurement of parts and the initiation of commissioning activities for the Low Activity Waste Facility, Analytical Laboratory, and the Balance of Facilities.	+3,000
Infrastructure Recapitalization	
ORP-0202 / General Plant Projects	
• The increase reflects the establishment of a new PBS for Recapitalization/GPP projects.	+12,509
Total, River Protection	**+85,965**

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 67 tanks are assumed to have leaked a total of about 1 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 Facility.

This project also includes General Plant Projects as well as direct maintenance and repair that are applicable to these areas.

Radioactive Liquid Tank Waste Stabilization and Disposition (PBS: ORP-0014)

Activities and Explanation of Changes

FY 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
$724,000	**$794,456**	**+$70,456**
• Maintain Tank Farms in a safe and compliant manner. • Continue 222-S Laboratory operations. • Continue 242-A Evaporator campaigns. • Complete Effluent Treatment Facility modifications and restart 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	• Maintain Tank Farms in a safe and compliant manner. • Continue 222-S Laboratory operations. • Continue 242-A Evaporator campaigns. • Continue 242-A Evaporator operations and maintenance. • Continue Effluent Treatment Facility operations and upgrades. • Conduct Single-Shell/Double-Shell Tank Integrity assessments. • Continue tank farms preventive/corrective maintenance activities. • Continue Phase 2 activities for the Hanford Tank	• Increase reflects the activities required in the tank farms to support A/AX Single Shell tank retrievals; upgrades to the Effluent Treatment Facility; support for Tank Farms critical spares for retrievals; and modifications to Double Shell Tank AP-107 to support feed to the Low Activity Waste Pretreatment System. Additionally, the increase reflects a redistribution of $12,509,000 to new General Plant Projects PBS ORP-0202.

Activity Waste Pretreatment System.

- Continue design of the Low Activity Waste Pretreatment System project and work towards a CD-2 decision.
- Conduct design, construction, and installation of infrastructure activities to support A/AX Single-Shell Tank Farm retrievals.
- Continue design activities for the L-780 electrical upgrade project and initiate construction activities.
- Continue work on developing and fielding the DNFSB Recommendation 2012-2 flammable gas safety significant support system.
- Support design, construction and installation of infrastructure and initiate retrieval activities to remove waste from leaking double-shell tank AY-102.
- Initiate Technical Maturation Integrated Scale Testing for LAWPS.
- Continue C Tank Farm waste retrieval activities from the remaining tanks.

Vapor Assessment Report recommendations.

- Complete retrieval of Double-Shell Tank AY-102.
- Initiate retrieval of Single-Shell Tank in A/AX Farm.
- Continue upgrades to Double-Shell Tank AP-107 to support feed to Low-Activity Waste Pretreatment System.
- Complete Low-Activity Waste Pretreatment System Preliminary Design to a design maturity of 90%.
- Complete Low-Activity Waste Pretreatment System engineering scale integrated testing.
- Initiate Low-Activity Waste Pretreatment System long-lead procurement.
- Submit Low-Activity Waste Pretreatment System permit modification requests to Washington State Department of Ecology.

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 facility complexes: 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 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
$690,000	$690,000	0

Low-Activity Waste Facility –
Design Activities:
- 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 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 system checkout, conduct

Low-Activity Waste Facility –
Design Activities:
- Issue Design Completion Lists for various Systems including; Instrument Air System ISA, Non-Radioactive Liquid Waste Disposal NLD, Primary Offgas Process Sys 1 LOP1, Secondary Offgas/Vessel Vent Process LVP
- Issue C1V thru C5V Phase 2B System Design Description
- Submit DSA to DOE for Review/Comment
- Provide NSE Engineering Support

Procurement Activities:
- Complete Controls and Instrumentation Procurement

Construction Activities:
- Fire Detection - Complete Fire Alarm System Test Plan and Testing
- Complete Electrical Ground Cable - All Elevation
- Low-Activity Waste - Melter #1 Ready for Startup
- Low-Activity Waste - Melter #2 Ready for Startup
- Roofing and Siding - Subcontract Complete
- Insulation - Heat Trace - Subcontract Complete
- Fire Detection - Subcontract Complete

Startup Activities:
- Continue Procedure Development and revisions

Analytical Laboratory and Balance of Facilities –
Design Activities:
- Analytical Laboratory:
  - Develop the Technical Safety Requirements Document
  - Prepare and Issue DSA Update 1
- Balance Of Facilities:

- No change.

component testing, and continue procedure development

Analytical Laboratory and Balance of Facilities –

Design Activities:

- Analytical Laboratory:
  - Continue engineering support to construction, Engineering & Nuclear Safety and Commissioning
  - Issue various Engineering Design Completion Lists including Facility Network Infrastructure, Mechanical Handling Control, Process Control System, Stack Discharge Monitoring
  - Prepare the Technical Safety Requirements Document for the Documented Safety Analysis
- Balance Of Facilities:
  - Continue engineering support to construction and Engineering, Nuclear Safety & Commissioning
  - Issue Engineering Design Completion Lists for various systems including Communications Electrical, High Pressure Steam, Process Control, Ammonia Reagent
  - Complete Emergency Turbine Generator design

Procurement Activities:

- Analytical Laboratory:
  - Complete procurement of radiation monitoring equipment
- Balance of Facilities:
  - Equipment procurement for Balance of Facilities modifications in support of Direct Feed Low-Activity Waste Facility

Construction Activities:

- Analytical Laboratory:
  - Issue Design Completion List Support for the Steam Plant Facility Low Voltage Electrical System
  - Issue Design Completion List Support for the Steam Plant Facility Process Control System
  - Issue Design Completion List Support for the Steam Plant Facility Communications Electrical System
  - Issue Area Design Completion List Support for the Fuel Oil Facility

Procurement Activities:

- Analytical Laboratory:
  - Complete Controls and Instrument Procurement
- Balance of Facilities:
  - Receive Pressure Relief Valves
  - Complete Procurement

Construction Activities:

- Analytical Laboratory:
  - Fire Protection - Subcontract Complete
- Balance of Facilities:
  - Complete Construction of the Glass Former Storage
  - Complete Construction of the Steam Plant Facility
  - Complete Construction of the Chiller Compressor Plant
  - Complete Construction of the Water Treatment Building

Startup Activities

- Analytical Laboratory:
  - Continue Procedure Development and revisions
- Balance of Facilities:
  - Complete Electrical Distribution System Testing on Medium Voltage

- Install batteries and racks
- Balance of Facilities:
  - Complete construction of the Balance of Facilities Anhydrous Ammonia Facility
  - Complete construction of above ground process piping
  - Install telecommunication enclosures

Startup Activities

- Analytical Laboratory:
  - Complete methods development in support of Low -Activity Waste
  - Start Analytical Laboratory Operations Training (Group 1)
  - Start Documented Safety Analysis training
- Balance of Facilities:
  - Complete startup acceptance from construction of communications electrical system
  - Complete startup acceptance from construction of Process Control system, including walk downs, for Switchgear Buildings 87 and 91
  - Continue cold commissioning training
  - Continue system checkout, conduct component testing, and continue procedure development
  - Start removing and replacing piping flushing spools

High-Level Waste Facility –

Design Activities:

- Continue work on ventilation system design
- Complete High Efficiency Particulate Air AG-1 Testing and Reporting, High Efficiency Particulate Air filters received for Phase II Electrical System (Site Energization)

High-Level Waste Facility (HLW) –

Design Activities:

- Authorization for High-Level Waste procurement and construction consistent with the resolution of technical issues
- Procurement Activities:
- Deliver RLD-VSL-0008 vessel (Plant Wash)

Construction Activities

- Complete civil build-out of walls at the 58’ elevations and slabs at the +58’ elevation

Startup Activities:

- No Scope

Pretreatment Facility –

Design Activities:

- Issue final pulse jet mixer control recommendation study
- Continue full scale vessel testing in the 16-ft. vessel for design confirmation
- Finalize localized corrosion design basis
- Finalize the basis of design for the standard high solids vessel
- Update the design concept study reflecting Pretreatment Facility optimization

Procurement Activities:

- Continue management of purchase orders still in suspension

Construction Activities:

- Continue preservation maintenance activities

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
- Continue construction activities and increase craft work in the +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:

- Continue work on the safety design strategy and system descriptions and Preliminary

Documented Safety Analysis

- Start Full Scale Vessel Testing (FSVT) in 16ft standardized high solids vessel design
- Establish a post FSVT path 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
- Continue testing on Erosion/Corrosion
- Continue Radioactive Liquid Waste Disposal System Vessel decommissioning

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Waste Treatment Plant Commissioning (PBS: ORP-0070)

Overview

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

This PBS provides for the activities that are outside of the line item 01-D-416, Waste Treatment and Immobilization Plant, Hanford WA, but are required to support the treatment of tank wastes in the Low-Activity Facility, the Analytical Laboratory, and the Balance of Facilities, including the implementation of the strategy of the direct feed Low-Activity Waste approach. This is the first phase of the Waste Treatment and Immobilization Plant operations.

Waste Treatment Plant Commissioning (PBS: ORP-0070)

Activities and Explanation of Changes

FY 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
0	**$3,000**	**+$3,000**
• No activities.	• Initiate Commissioning activities that are not currently included in the line item 01-D-416, Waste Treatment and Immobilization Plant, such as the procurement of parts, training, etc.	• The increase reflects the procurement of parts and the initiation of commissioning activities for the Low Activity Waste Facility, Analytical Laboratory, and the Balance of Facilities.

General Plant Projects (PBS: ORP-0202)

Overview

This PBS can be found within the Defense Appropriation.

The Recapitalization program, the key to arresting the declining state of EM infrastructure, prioritizes investments at a site level to improve the condition and extend the design life of the structures, capabilities, and/or systems. Investments are targeted to improve the reliability, sustainability, productivity, and efficiency of EM's general purpose infrastructure to reduce overall operating costs. They also reduce safety, environmental, and program risk associated with facilities and systems that are well beyond their design life. Investments are also made to manage risks in existing capabilities by prioritizing investments to upgrade and improve the reliability, efficiency, and capability of programmatic equipment and associated infrastructure to meet Environmental Management requirements.
Infrastructure and Safety investments include costs for minor construction projects, capital equipment, and Other Project Costs for general purpose infrastructure Line Item construction projects. Infrastructure and Safety also funds some deactivation and disposal of excess infrastructure, resulting in surveillance and maintenance cost avoidance and reduced risk to workers, the public, the environment, and programs. In support of sustainability and energy performance goals, Recapitalization projects will include energy conservation measures to the greatest extent practicable.

The Capability Based Investments (CBI) are multi-year projects and strategies to sustain, enhance or replace capabilities through focused investments supporting the core programmatic requirements across the enterprise. These investments address needs beyond any single facility, activity, or system and are essential to achieving program mission objectives. Over the years, EM's capabilities have been degraded due to aging, broken or outdated equipment and supporting systems. To support ongoing and future cleanup activities, The Capability Based Investments invests in projects to reduce risk to the mission and ensure needed capabilities are available for future mission work. The Capability Based Investments provides a corollary to EM's line-item construction by funding smaller projects to enhance or sustain critical EM capabilities across the enterprise. The Capability Based Investments projects include: minor construction projects, Capital Equipment Projects, and Expense Funded Projects. The Capability Based Investments subprogram also funds Other Project Costs for EM-specific infrastructure Line Item construction projects.

General Plant Projects (PBS: ORP-0202)

Activities and Explanation of Changes

FY 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
0	**$12,509**	**+$12,509**
• No activities, as this PBS was established in FY 2017.	• Specific Continue design and construct 222-S Ancillary Equipment Addition. • Initiate design and construct 222-S Archive Storage Facility.	• The increase reflects the establishment of a new PBS for Recapitalization/GPP projects.

- Continue construction of 222-S Standard Laboratory.
- Initiate design and construction of 10 Wide Mobile Facility on 4th Street.

Office of River Protection
Capital Summary ($K)

	Total	Prior Years	FY 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs FY 2016
Capital Operating Expenses Summary (including Major Items of Equipment (MIE))							
Capital Equipment > $500K (including MIE)	0	0	0	0	0	0	0
Plant Projects (GPP and IGPP) (<$10M)	0	0	8,263	8,263	12,614	12,509	-105
Total, Capital Operating Expenses	**0**	**0**	**8,263**	**8,263**	**12,614**	**12,509**	**-105**
Capital Equipment > $500K (including MIE)	0	0	0	0	0	0	0
Total, Capital Equipment (including MIE)	**0**	**0**	**8,263**	**8,263**	**12,614**	**12,509**	**-105**
Plant Projects (GPP and IGPP) (Total Estimated Cost (TEC) <$10M)							
River Protection							
SY Farm Exhauster Upgrade	0	0	8,063	8,063	0	0	0
AP Farm Primary Exhauster Replacement	0	0	0	0	2,390	0	-2,390
Tank Farms Electrical Upgrade	0	0	200	200	8,800	0	-8,800
Design and Construct 222-S Ancillary Equipment Addition	0	0	0	0	624	1,073	+1,073
Design and Construct 222-S Archive Storage Facility	0	0	0	0	0	2,100	+2,100
Design and Construct 222-S Standard Laboratory	0	0	0	0	800	5,400	0
Design and Construct 10 Wide Mobile Facility on 4th Street	0	0	0	0	0	2,150	+2,150
Design and Construct 10 Wide Mobile Facility on 4th Street across from Purex	0	0	0	0	0	1,786	+1,786
	0	**0**	**8,263**	**8,263**	**12,614**	**12,509**	**-105**
Total, Plant Projects (GPP and IGPP) (Total Estimated (TEC) <$10M	**0**	**0**	**8,263**	**8,263**	**12,614**	**12,509**	**-105**
Total, Capital Summary	**0**	**0**	**8,263**	**8,263**	**12,614**	**12,509**	**-105**

Office of River Protection
Construction Projects Summary ($K)

	Total	Prior Years	FY 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs FY 2016
01-D-416, Waste Treatment and Immobilization Plant, Hanford WA							
01-D-16A-D WTP Subprojects A-D							
Total Estimate Cost (TEC)	TBD	5,801,563	563,000	563,000	595,000	593,000	-2,000
Other Project Costs (OPC)	0	0	0	0	0	0	0
01-D-16E Pretreatment Facility							
Total Estimate Cost (TEC)	TBD	3,396,050	104,000	104,000	95,000	97,000	+2,000
Other Project Costs (OPC)	0	0	0	0	0	0	0
Total Project Cost (TPC) 01-D-416	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**
15-D-409, Low Activity Waste Pretreatment System (Hanford) (ORP-0014)							
Total Estimate Cost (TEC)	363,500	0	23,000	23,000	75,000	73,000	-2,000
Other Project Costs (OPC)	29,897	4,397	5,000	5,000	800	600	-200
Total Project Cost (TPC) 15-D-409	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**

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

1. Significant Changes and Summary

Significant Changes
This Construction Project Data Sheet is an update of the FY 2016 Construction Project Data Sheet and does not include a new start for FY 2017.

Because of the technical, safety, quality, and management, and 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 and the project completion date. As a result, DOE and its contractor are currently in negotiations to determine the new contract value. DOE will revise the project performance baseline as a first priority for the Low-Activity Waste Facility, Analytical Laboratory, and Balance of Facilities portion of the project. This is the first incremental baseline change proposals to update the performance baseline. 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, the contract and the performance baseline to complete these facilities will be updated. This change represents the forecasted funding needs for FY 2017 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 2017 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. The current approved performance baseline cost of $12,263,000,000 and Critical Decision -4, Project Completion schedule for November 2019, are still utilized.

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. As part of this process, the revised 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 Chief Executive for Project Management. 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 increased production engineering with some 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 and resumption of design and construction.

The Department continues to focus on strategies and key actions that optimize design, procurement, construction, startup, commissioning and 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 June 2015, the Waste Treatment and Immobilization Plant project is making considerable progress in resolving the technical, safety, quality, and management, 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. 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 Environment, Health, Safety & Security and the Office of Enterprise Assessments in 2011, 2012, 2014 and 2015. 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 Environment, Health, Safety & Security safety culture assessments. In addition, both the Office of River Protection and the Waste Treatment and Immobilization Plant contractor, Bechtel National, Inc. have developed safety culture sustainment plans as part of the continual efforts to improve.

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. Personnel from the Waste Treatment and Immobilization Plant contractor, Office of River Protection, DOE contractors, and the National Laboratories, are utilized to provide leadership and oversight for resolution of these issues. Eight technical sub-teams have been established and are focused on nine specific issue areas. Significant progress has been made in resolving the technical issues with a key focus on hydrogen generation, criticality and erosion-corrosion. Phase 1 of the full scale test platform program has been completed and Phase 2 of the testing program, using a 13 foot vessel has been initiated with a focus on control limits to support mixing and to test system reliability. Platform testing using the standardized 16 foot vessel is expected to begin in FY 2016 and all technical issues resolution is forecasted to be completed in FY 2018.

The work of technical sub-teams teams has evolved such that the project is now focused on 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 mixing performance design of pulse-jet mixed vessels that contain wastes with low-to-high solids concentrations and that are installed in non-accessible areas of the Waste Treatment and

Immobilization Plant. Solids in wastes anticipated in some of the pulse-jet mixed vessels, as currently envisioned, could interfere with waste-level measurements and pulse-jet mixer control in vessels, which could lead to overblow events (i.e., air discharged out of the pulse-jet mixers into the vessel). The cumulative effect of overblows could exceed the vessel fatigue design limits and cause a structural failure of the components within the vessels impacting long-term operability.

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, up to eight large vessel designs in the Pretreatment Facility with up to 14 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 on pulse-jet mixer effectiveness. 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, was tested first at a small-scale in early 2015 and will be tested at full-scale in FY 2016 and FY 2017 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. Following successful testing, this standard vessel design will be used to complete the design of 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 though 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 will be less complex upon adoption of a smaller, standardized pulse-jet mixed vessel design, which will be designed to more effectively mix these wastes.

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 and peer reviews utilizing nationally recognized nuclear safety experts. Any testing will be completed as a component of the standard high solids vessel testing program 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 and prevent their accumulation within the vessel. 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.

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 the black cells and hard-to-reach areas of the High-Level Waste and Pretreatment Facilities. 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 re-evaluated 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 (funded by the Office of River Protection). 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 has been performed on the Low-Activity Waste Facility and may be performed on the 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. Critical Decision (CD)-0 was approved by the Department on September 11, 2015.

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
FY 2016	SEP 1995		SEP 1996	04/21/2003	1Q FY2016	04/21/2003	N/A	TBD
FY 2017[5]	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 Alternative Selection and Cost Range
CD-2 – Approve 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 Completion
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 and 'Final Design Complete' dates for the Low-Activity Waste Facility will be updated after rebaselining and contract execution for Direct Feed Low-Activity Waste, expected in FY 2016. The Critical Decision-4 and 'Final Design Complete' dates 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

(dollars in thousands)

	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
FY 2017	0	12,263,000	12,263,000	0	0	0	12,263,000

Notes:
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. 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. As part of this process, the new performance baseline will be available for an External Independent Review and then be presented for approval to the Chief Executive for Project Management. 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 and Immobilization Plant Key Project Performance Parameters for the Low-Activity Waste facility are a minimum treatment capacity 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 Office of River Protection 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 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 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 at 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 treatment capacity 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
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[em]	684,480	695,552	811,862
FY 2006	520,758	524,814	516,003
FY 2007[fghm]	690,000	621,000	550,991
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 [jm]	738,699	738,699	794,774
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	717,414
FY 2016	690,000	690,000	750,000
FY 2017	690,000	690,000	720,000
Outyears[k]	1,018,387	1,018,387	1,182,934
Total, Construction	12,263,000	12,263,000	12,263,000
Total Project Cost (TPC)			
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[em]	684,480	695,552	811,862
FY 2006	520,758	524,814	516,003
FY 2007[fghm]	690,000	621,000	550,991
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 [jm]	738,699	738,699	794,774
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	717,414
FY 2016	690,000	690,000	750,000
FY 2017	690,000	690,000	720,000
Outyears[k]	1,018,387	1,018,387	1,182,934
Total, TPC	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 FY 2016 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. As part of this process, the revised performance baseline will be available for an External Independent Review and then presented for approval to the Chief Executive for Project Management. 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.
[n] Costs include costs for reviews conducted by the Office of Project Management Oversight and Assessments.

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
Total Estimated Cost (TEC)			
Construction			
Prior Years[a]	1,891,449	1,891,449	1,715,169
FY 2006[f]	373,243	373,243	361,715
FY 2007[b]	479,000	450,600	420,421
FY 2008[cf]	433,023	461,423	488,270
FY 2009[df]	425,000	425,000	419,822
FY 2010[f]	365,000	365,000	456,194
FY 2011[f]	379,419	379,419	412,555
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	583,319
FY 2016	595,000	595,000	620,000
FY 2017	593,000	593,000	620,000
Outyears[e]	TBD	TBD	TBD
Total Construction	TBD	TBD	TBD
Total Project Cost (TPC)			
Prior Years[a]	1,891,449	1,891,449	1,715,169
FY 2006[f]	373,243	373,243	361,715
FY 2007[b]	479,000	450,600	420,421
FY 2008[cf]	433,023	461,423	488,270
FY 2009[df]	425,000	425,000	419,822
FY 2010[f]	365,000	365,000	456,194
FY 2011[f]	379,419	379,419	412,555

	(dollars in thousands)		
	Appropriations	Obligations	Costs
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	583,319
FY 2016	595,000	595,000	620,000
FY 2017	593,000	593,000	620,000
Outyears[e]	TBD	TBD	TBD
Total TPC	TBD	TBD	TBD

[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 2016 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. As part of this process, the revised performance baseline will be available for an External Independent Review and then presented for approval to the Chief Executive for Project Management. 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
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[df]	265,000	265,000	296,791
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	134,155
FY 2016	95,000	95,000	130,000

	(dollars in thousands)		
	Appropriations	Obligations	Costs
FY 2017	97,000	97,000	100,000
Outyears[e]	TBD	TBD	TBD
Total Construction	TBD	TBD	TBD
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[df]	265,000	265,000	296,791
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	134,155
FY 2016	95,000	95,000	130,000
FY 2017	97,000	97,000	100,000
Outyears[e]	TBD	TBD	TBD
Total TPC	TBD	TBD	TBD

[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 2016 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. As part of this process, the revised performance baseline will be available for an External Independent Review and then presented for approval to the Chief Executive for Project Management. 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			

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Engineering/Design	2,547,977	2,547,977	1,475,000
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 2016 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. As part of this process, the revised performance baseline will be available for an External Independent Review and then presented for approval to the Chief Executive for Project Management. 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	TBD	1,486,023	1,475,000
Equipment/Procurement[a]	TBD	1,345,590	1,125,000
Facility Construction[b]	TBD	2,154,763	2,155,000
Commissioning[c]	TBD	993,671	876,000
Technical Support/Transition	TBD	98,624	50,000
Contingency/Fee[d]	TBD	984,864	100,000
Total, Construction	TBD	7,063,535	3,861,000

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline[e]
Total, TEC	TBD	7,063,535	3,861,000
Contingency/Fee, TEC	TBD	984,864	100,000
Total, TPC	TBD	7,063,535	3,861,000
Total, Contingency/Fee	TBD	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

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline[e]
Total Estimated Cost (TEC)			
Construction			
Engineering/Design	TBD	1,061,954	N/A
Equipment/Procurement[a]	TBD	1,035,158	N/A
Facility Construction[b]	TBD	1,565,874	1,920,000
Commissioning[c]	TBD	415,757	N/A
Technical Support/Transition	TBD	86,376	N/A
Contingency/Fee[d]	TBD	1,034,346	N/A
Total, Construction	TBD	5,199,465	1,920,000
Total, TEC	TBD	5,199,465	1,920,000
Contingency/Fee, TEC	TBD	1,034,346	N/A
Total, TPC	TBD	5,199,465	1,920,000
Total, Contingency/Fee	TBD	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 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	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
	TEC	4,350,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4,350,000
FY 2003	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
	TEC	4,350,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4,350,000
FY 2004	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
	TEC	5,781,000	0	0	0	0	0	0	0	5,781,000
FY 2005	OPC	0	0	0	0	0	0	0	0	0
	TPC	5,781,000	0	0	0	0	0	0	0	5,781,000
	TEC	5,781,000	0	0	0	0	0	0	0	5,781,000
FY 2006	OPC	0	0	0	0	0	0	0	0	0
	TPC	5,781,000	0	0	0	0	0	0	0	5,781,000
	TEC	5,781,000	0	0	0	0	0	0	0	5,781,000
FY 2007	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	9,880,838	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	9,880,838	690,000	690,000	690,000	225,000	87,162		0	12,263,000
	TEC	9,844,559	690,000	690,000	640,000	398,441	0	0	0	12,263,000
FY 2009	OPC	0	0	0	0	0	0	0	0	0
	TPC	9,844,559	690,000	690,000	640,000	398,441	0	0	0	12,263,000
	TEC	9,844,559	690,000	690,000	640,000	398,441		0	0	12,263,000
FY 2010	OPC	0	0	0	0	0	0	0	0	0
	TPC	9,844,559	690,000	690,000	640,000	398,441	0	0	0	12,263,000
	TEC	9,894,737	690,000	690,000	640,000	348,263	0	0	0	12,263,000
FY 2011	OPC	0	0	0	0	0	0	0	0	0
	TPC	9,894,737	690,000	690,000	640,000	348,263	0	0	0	12,263,000
	TEC	10,624,737	600,000	380,000	355,000	240,000	63,263		0	12,263,000
FY 2012	OPC	0	0	0	0	0	0	0	0	0
	TPC	10,624,737	600,000	380,000	355,000	240,000	63,263	0	0	12,263,000
	TEC	9,887,613	690,000	203,972	0	0	0	0	1,481,415	12,263,000
FY 2013	OPC	0	0	0	0	0	0	0	0	0
	TPC	9,887,613	690,000	203,972	0	0	0	0	1,481,415	12,263,000
	TEC	9,887,613	690,000	203,972	0	0	0	0	1,481,415	12,263,000
FY 2014	OPC	0	0	0	0	0	0	0	0	0
	TPC	9,887,613	690,000	203,972	0	0	0	0	1,481,415	12,263,000
FY 2013	TEC	9,887,613	690,000	203,972	0	0	0	0	1,481,415	12,263,000
Reprogramm	OPC	0	0	0	0	0	0	0	0	0
ing	TPC	9,887,613	690,000	203,972	0	0	0	0	1,481,415	12,263,000
	TEC	9,887,613	690,000	193,972	0	0	0	0	1,491,415	12,263,000
FY 2015	OPC	0	0	0	0	0	0	0	0	0
	TPC	9,887,613	690,000	193,972	0	0	0	0	1,491,415	12,263,000
	TEC	9,864,613	690,000	205,972	0	0	0	0	1,502,415	12,263,000
FY 2016	OPC	0	0	0	0	0	0	0	0	0
	TPC	9,864,613	690,000	205,972	0	0	0	0	1,502,415	12,263,000
	TEC	9,864,613	690,000	690,000	0	0	0	0	1,018,387	12,263,000
FY 2017	OPC	0	0	0	0	0	0	0	0	0
	TPC	9,864,613	690,000	690,000	0	0	0	0	1,018,387	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 2016 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. As part of this process, the revised performance baseline will be available for an External Independent Review and then presented for approval to the Chief Executive for Project Management. 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

($K)

Request		Prior Years	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	Outyears	Total
FY 2008 Performance Baseline	TEC	5,679,838	389,000	340,000	340,000	73,000	47,162	0	0	6,869,000
	OPC	0	0	0	0	0	0	0	0	0
	TPC	5,679,838	389,000	340,000	340,000	73,000	47,162	0	0	6,869,000
FY 2009	TEC	5,751,524	389,000	336,300	241,000	151,176	0	0	0	6,869,000
	OPC	0	0	0	0	0	0	0	0	0
	TPC	5,751,524	389,000	336,300	241,000	151,176	0	0	0	6,869,000
FY 2010	TEC	5,841,023	375,000	430,000	415,000	262,977	0	0	0	7,324,000
	OPC	0	0	0	0	0	0	0	0	0
	TPC	5,841,023	375,000	430,000	415,000	262,977	0	0	0	7,324,000
FY 2011	TEC	5,686,201	455,000	465,000	415,000	302,799	0	0	0	7,324,000
	OPC	0	0	0	0	0	0	0	0	0
	TPC	5,686,201	455,000	465,000	415,000	302,799	0	0	0	7,324,000
FY 2012	TEC	5,995,702	425,000	280,000	215,000	103,000	44,833	0	0	7,063,535
	OPC	0	0	0	0	0	0	0	0	0
	TPC	5,995,702	425,000	280,000	215,000	103,000	44,833	0	0	7,063,535
FY 2013	TEC	6,376,563	595,000	91,972	0	0	0	0	0	7,063,535
	OPC	0	0	0	0	0	0	0	0	0
	TPC	6,376,563	595,000	91,972	0	0	0	0	0	7,063,535
FY 2014	TEC	6,376,563	595,000	91,972	0	0	0	0	0	7,063,535
	OPC	0	0	0	0	0	0	0	0	0
	TPC	6,376,563	595,000	91,972	0	0	0	0	0	7,063,535
FY 2013 Reprogramming	TEC	6,376,563	595,000	91,972	0	0	0	0	0	7,063,535
	OPC	0	0	0	0	0	0	0	0	0
	TPC	6,376,563	595,000	91,972	0	0	0	0	0	7,063,535
FY 2015	TEC	6,376,563	605,000	81,972	0	0	0	0	0	7,063,535
	OPC	0	0	0	0	0	0	0	0	0
	TPC	6,376,563	605,000	81,972	0	0	0	0	0	7,063,535
FY 2016	TEC	6,364,563	605,000	93,972	0	0	0	0	0	7,063,535
	OPC	0	0	0	0	0	0	0	0	0
	TPC	6,364,563	605,000	93,972	0	0	0	0	0	7,063,535
FY 2017	TEC	6,364,563	595,000	593,000	0	0	0	0	TBD	TBD
	OPC	0	0	0	0	0	0	0	0	0
	TPC	6,364,563	595,000	593,000	0	0	0	0	TBD	TBD

01-D-16E, Pretreatment Facility

($K)

Request		Prior Years	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	Outyears	Total
FY 2008 Performance	TEC	4,201,000	301,000	350,000	350,000	152,000	40,000	0	0	5,394,000
	OPC	0	0	0	0	0	0	0	0	0

Baseline	TPC	4,201,000	301,000	350,000	350,000	152,000	40,000	0	0	5,394,000
	TEC	4,093,035	301,000	353,700	399,000	247,265	0	0	0	5,394,000
FY 2009	OPC	0	0	0	0	0	0	0	0	0
	TPC	4,093,035	301,000	353,700	399,000	247,265	0	0	0	5,394,000
	TEC	4,003,536	315,000	260,000	225,000	135,464	0	0		4,939,000
FY 2010	OPC	0	0	0	0	0	0	0	0	0
	TPC	4,003,536	315,000	260,000	225,000	135,464	0	0	0	4,939,000
	TEC	4,208,536	235,000	225,000	225,000	45,464	0	0	0	4,939,000
FY 2011	OPC	0	0	0	0	0	0	0	0	0
	TPC	4,208,536	235,000	225,000	225,000	45,464	0	0	0	4,939,000
	TEC	4,629,035	175,000	100,000	140,000	137,000	18,430	0	0	5,199,465
FY 2012	OPC	0	0	0	0	0	0	0	0	0
	TPC	4,629,035	175,000	100,000	140,000	137,000	18,430	0	0	5,199,465
	TEC	3,511,050	95,000	112,000	0	0	0	0	1,481,415	5,199,465
FY 2013	OPC	0	0	0	0	0	0	0	0	0
	TPC	3,511,050	95,000	112,000	0	0	0	0	1,481,415	5,199,465
	TEC	3,511,050	95,000	112,000	0	0	0	0	1,481,415	5,199,465
FY 2014	OPC	0	0	0	0	0	0	0	0	0
	TPC	3,511,050	95,000	112,000	0	0	0	0	1,481,415	5,199,465
	TEC	3,511,050	95,000	112,000	0	0	0	0	1,481,415	5,199,465
FY 2013 Reprogramming	OPC	0	0	0	0	0	0	0	0	0
	TPC	3,511,050	95,000	112,000	0	0	0	0	1,481,415	5,199,465
	TEC	3,511,050	85,000	112,000	0	0	0	0	1,491,415	5,199,465
FY 2015	OPC	0	0	0	0	0	0	0	0	0
	TPC	3,511,050	85,000	112,000	0	0	0	0	1,491,415	5,199,465
	TEC	3,500,050	85,000	112,000	0	0	0	0	1,502,415	5,199,465
FY 2016	OPC	0	0	0	0	0	0	0	0	0
	TPC	3,500,050	85,000	112,000	0	0	0	0	1,502,415	5,199,465
	TEC	3,500,050	95,000	97,000	0	0	0	0	TBD	TBD
FY 2017	OPC	0	0	0	0	0	0	0	0	0
	TPC	3,500,050	95,000	97,000	0	0	0	0	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)	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
TBD	TBD	TBD	TBD

Operations will start after the project is completed. These costs are included in PBS ORP-0060, Waste Treatment and Immobilization Plant, 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 facility 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, and then Pretreatment.

15-D-409, Low-Activity Waste Pretreatment System
Hanford, Richland, Washington (ORP-0014)
Project is for Design and Construction

1. Significant Changes and Summary

Significant Changes

This Construction Project Data Sheet is an update of the FY 2016 Construction Project Data Sheet and does not include a new start for budget year FY 2017.

The Critical Decision -1 for this project was approved May 19, 2015. DOE has initiated Preliminary Design.

Summary

The most recent DOE O 413.3B approved Critical Decision is Critical Decision -1 which was approved on May 19, 2015, with a preliminary cost range of $220,000,000 to $470,000,000 and Critical Decision-4 schedule range of January 2021 to May 2025. This Construction Project Data Sheet uses Critical Decision-4 of September 2021 to support the Department's operational schedule of the Direct Feed Low-Activity Waste program. Based on this schedule the cost estimate is $393,397,000.

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

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 2015	2QFY2014		TBD	TBD	TBD	TBD	N/A	TBD
FY 2016	3/17/2014	2Q 2015	2Q 2015	TBD	TBD	TBD	N/A	TBD
FY 2017	3/17/2014	1/15/2015	5/19/2015	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 Alternative Selection and Cost Range
CD-2 – Approve 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 Completion

Note: The Critical Decision dates are only estimates. This project does not have a performance baseline.

	Long Lead Procurement CD-3a
FY 2017	2Q 2017

CD-3a – Long Lead Procurement
Note: The Critical Decision 3a is needed for long lead procurements e.g., cross flow filter, ion exchange.

3. Project Cost History

(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
FY 2017	TBD	TBD	TBD	TBD	N/A	TBD	TBD

Note: The above numbers are only estimates. This project does not have a performance baseline.

Note: No construction, excluding approved long lead procurement and site preparation, will be performed until the project performance baseline has been validated and CD-3 has been approved.

4. Project Scope and Justification

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 Facility. The system will store and feed pretreated waste from the Hanford tank farms to the Low-Activity Waste 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 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. Supporting system designs are also required for (1) the low-activity waste feed staging tanks (after pretreatment, transfers the feed from the Low Activity Waste Pretreatment System facility to the Low-Activity Waste Facility) and (2) for the cesium eluate tank (supports regeneration of the ion exchange resin).

Operation of the Low Activity Waste Pretreatment System along with Low-Activity Waste 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 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	18,600
FY 2016	N/A	N/A	75,000
FY 2017	N/A	N/A	40,700
Outyears	N/A	N/A	TBD
Total, Design	N/A	N/A	TBD
Construction			
FY 2017[a]	N/A	N/A	32,300
Outyears	N/A	N/A	TBD
Total, Construction	N/A	N/A	TBD
TEC			
FY 2015	23,000	23,000	18,600
FY 2016	75,000	75,000	75,000
FY 2017	73,000	73,000	73,000
Outyears	TBD	TBD	TBD
Total, TEC	TBD	TBD	TBD
Other Project Cost (OPC)			
OPC			
FY 2014	4,397	4,397	4,397
FY 2015	5,000	5,000	5000
FY 2016	800	800	800
FY 2017	600	600	600
Outyears	TBD	TBD	TBD
Total, OPC	TBD	TBD	TBD
Total Project Cost (TPC)			
FY 2014	4,397	4,397	4,397
FY 2015	28,000	28,000	23,600
FY 2016	75,800	75,800	75,800
FY 2017	73,600	73,600	73,600
Outyears	TBD	TBD	TBD
Total, TPC	TBD	TBD	TBD

[a] Funds will be used for long lead procurement items and site preparation activities.

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
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	N/A
Other Project Cost (OPC)			
OPC			
Conceptual Planning	TBD	7,200	N/A
Conceptual Design	TBD	2,800	N/A
Office of Project Management Oversight and Assessments Reviews	TBD	TBD	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

This project does not have a performance baseline.

7. Schedule of Appropriation Requests

(dollars in thousands)

Request		Prior Years	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY2021	Outyears	Total
FY 2015	TEC	23,000	0	0	0	0	0	0	0	TBD
	OPC	0	0	0	0	0	0	0	0	TBD
	TPC	23,000	0	0	0	0	0	0	0	TBD
FY 2016	TEC	23,000	75,000	0	0	0	0	0	TBD	TBD
	OPC	0	0	0	0	0	0	0	TBD	TBD
	TPC	23,000	75,000	0	0	0	0	0	TBD	TBD
FY 2017	TEC	23,000	75,000	73,000					TBD	TBD
	OPC	9,397	800	600					TBD	TBD
	TPC	32,397	75,800	73,600					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)	40
Expected Future Start of D&D of this Capital Asset (fiscal quarter)	TBD

(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
Maintenance & Repair	TBD	TBD	TBD	TBD
Total, Operations & Maintenance	TBD	TBD	TBD	TBD

*Includes Utilities and Maintenance

9. D&D Information

Area	Square Feet
N/A	N/A

This project is providing new capability and is not replacing a current capability.

The LAWPS project is not exempted from “one-for-one” replacement; therefore, project has obtained 20,000 square feet for approval on February 2015. Once the LAWPS facility is built, the actual SF will be entered into Facilities Information Management System and will offset the majority of the banked space for this facility.

10. Acquisition Approach

An Acquisition Strategy for completion of the design and construction phase of this project was approved as part of Critical Decision -1. The Acquisition Strategy includes alternatives such as having the Tank Farm Contractor subcontract for construction services or DOE could directly contract with a construction firm or DOE could contract with another entity.

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 legacy transuranic waste, high level radioactive liquid waste removal and stabilization with subsequent closure of six high level waste tanks, and over 50 years of successful spent (used) nuclear fuel receipts. The Savannah River Site Office of Environmental Management mission 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 secure storage of foreign and domestic nuclear materials including spent 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 in FY 2017 is estimated to be $145,700,000.

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, oversight groups such as the Defense Nuclear Facilities Safety Board, 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 to facilitate cleanup of the Site. As a result of 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 Permits
- 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 in accordance Section 3021(b) of the Resource Conservation and Recovery Act as added by the Federal Facility Compliance Act
- 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 the Savannah River Site is conducted through the issuance and execution of contracts to large and small businesses. DOE - 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 the Savannah River Site include:

- Savannah River Nuclear Solutions LLC: Contract is a Management and Operating (M&O) contract for management and operation of the infrastructure, nuclear materials facilities, the Savannah River National Laboratory, soil and water remediation, and deactivation and decommissioning work at the Savannah River Site. The contract covers the period

August 1, 2008 - July 31, 2013 with options through July 31, 2018. DOE-SR has exercised 38 months of options through September 30, 2016. This contract is a cost plus award fee contract.

- Savannah River Remediation LLC: Contract covers liquid radioactive waste storage, treatment, stabilization, and disposition and cleaning and closing of the liquid radioactive 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, which has been exercised, is for the continuation of the current work under the contract and the second option is for the operation of Salt Waste Processing Facility (under construction by a separate contractor). This contract is a cost plus award fee contract.
- Centerra Group, LLC: Contract covers the paramilitary guard services at the Savannah River Site for the period of performance from October 08, 2009 to October 07, 2014, with option period one from October 08, 2014 to October 07, 2017, and option period 2 from October 08, 2017 to October 07, 2019. The Department has exercised option period one. It is a cost plus award fee contract.
- Parsons Government Services, Inc.: Contract covers design, construction, commissioning, and the first year of operations of the Salt Waste Processing Facility. Construction completion target date is December 31, 2016. Commissioning complete and start of radioactive operations is targeted for December 2018. This contract is a cost plus incentive fee contract.
- Ameresco Federal Solutions: 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 to produce steam in support of site missions.

Highlights of the FY 2017 Budget Request

The Nuclear Material Stabilization and Disposition Program will continue operation of H-Canyon/HB-Line in FY 2017, the nation's only production-scale, shielded chemical separations facility still in operation, in compliance with 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). This includes the processing of spent (used) nuclear fuel in accordance with an Amended Record of Decision signed in March 2013.

As a result of the interdependency of activities, the Spent Nuclear Fuel Stabilization and Disposition Program has been merged into the Nuclear Material Stabilization and Disposition Program and will continue to support fuel receipts for the United States of America's policy on minimizing highly enriched uranium around the world (National Nuclear Security Administration mission), and supporting programmatic missions of the Office of Nuclear Energy and the Office of Science.

The Solid Waste Stabilization and Disposition Program will continue to store, treat and dispose of 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.

The Liquid Waste Program will achieve additional risk reduction through canister production at the Defense Waste Processing Facility and disposition of treated salt waste in Saltstone Disposal Units. The FY 2017 request includes funding for three line item construction projects - Salt Waste Processing Facility ($160,000,000), Saltstone Disposal Unit #6 ($11,256,000) and Saltstone Disposal Unit #7 ($12,686,000). The mission of the Salt Waste Processing Facility project is to construct a large capacity facility to separate the highly radioactive component from the salt waste resulting from reprocessing and other radioactive liquids generated by nuclear materials production operations at the Savannah River Site. Within the $160,000,000 requested for this project, $48,000,000 is for construction activities and $112,000,000 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, which is the waste form for the disposition of the decontaminated salt solution resulting from salt waste processing. The $11,256,000 requested for this project includes $7,577,000 for construction activities and $3,679,000 for other project costs funded within the PBS SR-0014C, Radioactive Liquid Tank Waste Stabilization and Disposition operating account. The mission of the Saltstone Disposal Unit #7 project is to construct a cylindrical reinforced concrete tank designed to contain a minimum of 30 million gallons of Saltstone grout. The $12,686,000 requested for this project includes $9,729,000 for design activities and $2,957,000 for other project costs funded within the PBS SR-0014C, Radioactive Liquid Tank Waste Stabilization and Disposition operating account.

The Soil and Water Remediation Program will continue to remediate Savannah River Site contaminated soils, groundwater, streams (and associated wetlands), and waste sites which is governed through enforceable regulatory milestones and commitments. This includes continued remediation of ash from the D-Area Ash Project and construction of a geosynthetic cap over the existing ash basins.

The Savannah River Community and Regulatory Support Program will support the Citizens Advisory Board, provide support to the States of South Carolina and Georgia for emergency management activities, and support South Carolina Department of Health and Environmental Control and the Environmental Protection Agency oversight and implementation of the Federal Facility Agreement.

The Safeguards and Security Program will continue to protect nuclear materials, sensitive weapon and nuclear material production technology, equipment, information facilities, and support the Savannah River Site remediation and cleanup programs through 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.

Infrastructure

In November 2013, the Laboratory Operations Board established an integrated plan to conduct an assessment of general purpose infrastructure to assess how it is meeting mission needs across all 17 laboratories and NNSA sites and plants, using common standards and an enterprise-wide approach. These assessments, conducted over the course of 2014, provided new insight into the condition of the infrastructure.

EM manages a portfolio of facilities and infrastructure that are needed for its mission but some of which are no longer capable of supporting it. Although many of EM's facilities and infrastructure are intended to be shut down and demolished at some point in the future, much of this infrastructure will be needed for another 25-plus years to complete EM's cleanup mission. EM has been participating in Department-wide efforts to assess its infrastructure and identify investments. EM plans to incorporate more spending in FY 2017 to support infrastructure needs. EM will make investments in infrastructure to reduce the consequences of failures that will impact the reliability of our safety systems, waste processing and disposal, tank closure, and other cleanup systems. EM will make investments at the Savannah River Site to address needs for site-wide general purpose infrastructure, laboratory operations, radioactive liquid waste tanks, and nuclear material storage and processing facilities in H-, K-, and L- Areas.

FY 2016 and 2017 Key Milestones/Outlook

- (October 2015) Start removal action for the D-Area Ash Basin (488-2D)
- (October 2015) Submit Appendix C, RCRA/CERCLA Units List
- (October 2015) Submit Appendix H RCRA Regulated Units for Fiscal Year 2016
- (October 2015) Submit FFA Appendix G Site Evaluation Areas
- (October 2015) Submit FFA Appendix K D&D Facilities for Fiscal Year 2016
- (December 2015) Submit Work plan for C-Area Operable Unit (Includes 8 sub-units with 8 associated milestones)
- (February 2016) Submit D-Area Ash Basin (488-1D) Removal Site Evaluation Report/Engineering Evaluation/Cost Analysis (RSER/EE/CA) Rev.0
- (March 2016) Mechanical Completion of Field Work D-Area Ash Basins (488-4D and 488-2D)
- (May 2016) Initiate Fourth Phase II Field Start Pen Branch Integrator Operable Unit
- (May 2016) Close fourth high level waste tank towards Federal Facility Agreement commitment of closing four tanks by September 2015 (approved extension through dispute resolution process)
- (June 2016) Submit R-Area Ground Water Operable Unit Effectiveness Monitoring Report Rev.0
- (June 2016) Submit R-Area Reactor Seepage Basins and Overflow Basin Operable Unit Ground Water Mixing Zone Report Rev.0
- (September 2016) Complete bulk waste removal activities for one tank to meet one of two Federal Facility Agreement FY 2016 commitment
- (September 2016) Produce 130 – 150 vitrified 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

- (September 2016) Initiate the Field Start for C-Area Operable Unit (Includes 8 sub-units with 8 associated milestones)
- (September 2016) Initiate Field Start G-Area Oil Seepage Basin (761-13G)
- (September 2016) Submit D-Area Ash Basin (488-1D) Rev.0 Action Memorandum
- (September 2016) Submit Site Evaluation Report Combined Spills from 701-1F Spill
- (October 2016) Start Removal action for the D-Area Ash Basin (488-1D)
- (November 2016) DOE/SCDHEC Consent Order 95-22-HW, amended 10/14/03, requires the SRS Site Treatment Plan to be updated annually by November 15, 2016.
- (June 2017) Issue Record of Decision (ROD) Wetland Area at Dunbarton Bay in Support of Steel Creek Integrator Operable Unit (IOU) Rev.0
- (June 2017) Initiate Field Start, Fifth Phase II Fourmile Branch Integrator Operable Unit
- (September 2017) Complete Operational Closure of 2 High Level Waste Tanks
- (September 2017) Complete bulk waste removal efforts for three tanks
- (September 2017) Produce 100 - 110 high level waste canisters at Defense Waste Processing Facility
- (September 2017) Process 1.7 million gallons of salt solution in Actinide Removal Process/Modular Caustic Side Solvent Extraction Unit
- (September 2017) Complete construction Saltstone Disposal Unit 6
- (September 2017) Prepare Liquid Waste facilities for the outage starting 1st Quarter of FY2018 to tie in with Salt Waste Processing Facility
- (September 2017) Start Early Action Remedial Action for C-Area
- (September 2017) Continue down blending and packaging surplus EM owned plutonium for disposition to Waste Isolation Pilot Plant
- (September 2017) Process EM owned aluminum-clad spent (used) nuclear fuel in accordance with the Amended Record of Decision
- (September 2017) Support receipt of foreign and domestic research reactor spent (used) nuclear fuel (approximately 35 to 40 shipments)
- (September 2017) Continue to support Department's nonproliferation program through receipt of foreign plutonium

Strategic Management

The Savannah River Site cleanup strategy is to eliminate or minimize nuclear materials, spent (used) nuclear fuel, and waste through safe stabilization, treatment, and/or disposition. The goal is also to reduce costs of continuing operations, surveillance and maintenance, decommission facilities, and remediate groundwater and contaminated soils consistent with regulatory agreements. The Department of Energy's (DOE) completion strategy provides a comprehensive risk-based approach to the legacy cleanup project, such as dispositioning of radioactive liquid waste through vitrification of high activity component at the Defense Waste Processing Facility, use of existing Savannah River Site facilities to receive, store, and disposition aluminum-clad spent (used) nuclear fuel, and decommissioning of all facilities not identified for continuing missions.

The Site's land and facility footprint has been steadily reduced through execution of the Site's cleanup strategy. The objective of soils and groundwater cleanup and facility decommissioning is to achieve an end state with risk levels compatible with future non-residential use of SRS.

The following factor present the highest risks to timely achievement of the program's strategic goal:

- A significant portion of the infrastructure is in need of recapitalization. Failed infrastructure components result in impacts to site missions.

Savannah River
Funding ($K)

	FY 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs FY 2016
Defense Environmental Cleanup					
Savannah River Site					
Environmental Cleanup					
SR-0013 / Solid Waste Stabilization and Disposition	0	0	0	50,835	+50,835
SR-0030 / Soil and Water Remediation	0	0	0	74,145	+74,145
SR-0041 / Surveillance, Maintenance, and Deactivation	0	0	0	27,524	+27,524
Subtotal, Environmental Cleanup	**0**	**0**	**0**	**152,504**	**+152,504**
Nuclear Material Management					
SR-0011C / NM Stabilization and Disposition	0	0	0	311,062	+311,062
Radioactive Liquid Tank Waste Stabilization and Disposition					
SR-0014C / Radioactive Liquid Tank Waste Stabilization and Disposition-2035	712,318	712,318	783,520	822,638	+39,118
Savannah River Risk Management Operations					
SR-0011C / NM Stabilization and Disposition	259,910	249,507	254,655	0	-254,655
SR-0012 / SNF Stabilization and Disposition	24,407	42,266	41,407	0	-41,407
SR-0013 / Solid Waste Stabilization and Disposition	47,590	44,544	51,546	0	-51,546
SR-0030 / Soil and Water Remediation	66,069	61,659	66,044	0	-66,044
Subtotal, Savannah River Risk Management Operations	**397,976**	**397,976**	**413,652**	**0**	**-413,652**
SR Community and Regulatory Support					
SR-0100 / Savannah River Community and Regulatory Support	11,013	11,013	11,249	11,249	0
Total, Savannah River Site	**1,121,307**	**1,121,307**	**1,208,421**	**1,297,453**	**+89,032**
Safeguards and Security					
SR-0020 / Safeguards and Security	138,235	138,235	128,145	134,000	+5,855
Infrastructure Recapitalization					
SR-0202 / General Plant Projects	0	0	0	16,547	+16,547
Total, Defense Environmental Cleanup	**1,259,542**	**1,259,542**	**1,336,566**	**1,448,000**	**+111,434**

The FY 2017 Request is requesting the establishment of two new Congressional control points within the Savannah River site in order to segregate work that supports the National Nuclear Security Administration from the existing EM mission 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.

Savannah River
Funding ($K)

	FY 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs FY 2016
Defense Environmental Cleanup					
Savannah River Site					
Environmental Cleanup					
SR-0013 / Solid Waste Stabilization and Disposition	47,590	44,544	51,546	50,835	-711
SR-0030 / Soil and Water Remediation	66,069	61,659	66,044	74,145	+8,101
SR-0041 / Surveillance, Maintenance, and Deactivation	0	0	0	27,524	+27,524
Subtotal, Environmental Cleanup	**113,659**	**106,203**	**117,590**	**152,504**	**+34,914**
Nuclear Material Management					
SR-0012 / SNF Stabilization and Disposition	24,407	42,266	41,407	0	-41,407
SR-0011C / NM Stabilization and Disposition	259,910	249,507	254,655	311,062	+56,407
Subtotal, Nuclear Material Management	**284,317**	**291,773**	**296,062**	**311,062**	**+15,000**
Radioactive Liquid Tank Waste Stabilization and Disposition					
SR-0014C / Radioactive Liquid Tank Waste Stabilization and Disposition-2035	712,318	712,318	783,520	822,638	+39,118
SR Community and Regulatory Support					
SR-0100 / Savannah River Community and Regulatory Support	11,013	11,013	11,249	11,249	0
Total, Savannah River Site	**1,121,307**	**1,121,307**	**1,208,421**	**1,297,453**	**+89,032**
Safeguards and Security					
SR-0020 / Safeguards and Security	138,235	138,235	128,145	134,000	+5,855
Infrastructure Recapitalization					

	FY 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs FY 2016
SR-0202 / General Plant Projects	0	0	0	16,547	+16,547
Total, Defense Environmental Cleanup	**1,259,542**	**1,259,542**	**1,336,566**	**1,448,000**	**+111,434**

Savannah River Explanation of Major Changes ($K)

	FY 2017 vs FY 2016
Defense Environmental Cleanup	
Savannah River Site	
Environmental Cleanup	
SR-0013 / Solid Waste Stabilization and Disposition	
• The decrease reflects the establishment of a new PBS SR-0202 for Recapitalization/GPP projects.	-711
SR-0030 / Soil and Water Remediation	
• The increase of $8,101,000 supports remedial action to the wetlands area at Dunbarton Bay and supports increased remediation activities for the D-Area Ash Project per enforceable milestones.	+8,101
SR-0041 / Surveillance, Maintenance, and Deactivation	
• This increase reflects the reorganization of nuclear materials scope and the transfer of the non-operation scope to this newly established PBS SR-0041. This increase includes the support of continued 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 and continued activities to reduce the risk to personnel and the environment by reducing residual Plutonium-238 contamination in the F-Area Materials Storage Facility (235-F).	+27,524
Nuclear Material Management	
SR-0011C / NM Stabilization and Disposition	
• The increase reflects the merging of scope from PBS SR-0012, Spent Nuclear Fuel Stabilization and Disposition, into this PBS; resumption of EM funding Spent Nuclear Fuel processing; and an increase in the planned receipts of foreign and domestic research reactor spent nuclear fuel. This increase is offset by the transfer of work scope to newly-created PBS SR-0041; Surveillance, Maintenance, and Deactivation; by the transfer of funding for GPP projects to new PBS SR-0202; Recapitalization/GPP Projects.	+56,407
SR-0012 / SNF Stabilization and Disposition	
• The decrease reflects the merging of PBS SR-0012, Spent Nuclear Fuel Stabilization and Disposition into PBS SR-0011C, Nuclear Material Stabilization and Disposition.	-41,407

	FY 2017 vs FY 2016
Radioactive Liquid Tank Waste Stabilization and Disposition	
SR-0014C / Radioactive Liquid Tank Waste Stabilization and Disposition-2035	
• The increase reflects the merging of scope from PBS SR-0012, Spent Nuclear Fuel Stabilization and Disposition, into this PBS; resumption of EM funding Spent Nuclear Fuel processing; and an increase in the planned receipts of foreign and domestic research reactor spent nuclear fuel. This increase is offset by the transfer of work scope to newly-created PBS SR-0041; Surveillance, Maintenance, and Deactivation; by the transfer of funding for GPP projects to new PBS SR-0202; Recapitalization/GPP Projects.	+39,118
Infrastructure Recapitalization	
SR-0202 / General Plant Projects	
• The increase reflects the establishment of a new PBS for Recapitalization/GPP projects to support the Secretary's infrastructure initiatives.	+16,547
Safeguards and Security	
SR-0020 / Safeguards and Security	
• The increase reflects the costs to maintain security posture.	+5,855
Total, Savannah River	**+111,434**

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

Overview

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

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

The inventory of processed and certified transuranic waste will be safely stored at Savannah River Site pending completion of recovery activities underway at the Waste Isolation Pilot Plant and resumption of waste emplacement operations and receipt of off-site shipments.

This PBS also includes direct maintenance and repair that are applicable to these areas.

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

Activities and Explanation of Changes

FY 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
$51,546	**$50,835**	**-$711**
• 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 m^3 of newly generated low-level waste. • Support treatment/storage/disposal of up to 50 m^3 of mixed low-level waste.	• 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 m^3 of newly generated low-level waste. • Support treatment/storage/disposal of up to 50 m^3 of mixed low-level waste.	• The decrease reflects the establishment of a new PBS SR-0202 for Recapitalization/GPP projects.

• Support treatment/storage/disposal of up to 10 m^3 of hazardous waste. • Support treatment/storage/disposal of sanitary 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.	• Support treatment/storage/disposal of up to 10 m^3 of hazardous waste. • Support treatment/storage/disposal of sanitary 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.

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 remediation of the Savannah River Site contaminated soils, groundwater, streams (and associated wetlands) and waste sites which are 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 sources of contamination using an Area Completion Approach.

The scope of this PBS also includes the operation and maintenance of eight active soil and groundwater remedial systems, and the monitoring of 29 passive (natural attenuation) regulatory required soil and groundwater remedial systems to contain contaminant plumes within the SRS site boundary, and to protect human health and the environment. Also included is the continuing post-closure and post-Record of Decision care, and surveillance and maintenance at 68 closed waste units (approximately 900 acres) and at 63 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.

Following the shutting down and deactivation of the D-Area Powerhouse, the continued operations of the 488-1D and 488-2D Ash Basins, the 488-D and 488-4D Ash Landfills, and the 489-D Coal Pile Runoff Basin (CBRP) were no longer required. These will be closed in accordance with Comprehensive Environmental Response, Compensation, and Liability Act requirements, and South Carolina Solid Waste Landfill and Industrial Wastewater Treatment permit requirements. The closure will include the use of a geo-synthetic cover for 488-4D and the majority of 488-1D. The 488-2D Basin, the remaining portion of 488-1D Basin and Coal Pile Runoff Basin will serve as runoff basins. This will meet the goals outlined by the U.S. Department of Energy and the Office of Environmental Management, as well as, the negotiated agreements with the South Carolina Department of Health and Environmental Control and U.S. Environmental Protection Agency identified in the Federal Facility Agreement and state regulations for industrial waste water treatment and solid waste landfills.

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.

This PBS also includes direct maintenance and repair that are applicable to these areas.

Soil and Water Remediation (PBS: SR-0030)

Activities and Explanation of Changes

FY 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
$66,044	**$74,145**	**+$8,101**
• 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 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	• Achieve compliance with over 41 enforceable Federal Facility Agreement (Resource Conservation and Recovery Act/ Comprehensive Environmental Response, Compensation, and Liability Act) milestones and Resource Conservation and Recovery Act permit commitments. • Operate and maintain 37 regulatory- required soil and groundwater remedial systems (8 active & 29 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. • Continue remediation activities at the D-Area Ash Basin.	• The increase of $8,101,000 supports remedial action to the wetlands area at Dunbarton Bay and supports increased remediation activities for the D-Area Ash Project per enforceable milestones.

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.
- Provide site-wide services and landlord support functions for day-to-day operations. Site-wide and Landlord Support services are prorated across the PBSs.

Surveillance, Maintenance and Deactivation (PBS: SR-0041)

Overview

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

This is a new PBS beginning in FY 2017 and scope was previously included with Nuclear Materials Stabilization and Disposition (PBS SR-0011C).

This PBS covers scope and funding for the surveillance and maintenance of non-operating nuclear facilities (F-Area Complex Facilities as well as the Receiving Basin for Off-Site Fuels Facility), disposition of source term holdup within the F-Area Materials Storage Facility (235-F), and future deactivation of nuclear facilities currently operating at the Savannah River Site.

The F-Area Complex encompasses 235-F, 221-F, 221-F Canyon, F-Canyon B Line, 292-F, 292-1F, 292-2F, 284-10F, 254-13F. The scope includes all general area maintenance, as well as emergency preparedness, firewater, utilities, lighting, building and grounds maintenance. Surveillance and maintenance activities for the F Canyon Complexes include maintaining operating staff to meet staffing levels identified in the Technical Safety Requirements; maintaining and operating facility ventilation, electrical, fire alarm pull stations, and air monitoring systems; maintaining operator qualifications to include continuing training and emergency response plans; maintaining compliance with the Site Fire Protection, Nuclear Criticality Safety, Configuration Control, Radiation Protection, Quality Assurance, Equipment Maintenance, Chemical Control, Radioactive and Hazardous Materials Shipping / Receiving, Work Control, Waste Management, Environmental Compliance, and Industrial Hygiene Programs; maintaining safety basis documents and operating procedures including compliance with Documented Safety Analysis (DSA); conducting preventive maintenance (PMs) & corrective maintenance (CMs) on equipment required to maintain safety posture of facilities in a deactivated state; perform critical infrastructure to maintain safety envelop; and performing periodic entries into FB-Line requiring detailed planning and hazards analysis by engineering, operations, and radiological protection due to the nature of alpha contamination.

The Receiving Basin for Offsite Fuel surveillance and maintenance activities includes periodic rounds, inspections, and maintenance to ensure the facility does not pose risk to the environment, site workers, or the general public; activities needed to maintain the facility in accordance with safety basis requirements; maintenance of operating procedures, continued operator training, and support for housekeeping and safety initiatives to comply with Department of Labor, Office of Occupational Safety and Health Administration requirements and activities necessary for cost effective management, planning, and oversight.

The 235-F risk reduction activities are necessary to reduce and/or immobilize the residual Plutonium-238 remaining from the facility that supported the National Aeronautic and Space Administration's deep space missions. The Defense Nuclear Facility Safety Board provided Recommendation (2012-1) to mitigate the postulated hazard to co-located workers and the environment in the event of a seismically induced full facility fire. To ensure protection of on-site and off-site personnel from radiation exposure in the event of seismically induced fire, the project scope includes the following: controlling transient combustibles; removing fixed combustibles; improving fire detection; minimizing ignition sources; and removing the Plutonium-238 material that creates the risk.

This PBS also includes direct maintenance and repair that are applicable to these areas.

The FY 2017 scope of work for Surveillance and Maintenance, Risk Reduction, and Deactivation includes:

- 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.

- Continue 235-F Risk Reduction activities, per Implementation Plan for the Defense Nuclear Facility Safety Board Recommendation 2012-1 (as revised November 2014), to reduce the risk to personnel and the environment by reducing and/or immobilizing residual Plutonium-238 contamination in the F-Area Materials Storage Facility (235-F).

Surveillance, Maintenance, and Deactivation (PBS: SR-0041)

Activities and Explanation of Changes

FY 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
0	**$27,524**	**+$27,524**
• No activities.	• 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. • Perform activities to reduce the risk to personnel and the environment by reducing residual Plutonium-238 contamination in the F-Area Materials Storage Facility (235-F).	• This increase reflects the reorganization of nuclear materials scope and the transfer of the non-operation scope to this newly established PBS SR-0041. This increase includes the support of continued 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 and continued activities to reduce the risk to personnel and the environment by reducing residual Plutonium-238 contamination in the F-Area Materials Storage Facility (235-F).

NM Stabilization and Disposition (PBS: SR-0011C)

Overview

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

This PBS includes management and disposition of nuclear materials and spent nuclear fuel, primarily located in H-, K-, and L- Areas at Savannah River Site. The H-Area facilities continue to stabilize and disposition legacy EM owned nuclear materials through operation of H Canyon and HB-Line with Analytical Laboratories and Savannah River National Laboratory support. Programmatic and physical support activities related to safe receipt, inventory, management, and disposition of special nuclear materials residing in K-Area and disposition of spent fuel residing in L-Area Basin will continue. The end-state will be accomplished when the unique, irreplaceable capabilities of the facilities are no longer needed (all remaining materials have been dispositioned), and when the facilities have been deactivated and turned over for final disposition.

H-Canyon/HB-Line is integral to DOE's efforts to minimize and eliminate nuclear materials through safe treatment and disposition. Many activities rely on the facility's unique capabilities including the plutonium disposition program for conversion of plutonium metal to oxide, and the spent nuclear fuel stabilization and disposition program for processing of spent nuclear fuel to alleviate capacity constraints in L-Basin.

The K-Area Material Storage Facility securely stores stabilized non-pit plutonium materials declared surplus to the nation's defense needs after the Cold War and subsequently consolidated from across the DOE Complex pending disposition. The facility also receives and stores plutonium from foreign countries to support the National Nuclear Security Administration's Nuclear Nonproliferation Initiative and serves as an International Atomic Energy Agency control protocol facility for plutonium oxide.

This PBS also covers scope and funding for the spent nuclear fuel originating from Atomic Energy Commission and DOE activities, and spent nuclear fuel originating in both foreign and domestic research reactors being transferred to the Savannah River Site for safe, secure storage pending disposition. These fuel receipts support the United States of America's policy on minimizing highly enriched uranium around the world, especially programmatic missions of the Office of Nuclear Energy, Office of Science, and National Nuclear Security Administration. All spent nuclear fuel activities at Savannah River are conducted in a single area and the spent nuclear fuel is consolidated for storage in the L-Area Basin. This PBS also includes safe storage and eventual disposition of legacy heavy water remaining from production activities currently stored in L-Area, K-Area, and C-Area. The end-state will be accomplished when all remaining Savannah River Site inventories of spent nuclear fuel have been disposed and/or placed in approved long term storage, and when spent nuclear fuel facilities have been deactivated and turned over for final disposition.

This PBS also includes direct maintenance and repair that are applicable to these areas.

The FY 2017 scope of work for Nuclear Materials and Spent Fuel Stabilization and Disposition includes:

- Maintain K-Area to safely and securely store special nuclear material and perform required destructive examinations of 3013 containers.
- Operation of H-Canyon/HB-Line, the nation's only production-scale, shielded chemical separations facility still in operation, in compliance with 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).
- Cask loading and shipments of EM-owned aluminum clad spent nuclear fuel bundles to H-Canyon for disposition.
- Process spent nuclear fuel.

- Receipt of spent nuclear fuel in L-Area Basin including cask unloading and preparation for underwater storage.
- Continue operation of basin de-ionization system in support of fuel storage and water chemistry control requirements.
- Down blend highly enriched uranium to low enriched uranium for delivery to Tennessee Valley Authority.

NM Stabilization and Disposition (PBS: SR-0011C)

Activities and Explanation of Changes

FY 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
$254,655	**$311,062**	**+$56,407**
• 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. • 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 to in a 2012 Implementation Plan, as amended in the Savannah River Site Project Plan for Building 235-F, for Defense Nuclear Facilities Safety Board Recommendation 2012. • Operate H Canyon in a safe and secure manner. • Process spent nuclear fuel in coordination with receipt and processing of Canadian liquid material (funded by Canada). • Begin preparations to process High Flux Isotope Reactor spent nuclear fuel. • Support NNSA Nonproliferation program to prepare plutonium for disposition in HB-Line (NNSA funded). • Purify uranium for the Tennessee Valley	• Operate H Canyon in a safe and secure manner. • Maintain K-Area to safely and securely store special nuclear material. • Perform required 3013 destructive examinations in K Area in accordance with documented safety analysis. • Provide safe storage for EM-owned spent nuclear fuel in L-Area Basin. • Perform limited L-Basin life extension activities. • Support limited Augmented Monitoring Conditional Assessment Program. • Down blend EM-owned plutonium for disposal at Waste Isolation Pilot Plant, once operations resume. • Support receipt of foreign and domestic research reactor spent nuclear fuel. • Ship EM-owned spent nuclear fuel to H-Canyon for disposition. • Process EM-owned aluminum-clad spent nuclear fuel in accordance with the Amended Record of Decision. • Complete preparations to process High Flux Isotope Reactor spent nuclear fuel. • Dissolve Spent Nuclear Fuel, extract Highly Enriched Uranium, purify using the solvent extraction cycles in H Canyon, blend to a Low	• The increase reflects the merging of scope from PBS SR-0012, Spent Nuclear Fuel Stabilization and Disposition, into this PBS; resumption of EM funding Spent Nuclear Fuel processing; and an increase in the planned receipts of foreign and domestic research reactor spent nuclear fuel. This increase is offset by the transfer of work scope to newly-created PBS SR-0041; Surveillance, Maintenance, and Deactivation; by the transfer of funding for GPP projects to new PBS SR-0202; Recapitalization/GPP Projects.

Authority.
- Continue receipt and processing of sample return material from onsite laboratories.
- K-Area will meet safety requirements including surveillance of special nuclear materials in storage by destructive means in accordance with DOE-STD-3013 and the surveillance and monitoring plan.
- Resume down blending of non-MOXable plutonium oxide for disposition at Waste Isolation Pilot Plant, once operations resume.
- Continue to receive Gap Plutonium from Foreign Countries in support of the Nonproliferation program.
- Perform limited workforce sustainment activities to replace aging workforce.

Enriched Uranium solution and provide to the Tennessee Valley Authority.
- Continue receipt and processing of sample return material from onsite laboratories.
- Continue to receive Gap Plutonium from Foreign Countries in support of the NNSA nonproliferation program.
- Perform limited workforce sustainment activities to replace aging workforce.
- Perform surveillance and maintenance of legacy heavy water to ensure safe storage.
- Provide site-wide services and landlord support functions for day-to-day operations. Site-wide and Landlord Support services are prorated across the PBSs.

SNF Stabilization and Disposition (PBS: SR-0012)

Overview

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

This PBS covers scope and funding for the spent nuclear fuel originating from Atomic Energy Commission and DOE activities, and spent nuclear fuel originating in both foreign and domestic research reactors being transferred to the Savannah River Site for safe, secure storage pending disposition. These fuel receipts support the United States of America's policy on minimizing highly enriched uranium around the world, especially programmatic missions of the Office of Nuclear Energy, Office of Science, and National Nuclear Security Administration. All spent nuclear fuel activities at Savannah River are conducted in a single area and consolidated for storage in L-Area Basin. This PBS also includes safe storage and eventual disposition of legacy heavy water remaining from production activities currently stored in L Area, K Area, and C Area.

The end-state will be accomplished when all remaining Savannah River Site inventories of spent nuclear fuel have been disposed and/or placed in approved long term storage, and when spent nuclear fuel facilities have been deactivated and turned over for final disposition.

Beginning in FY 2017, scope of work for Spent Nuclear Fuel Stabilization and Disposition is included within Nuclear Materials Stabilization and Disposition (SR-0011C).

SNF Stabilization and Disposition (PBS: SR-0012)

Activities and Explanation of Changes

FY 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
$41,407	**0**	**-$41,407**
• 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. • Continue safe, secure storage of heavy water in L, K, and C areas. • Conduct surveillance and maintenance activities of facilities, grounds, and instrumentation. • Support receipt of planned foreign and domestic	• PBS merged with PBS SR-0011C NM Stabilization and Disposition – No activities.	• The decrease reflects the merging of PBS SR-0012, Spent Nuclear Fuel Stabilization and Disposition into PBS SR-0011C, Nuclear Material Stabilization and Disposition.

research reactor spent (used) nuclear fuel.

- Ship spent (used) nuclear fuel to H Canyon for disposition per H Canyon processing scheduling.

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 36,000,000 gallons of legacy liquid radioactive waste currently stored in 43 underground storage tanks (as of the end of FY 2016).

The Liquid Waste Program has reduced risk by:

- Producing over 4,000 canisters with more than 60 million curies immobilized in glass through the Defense Waste Processing Facility;
- Processing over 6 million gallons of salt waste through the Actinide Removal Process and Modular Caustic Side Solvent Extraction Unit;
- Disposing over 12 million gallons of low-activity waste in the Saltstone Disposal Units; and
- Emptying, cleaning and removing from service 8 high-level waste storage tanks meeting commitments in the Federal Facility Agreement.

The Savannah River Site plans to reduce the volume of tank waste by waste processing activities; remove, pre-treat, and batch remaining radioactive 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 low-level waste (decontaminated salt solution coming from salt waste processing) as saltstone grout; evaporation of liquids to ensure storage tank space is available to receive additional legacy waste from ongoing nuclear material stabilization and treat and discharge evaporator overheads through the Effluent Treatment Facility; empty and permanently close in place using grout all liquid radioactive waste storage tanks and support systems; and ensure 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 waste stored in underground storage tanks at the Savannah River Site 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 began operation in April 2008. These facilities provide an interim processing capability to remove and treat salt waste from the tank farms to create additional tank space required to support the higher capacity throughput of the Salt Waste Processing Facility. It also provides the Savannah River Site the opportunity to develop operating experience on a production-scale actinide and cesium removal processes which will be used to optimize startup and initial operations of the high capacity Salt Waste Processing Facility.

PBS SR-0014C scope also includes 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 the Savannah River Site. Processing salt waste through Salt Waste Processing Facility is needed to maintain adequate tank space required to optimize Defense Waste Processing Facility operations, expedite processing of liquid waste consistent with the current strategy, and ensure the site reduces delays in meeting its Federal Facilities Agreement commitments for waste removal, closure of non-compliant tanks and the Site Treatment Plan milestone. The project has been rebaselined and a new cost and schedule for completion has been established. An Independent Government Cost Estimate was prepared and an external review of the remaining project scope was conducted to further validate remaining project cost. All these milestones are enforceable and subject to fines and penalties.

The scope of PBS SR-0014C also includes design, construction, and operation of the Saltstone Disposal Units for permanent disposal of decontaminated salt solution (low-level waste) as saltstone 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 of closing underground storage tanks. The Saltstone Disposal Units will provide the benefits of lower disposal costs for decontaminated salt solutions with the grout itself providing primary containment of the waste, and the walls, floor, and roof of the Saltstone Disposal Units providing secondary containment. Construction of Saltstone Disposal Unit #6 will be completed and design of Saltstone Disposal Unit #7 will commence. Planning for additional saltstone disposal units will be initiated.

This PBS also includes direct maintenance and repair that are applicable to these areas.

Radioactive Liquid Tank Waste Stabilization and Disposition-2035 (PBS: SR-0014C)

Activities and Explanation of Changes

FY 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
$783,520	**$822,638**	**+$39,118**
• 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. • 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	• 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. • Continue with activities to prepare for Liquid Waste system outage in the first quarter FY 2018 to perform tie-ins with the Salt Waste Processing Facility. • Perform Tank Farm operation activities, including waste transfers and removals as well as potential use of “at tank” treatment technologies to expedite waste removal. • Continue preparation of Tank 10 for bulk waste removal and use it to meet the Federal Facility Agreement FY 2017 Bulk Waste Removal Effort commitment (Tank 1 of 3 tanks with completion commitments in FY 2017). • Initiate Tank 14 preparation for bulk waste removal to minimize delay in meeting Federal	• The increase reflects the merging of scope from PBS SR-0012, Spent Nuclear Fuel Stabilization and Disposition, into this PBS; resumption of EM funding Spent Nuclear Fuel processing; and an increase in the planned receipts of foreign and domestic research reactor spent nuclear fuel. This increase is offset by the transfer of work scope to newly-created PBS SR-0041; Surveillance, Maintenance, and Deactivation; by the transfer of funding for GPP projects to new PBS SR-0202; Recapitalization/GPP Projects.

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 produce 130 to 150 canisters.
- 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.
- Continue preparation of Tank 10 for bulk waste removal and treatment using alternative methodology based on on-going discussions with South Carolina Department of Health and Environmental Control.

Facility Agreement FY 2017 Bulk Waste Removal Effort commitment (Tank 2 of 3 tanks with completion commitments in FY 2017).
- Initiate heel removal design on Tank 10 and complete chemical cleaning Tank 15.
- Continue work on Tank 35 for Sludge Batch 11 and initiate preparation of Tank 34 for Sludge Batch 12 to support timely Defense Waste Processing Facility feed.
- Process 1.7 million gallons of salt solution through Actinide Removal Process and Modular Caustic Side Solvent Extraction Unit.
- Operate Effluent Treatment Facility at planned rate.
- Operate Defense Waste Processing Facility to produce 100 to 110 canisters of vitrified high level waste.
- Complete Saltstone Disposal Unit #6 project to support decontaminated salt solution disposal resulting from salt waste treatment and processing.
- Initiate Saltstone Disposal Unit #7 design for site prep, cell construction and balance of plant, and initiate long-lead procurement for cell construction.
- Continue modification of existing storage spaces and movement of additional 300 canisters for canister double stacking effort in Glass Waste Storage Building #1 to increase interim storage capacity for vitrified high-level waste canisters.
- 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 liquid tank waste system operational to process 300,000 gallons of H-Canyon waste.

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 to enable 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 to 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 including the US Army Corps of Engineer.

Savannah River Community and Regulatory Support (PBS: SR-0100)

Activities and Explanation of Changes

FY 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
$11,249	**$11,249**	**0**
• 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. • Support the Site Specific Advisory Board (SR	• 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 to 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	• No change.

Citizen's Advisory Board). • Support DOE Lease Agreements such as the US Army Corps of Engineers.	Citizen's Advisory Board). • Support DOE Lease Agreements including 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 Savanah 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 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
$128,145	**$134,000**	**+$5,855**
▪ 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 design for the ARGUS security monitoring and control system to replace the obsolete Electronic Safeguards & Security System	• 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, base cyber security program and newly identified initiatives, personnel security and program management for the Savannah River Operations Office. • Resume activities for planned transfer of the remaining consolidated Environmental	• The increase reflects the costs to maintain security posture.

using prior year carryover funds.	Management material access area to National Nuclear Security Administration control.

General Plant Projects (PBS: SR-0202)

PBS Overview Narrative

This PBS can be found within the Defense Appropriation.

The Recapitalization program, the key to effectively managing EM infrastructure, invests at a site level to improve the condition and extend the design life of the structures, capabilities, and/or systems. Investments are targeted to improve the reliability, sustainability, productivity, and efficiency of EM's general purpose infrastructure to reduce overall operating costs. They also reduce safety, environmental, and program risk associated with facilities and systems that are well beyond their design life. Investments are also made to manage risks in existing capabilities by investing to upgrade and improve the reliability, efficiency, and capability of programmatic equipment and associated infrastructure to meet Environmental Management requirements.

Infrastructure investments include costs for minor construction projects, capital equipment, and Other Project Costs for general purpose infrastructure Line Item construction projects. Infrastructure and Safety also funds some deactivation and disposal of excess infrastructure, resulting in surveillance and maintenance cost avoidance and reduced risk to workers, the public, the environment, and programs. In support of sustainability and energy performance goals, Recapitalization projects will include energy conservation measures to the greatest extent practicable.

The Capability Based Investments (CBI) are multi-year projects and strategies to sustain, enhance or replace capabilities through investments supporting the core programmatic requirements across the enterprise. These investments address needs beyond any single facility, activity, or system and are essential to achieving program mission objectives. To support ongoing and future cleanup activities, The Capability Based Investments invests in projects to reduce risk to the mission and ensure needed capabilities are available for future mission work. The Capability Based Investments provides a corollary to EM's line-item construction by funding smaller projects to enhance or sustain critical EM capabilities across the enterprise. The Capability Based Investments projects include: minor construction projects, Capital Equipment Projects, and Expense Funded Projects. The Capability Based Investments subprogram also funds Other Project Costs for EM-specific infrastructure Line Item construction projects.

This PBS is within the Defense Environmental Cleanup appropriation.

General Plant Projects (PBS: SR-0202)

Activities and Explanation of Changes

FY 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
0	**$16,547**	**+$16,547**
• No activities, as this PBS was established in FY 2017.	• Initiate Cell Block B, D&R Old Control Panel, Fab/Install New Panel Window #7 to Cold Side Load and installation. • Initiate Cell Block B, D&R Old Control Panel, Fab/Install New Panel Window #9 to Cold Side Load and installation. • Initiate Cell Block B, D&R Old Control Panel, Fab/Install New Panel Window #13 to Cold Side Load and installation. • Initiate Repair Site Railroad Infrastructure Phase I – supports H, K, L and E Areas. • Initiate 7th level H-Canyon Roof/Over HB-Line (H-Area). • Initiate H-Canyon Air Tunnel Repair/Replacement – Tunnel Repair Preparation Project. • Initiate 294-H Sand Filter Roof Upgrades for original facility. • Initiate 294-1H Sand Filter Roof Upgrades of Supplemental Filter Facility. • Initiate Tie-In Connection and installation for HB-Line Alternate Diesel Generator.	• The increase reflects the establishment of a new PBS for Recapitalization/GPP projects to support the Secretary's infrastructure initiatives.

Savannah River National Laboratory Crosscut – EM Funding

(EM dollars in thousands)

Savannah River National Laboratory	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs FY 2016
Environmental Management				
Defense Environmental Cleanup				
Savannah River	85,000	96,798	104,000	7,202
EM Headquarters	13,600	15,483	18,250	2,767
Office of River Protection	13,300	11,961	18,000	6,039
Paducah	360	410	950	540
Carlsbad	1,155	1,108	1,500	392
Oak Ridge National Laboratory	204	388	500	112
Richland	122	141	1,500	1,359
Los Alamos National Laboratory	112	128	150	22
Idaho	52	59	60	1
Total	**113,905**	**126,476**	**144,910**	**18,434**

Savannah River National Laboratory (SRNL) currently executes approximately $200,000,000 per year in support of Environmental Management, Clean Energy, and National Security programs. The Savannah River National Laboratory 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 Savannah River National Laboratory by the various user sites will determine the actual EM funding provided to the Savannah River National Laboratory in FY 2016 and FY 2017.

Specifically, for the Savannah River Site (SRS), Savannah River National Laboratory provides needed support to EM, such as characterization, analytical, and flowsheet development support for the 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 management program and the environmental cleanup and monitoring program; and development of next generation cleanup technologies.

In addition to the direct support for EM at the Savannah River Site, Savannah River National Laboratory also supports DOE-HQ and other EM DOE sites (Hanford, Paducah, Carlsbad, Oak Ridge, Los Alamos, and Idaho) through provision of programmatic and technical strategies for environmental remediation and risk reduction; development of processes to remediate high and low level wastes; technical oversight of test programs; conduct studies and development of 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; as well as support to the Minority Serving Institutions Partnership Program funded through EM Program Support.

Savannah River National Laboratory has more than 50 major research and support structures and facilities, including three commercially leased facilities supporting research activities. The majority of these facilities are located in the 39-acre Laboratory Technical Area (LTA) in A-Area near the north boundary of the Savannah River Site. Additionally, Savannah River National Laboratory has National Nuclear Security Administration production laboratory support facilities, a complex for Homeland Security, and office space in A-Area buildings outside of the Laboratory Technical Area. The Laboratory Technical Area is comprised of facilities rated as Nuclear Hazard Category II and III, Radiological, Chemical Hazard, and Other Industrial facilities. These facilities contain approximately 860,000 gross square foot of laboratory, work, and office space, including over 200,000 gross square foot of radiologically controlled laboratory and process space.

Activities Supported by Savannah River National Laboratory Funding

Activities and Explanation of Changes

FY 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
	Savannah River	
$96,798	**$104,000**	**+$7,202**
• 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	**NM Stabilization and Disposition (PBS: SR-0011C)** • Plutonium Surveillance Program – destructive and non-destructive characterization of 3013 canisters to determine national standards are being met • Used fuel evaluations • Nuclear materials packaging development and documentation • Analytical support for baseline operations and technical development for NM processing • Develop and demonstrate flowsheets to enable Savannah River Site canyon processing **Surveillance, Maintenance, and Deactivation (PBS: SR-0041)** • Support for 235-F deactivation and assessment activities **Solid Waste Stabilization and Disposition (PBS: SR-0013)** • Support waste certification program	• Increase reflects an anticipated additional effort to support Salt Waste Processing Facility startup.

operations and tank closure analysis • 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	• Support waste disposal activities **Radioactive Liquid Tank Waste Stabilization and Disposition (PBS: SR-0014C)** • Flowsheet development and alternatives evaluations • General operational facility support including material characterization, statistical analyses, equipment troubleshooting, evaluation of chemical processing 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, grouting, retrieval etc. • 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 waste tanks and processing tanks are adequately mixed • Develop and execute life extension and surveillance programs for Tank Farms • Startup support to Salt Waste Processing Facility **Safeguards and Security (PBS: SR-0020)** • Provide statistical support and analyses for the materials control and accountability program for special nuclear material. **Soil and Water Remediation (PBS: SR-0030)** • Develop and deploy Soil and Groundwater remediation technologies	
EM Headquarters		
$15,483	**$18,250**	**+$2,767**

• 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	• Nuclear Materials Packaging development and certifications • Support to Headquarters on revisions to DOE Order 435.1 and in support of the International Atomic Energy Agency (IAEA) • Technical studies for Headquarters 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 Deactivation & Decommissioning facility assessment and in situ decommissioning tools • Flowsheet Development – definition and testing of flowsheets for the processing of high level waste including specific focused programs for troublesome components • Independent review and strategic development of remediation approaches at Legacy Management sites • Coordinate Minority Serving Institutions Partnership Program (MSIPP) • Develop and verify protectiveness levels of alternative waste forms for management of nuclear materials (non-MOXable Plutonium)	• Increase reflects an anticipated increase in funding in the Technology Development and Deployment program with key focus areas in robotics, testbed management, management of Technetium and Mercury, and direct disposal options.
Office of River Protection		
$11,961	**$18,000**	**+$6,039**
• Waste form development & qualification – formulation of grouts and glass and the development of strategies to demonstrate compliance • Mixing and instrumentation studies of tanks in the Waste Treatment facility to ensure adequate mixing of waste prior to and during	• Develop strategies for staging and preparing waste to meet facility acceptance criteria • Waste form development & qualification – formulation of grouts and glass and the development of strategies to demonstrate compliance • Mixing and sampling studies of tanks in the	• Increase is due to expected scope transition from technical issue resolution to Direct Feed Low Activity Waste (DFLAW) startup, laboratory technical flowsheet ownership, and closure and performance assessment planning.

processing of waste • Flowsheet Development and evaluation – definition and testing of flowsheets, operating parameters, etc. for the processing of high level waste	Tank Farm and Waste Treatment Plant 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 • Studies and testing to support technical issue resolution for Waste Treatment & Immobilization Plant facilities • Provide representation on tank integrity panel and provide consultation on materials corrosion and compatibility • Tank Farm safety basis technical issue resolution (vapors) • Support for startup testing for Direct Feed Law Activity Waste • Provide leadership of the technical flowsheet ownership for the Hanford Mission • Consultation and technical support to the development of performance assessments and strategies for Tank Closure	
Paducah / Portsmouth		
$410	**$950**	**+$540**
• Technical review for remediation design documents	• Deploy models and technologies for remediation and closure • Deactivation & Decommissioning technology development and deployment • Develop site specific hazard and risk profiles to enhance work planning. Improves appropriate selection of tools, techniques and work force training. Also includes stakeholder engagement. • Support resolution of subsurface contamination issues • Participate in developing material recovery (Nickel) worksheets during the Deactivation & Decommissioning of cascades	• Scope transition from technical review and assessment to modeling and technology development and deployment in groundwater remediation, solid waste disposal options, nuclear material holdup measurements and emergent technical issue resolution. Also support stakeholder discussions.

Carlsbad		
$1,108	**$1,500**	**+$392**
• Support Waste Isolation Pilot Plant recovery efforts	• Provide remote inspection and robotics applications • Support re-start of Waste Isolation Pilot Plant including assessments of modified procedures and protocols	• Completion of support to Waste Isolation Pilot Plant recovery effort and transition to re-start of the facility. Support development and deployment of critical technologies necessary to support new operations.
Oak Ridge National Laboratory		
$388	**$500**	**+$112**
• Technical support for waste remediation	• Deploy waste remediation technologies	• Scope transition from technical review to technology development and deployment
Richland		
$141	**$1500**	**+$1,359**
• 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) • Materials consultation • Deactivation & Decommissioning technology development and deployment • Develop enhanced characterization approaches for facility maintenance and planning for Deactivation & Decommissioning. • Implement enhanced approaches to in-situ groundwater management • Provide planning input to management and remediation of Inactive Miscellaneous Underground Storage Tank (IMUST) program including regulatory framework for accelerated closure.	• Increased support for technology development and deployment for Deactivation & Decommissioning, in-situ groundwater management, and closure. Development and evaluation of models to support remediation decisions. Support engagement and discussions with stakeholders.
Los Alamos National Laboratory		
$128	**$150**	**+$22**

• Nuclear materials packaging studies	• Nuclear materials packaging studies • Technical assistance for groundwater remediation • Technical consultation to new Los Alamos National Laboratory EM Office	• Increased consultation to new Los Alamos National Laboratory EM Office

Idaho National Laboratory

$59	**$60**	**+$1**
• Nuclear Materials Packaging Studies	• Nuclear Materials Packaging Studies	• No significant change

Savannah River
Capital Summary ($K)

	Total	Prior Years	FY 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs FY 2016
Capital Operating Expenses Summary (including Major Items of Equipment (MIE))							
Capital Asset Projects > $10M	0	0	0	0	0	0	0
Plant Projects (GPP and IGPP) (<$10M)	42,565	0	11,998	11,998	8,020	16,547	+8,527
Total, Capital Operating Expenses	**42,565**	**0**	**11,998**	**11,998**	**8,020**	**16,547**	**+8,527**
Capital Asset Projects > $10M							
	0	0	0	0	0	0	0
Total, Capital Asset Projects > $10M	**42,565**	**0**	**11,998**	**11,998**	**8,020**	**16,547**	**+8,527**
Plant Projects (GPP and IGPP) (Total Project Cost (TPC) <$10M)							
SRNL B-Cell Block Window Replacement (Windows #10, #11, #12, #14, #15, and #16)	8,020	0	0	0	8,020	0	-8,020
SRNL -Cell Block Window Replacement (Windows #7, #9, and #13)	8,181	0	0	0	0	8,181	8,181
Repair Site Railroad Infrastructure Phase I - supports H, K., L, and E Areas	2,557	0	0	0	0	2,557	2,557
7th Level H-Canyon Roof/Over HB Line (H-Area)	800	0	0	0	0	800	800
H Canyon Air Tunnel Repair / Replacement – Tunnel Repair Preparation Project	2,009	0	0	0	0	2,009	2,009
294-H Sand Filter Roof Upgrades for original Facility	1,000	0	0	0	0	1,000	1,000
294-H Sand Filter Roof Upgrades of Supplemental Filter Facility	1,000	0	0	0	0	1,000	1,000
Tie In Connection and Installation for HB-Line Alternate Diesel Generator	1,000	0	0	0	0	1,000	1,000
192-4K Fire Water Storage Tank Cleaning & Re-Coating (Funded FY2015)	400	0	400	400	0	0	0
Replace Roof 730-4B (CR15M0004 - Funded in FY2015)	906	0	906	906	0	0	0
Replace Roof 773-A E-Wing E-131 (CR15M0033 - Funded in FY2015)	370	0	370	370	0	0	0
Replace Roof 773-A E-Wing E-004/008 (CR15M0033 - Funded in FY2015)	590	0	590	590	0	0	0
Replace Roof 773-52A (CR15M0033 - Funded in FY2015)	350	0	350	350	0	0	0
Replace HVAC 730-B, 730-1B, 730-2B, 730-4B (CR15M0029 - Funded in FY2015)	1000	0	1,000	1,000	0	0	0

	Total	Prior Years	FY 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs FY 2016
Replace fire panel 704-1N (CR15M0029 - Funded in FY2015)	248	0	248	248	0	0	0
Repair fire dampers 766-H (CR15M0029 - Funded in FY2015)	400	0	400	400	0	0	0
Replace HVAC 717-F (CR15M0029 - Funded in FY2015)	400	0	400	400	0	0	0
Replace fire panel 284-10F (CR15M0029 - Funded in FY2015)	50	0	50	50	0	0	0
Replace fire panel 618-G (CR15M0029 - Funded in FY2015)	50	0	50	50	0	0	0
Replace fire panel 703-42A (CR15M0029 - Funded in FY2015)	50	0	50	50	0	0	0
L-Area Reliable Power (FY 2015 Carryover, total includes NNSA Share)	6,000	0	3,000	3,000	0	0	0
K-Area Reliable Power (FY 2015 Carryover, total includes NNSA Share)	6,000	0	3,000	3,000	0	0	0
Replace 773-A, B/C Wing Central Hood Exhaust Tape-in-Place HEPA Filter Housing (FY2014/FY2015 Carryover)	489	0	489	489	0	0	0
Replace Process Monitoring & Programmable Logic Control System (FY2014/FY2015 Carryover)	383	0	383	383	0	0	0
Replace 735-A Halon Fire Suppression System 773-A (Funded Y2014/FY2015 Carryover)	312	0	312	312	0	0	0 0
Total, Plant Projects (GPP and IGPP) (Total Project Cost (TPC) <$10M	**42,565**	**0**	**11,998**	**11,998**	**8,020**	**16,547**	**+8,527**
Total, Capital Asset Projects > $10M	**42,565**	**0**	**11,998**	**11,998**	**8,020**	**16,547**	**+8,527**
Total, Capital Operating Expenses	**42,565**	**0**	**11,998**	**11,998**	**8,020**	**16,547**	**+8,527**

Savannah River
Construction Summary ($K)

	Total	Prior Years	FY 2014 Current	FY 2015 Enacted	FY 2016 Enacted	FY 2017 Request	FY 2017 vs FY 2016
05-D-405, Salt Waste Processing Facility, Aiken, SC							
Total Estimate Cost (TEC)	1,611,117	1,163,416	N/A	N/A	N/A	N/A	N/A
Other Project Costs (OPC)	710,883	129,108	N/A	N/A	N/A	N/A	N/A
Total Project Cost (TPC) 05-D-405	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**
Saltstone Disposal Unit #6, SR (SR-0014C)							
Savannah River Tank Waste (SR-0014C)							
Total Estimate Cost (TEC)	127,934	39,742	0	0	0	0	0
Other Project Costs (OPC)	15,266	6,548	0	0	0	0	0
Subtotal, Saltstone Disposal Unit #6, SR (SR-0014C)	TBD	TBD	TBD	TBD	TBD	TBD	TBD
15-D-402, Saltstone Disposal Unit #6, SR (SR-0014C)							
Total Estimate Cost (TEC)	0	0	30,000	30,000	34,642	7,577	-27,065
Other Project Costs (OPC)	0	0	2,694	2,694	2,345	3,679	+1,334
Subtotal, 15-D-402, Saltstone Disposal Unit #6, SR (SR-0014C)	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Total Project Cost (TPC) 15-D-402	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**
17-D-401, Saltstone Disposal Unit #7, SR (SR-0014C)							
Total Estimate Cost (TEC)	125,443	0	0	0	0	9,729	+9,729
Other Project Costs (OPC)	17,757	0	0	0	2,000	2,957	+957
Subtotal, 17-D-401 Saltstone Disposal Unit #7, SR (SR-0014C)							
Total Project Cost (TPC) 17-D-401	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**

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 to the FY 2015 Congressional Reprogramming 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 Department of Energy (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 of 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)

	CD-0	Conceptual Design Complete	CD-1	CD-2	Final Design Complete	CD-3	D&D Complete	CD-4
FY 2005	06/25/2001		4Q FY 2004	4Q FY 2005	4Q FY 2005	4Q FY 2005	N/A	4Q FY 2008

FY 2006	06/25/2001	4Q FY 2004	3Q FY 2006	3Q FY 2006	3Q FY 2006	N/A	4Q FY 2009
FY 2007	06/25/2001	4Q FY 2004	3Q FY 2007	1Q FY 2008	3Q FY 2007	N/A	1Q FY 2011
FY 2008	06/25/2001	4Q FY 2004	3Q FY 2007	1Q FY 2008	3Q FY 2007	N/A	1Q FY 2011
FY 2007 Notification	06/25/2001	4Q FY 2004	4Q FY 2007	4Q FY 2008	4Q FY 2008	N/A	1Q FY 2014
FY 2009	06/25/2001	4Q FY 2004	4Q FY 2007	4Q FY 2008	4Q FY 2008	N/A	1Q FY 2014
FY 2008 Reprogramming	06/25/2001	4Q FY 2004	4Q FY 2007	4Q FY 2008	1Q FY 2009	N/A	1Q FY 2014
FY 2010	06/25/2001	4Q FY 2004	4Q FY 2007	4Q FY 2008	1Q FY 2009	N/A	1Q FY 2016
FY 2011	06/25/2001	4Q FY 2004	4Q FY 2007	4Q FY 2008	1Q FY 2009	N/A	1Q FY 2016
FY 2012	06/25/2001	4Q FY 2004	4Q FY 2007	4Q FY 2008	1Q FY 2009	N/A	1Q FY 2016
FY 2013	06/25/2001	4Q FY 2004	4Q FY 2007	4Q FY 2008	1Q FY 2009	N/A	1Q FY 2016
FY 2012 Reprogramming	06/25/2001	4Q FY 2004	4Q FY 2007	4Q FY 2008	1Q FY 2009	N/A	1Q FY 2016
FY 2014	06/25/2001	4Q FY 2004	4Q FY 2007	4Q FY 2008	1Q FY 2009	N/A	TBD
FY 2013 Reprogramming	06/25/2001	4Q FY 2004	4Q FY 2007	4Q FY 2008	1Q FY 2009	N/A	TBD
FY 2015	06/25/2001	4Q FY 2004	4Q FY 2007	4Q FY 2008	1Q FY 2009	N/A	TBD
FY 2014 Notification	06/25/2001	4Q FY 2004	4Q FY 2007	4Q FY 2008	1Q FY 2009	N/A	2Q FY 2021
FY 2016	06/25/2001	4Q FY 2004	4Q FY 2007	4Q FY 2008	1Q FY 2009	N/A	2Q FY 2021
FY 2015 Reprogramming	06/25/2001	4Q FY 2004	4Q FY 2007	4Q FY 2008	1Q FY 2009	N/A	2Q FY 2021
FY 2017	06/25/2001	4Q FY 2004	4Q FY 2007	4Q FY 2008	1Q FY 2009	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 Alternative Selection and Cost Range
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 Completion
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	4Q 2007	4Q 2007	2Q2008	N/A	N/A
FY 2009	4Q 2007	4Q 2007	3Q2008	N/A	N/A
FY 2008 Reprogramming	4Q 2007	4Q 2007	4Q 2008	N/A	N/A
FY 2010	4Q 2007	4Q 2007	4Q 2008	1Q 2009	N/A
FY 2010	4Q 2007	4Q 2007	4Q 2008	1Q 2009	N/A
FY 2012	4Q 2007	4Q 2007	4Q 2008	1Q 2009	N/A
FY 2013	4Q 2007	4Q 2007	4Q 2008	1Q 2009	N/A
FY 2012 Reprogramming	4Q 2007	4Q 2007	4Q 2008	1Q 2009	N/A
FY 2014	4Q 2007	4Q 2007	4Q 2008	1Q 2009	N/A
FY 2013 Reprogramming	4Q 2007	4Q 2007	4Q 2008	1Q 2009	N/A
FY 2015	4Q 2007	4Q 2007	4Q 2008	1Q 2009	N/A
FY 2014 Notification	4Q 2014	4Q 2007	4Q 2008	1Q 2009	2Q 2021
FY 2016	4Q 2014	4Q 2007	4Q 2008	1Q 2009	2Q 2021
FY 2015 Reprogramming	4Q 2014	4Q 2007	4Q 2008	1Q 2009	2Q 2021
FY 2017	4Q 2014	4Q 2007	4Q 2008	1Q 2009	2Q 2021

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

	(Fiscal Quarter) TEC, Design	TEC, Construction	TEC, Total	OPC Except D&D	OPC, D&D	OPC, Total	TPC
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
FY 2015 Reprogramming	238,905	1,372,212	1,611,117	710,883	0	710,883	2,322,000
FY 2017	238,905	1,372,212	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.

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 Facilities Safety Board concerns about the impacts of potential accidents involving radiological materials, the DOE 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 (ASME) 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 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, were 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[e]	N/A	N/A	53,063
FY 2009	N/A	N/A	16,588
FY 2010	N/A	N/A	3,716
Total, Design	238,905	238,905	238,905
Construction			

	Appropriations	Obligations	Costs
FY 2005	N/A	N/A	0
FY 2006	N/A	N/A	0
FY 2007	N/A	N/A	1,907
FY 2008[e]	N/A	N/A	68,440
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	1,372,212	1,372,212	1,372,212
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[e]	97,109	97,109	121,503
FY 2009	155,524	155,524	109,955
FY 2010	234,118	234,118	155,459
FY 2011	234,403	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

	Appropriations	Obligations	Costs
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[ae]	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
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.

[e]FY 2008 includes a Congressional Reprogramming request to realign $4,800,000 from the Project Engineering and Design (03-D-414) to the Salt Waste Processing Facility construction project (05-D-404). No change in the Total Project Cost of $2,332,000,000.

6. Details of Project Cost Estimate

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design			
Design	238,905	243,705	206,705
Contingency	0	0	37,000
Total, Design	238,905	243,705	243,705
Construction			
Site Preparation	27,263	27,263	27,263
Equipment	171,893	171,893	89,508
Other Construction	1,137,056	1,132,256	316,428
Contingency	36,000	36,000	49,000
Total, Construction	1,372,212	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
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	FY 2015	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 Reprograming	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 Reprograming	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
FY 2015 Reprograming	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
FY 2017	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)	2Q21
Expected Useful Life (number of years)	17
Expected Future Start of D&D	N/A

(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

Area	Square Feet
N/A	N/A

(Related Funding requirements)

9. D&D Information

The new area being constructed in this project is not replacing existing facilities. As part of the EM 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, South Carolina
Project is for Design and Construction

1. Significant Changes and Summary

Significant Changes
This Project Data Sheet is an update of the FY 2016 President's Budget Request Data Sheet and does not include a new start for the budget year.

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 2017 will be used to complete construction of the disposal cell and the balance of plant.

2. Critical Milestone History

(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
FY 2017	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 Alternative Selection and Cost Range
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 Completion
PB – Indicates the Performance Baseline

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
FY 2017	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. Project Cost History

(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
FY 2017	10,617	117,317	127,934	15,266	N/A	15,266	143,200

[a] 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.

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. 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	N/A	N/A	539
FY 2012	N/A	N/A	4,423
FY 2013	N/A	N/A	3,180
FY 2014	N/A	N/A	2,475
Total, Operating Funded Design	N/A	N/A	10,617
Construction			
FY 2013	N/A	N/A	1,662
FY 2014	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			
FY 2011	539	539	539
FY 2012	4,423	4,423	4,423
FY 2013	7,318	7,318	4,842
FY 2014	27,462	27,462	28,564
FY 2015	30,000	30,000	31,374
FY 2016	34,642	34,642	34,642
FY 2017	7,577	7,577	7,198
FY 2018	15,973	15,973	16,352
Total, TEC	127,934	127,934	127,934
Other Project Cost (OPC)			
OPC			
FY 2011	140	140	133
FY 2012	4,278	4,278	4,064
FY 2013	1,416	1,416	1,345

	(dollars in thousands)		
	Appropriations	Obligations	Costs
FY 2014	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	679	679	672
FY 2012	8,701	8,701	8,487
FY 2013	8,734	8,734	6,187
FY 2014	28,176	28,176	29,242
FY 2015	32,694	32,694	33,998
FY 2016	36,987	36,987	36,987
FY 2017	11,256	11,256	9,808
FY 2018	15,973	15,973	17,819
Total, TPC	143,200	143,200	143,200

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	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design			
Design	10,617	10,617	N/A
Contingency	0	0	N/A
Total	10,617	10,617	N/A
Construction			
Building & Site Work	94,286	94,286	N/A
Contingency	23,031	23,031	N/A
Total, Construction	117,317	117,317	N/A
Total, TEC	127,934	127,934	N/A
Contingency, TEC	23,031	23,031	N/A
Other Project Cost (OPC)			
OPC			
Conceptual Design	3,976	3,976	N/A
Start-Up	7,836	7,836	N/A
Other OPC	1,917	1,917	N/A
Contingency, OPC	1,537	1,537	
Total, OPC except D&D	15,266	15,266	N/A

	(dollars in thousands)		
	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total, TPC	143,200	143,200	143,200
Total, Contingency	24,568	24,568	32,902[a]

[a] Project was baselined as an operating project and, as an operating project, the baseline consisted of only the TPC and the contingency.

7. Schedule of Appropriation Requests

		($K)								
Request		Prior Years	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	Outyears	Total
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
FY 2017	TEC	39,742	30,000	34,642	7,577	15,973	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	11,256	15,973	0	0	0	143,200

[a] 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.

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. 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.

17-D-401
Saltstone Disposal Unit #7, Savannah River Site, Aiken, SC (SR-0014C)
Project is for Design and Construction

1. Significant Changes and Summary

Significant Changes

This Construction Project Data Sheet (CPDS) is new and does include a new start for the budget year.

Summary

A DOE O 413.3B Critical Decision -0 approval request is planned for early Second Quarter Fiscal Year 2016. The total project cost range for this project is $129,252,000 to $143,200,000. (Note this is a pre-conceptual, rough order of magnitude estimate). The Critical Decision -4 schedule range is Fourth Quarter 2020 to Fourth Quarter 2022.

Approval of a Critical Decision -3A for early site preparation will be pursued and may be requested prior to a Critical Decision -2 and/or Critical Decision -3.

A Federal Project Director has not been assigned to this project.

The preliminary critical decision strategy for the disposal cell and balance of plant construction is to have a separate Critical Decision -3 request for each of these evolutions. This should give the project greater flexibility in sequencing construction activities.

The major risk consists of the inability to meet the operational need date forecasted by the Liquid Waste System plan due to funding disruption.

2. Critical Milestone History

(fiscal quarter or date)

	CD-0	Conceptual Design Complete	CD-1	CD-2	Final Design Complete	CD-3 Disposal Cell	CD-3 Balance of Plant	D&D Complete	CD-4
FY 2017	2QFY2016	TBD	TBD	TBD	TBD	TBD	TBD	N/A	TBD

Note: Schedules are only estimates and are consistent with the high end of the schedule range.

CD-0 – Approve Mission Need
Conceptual Design Complete – Actual date the conceptual design was completed (if applicable)
CD-1 – Approve Alternative Selection and Cost Range
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 Completion
PB – Indicates the Performance Baseline

	(Fiscal Quarter or Date)			
	Performance Baseline Validation		CD-3 Balance of Plant	
FY 2017	TBD		TBD	

CD-3 Disposal Cell – Approval to start disposal cell construction only.
CD-3 Balance of Plant - Approval to start remaining project construction.

3. Project Cost History

(Fiscal Quarter)

	TEC, Design	TEC, Construction	TEC, Total	OPC Except D&D	OPC, D&D	OPC, Total	TPC
FY 2017	TBD	TBD	TBD	TBD	N/A	TBD	TBD

Note:
(1) Numbers are only estimates and are consistent with the high end of the cost range.
(2) No construction, excluding site preparation activities, will be performed until the project performance baseline has been validated and Critical Decision -3 has been approved.

4. Project Scope and Justification

Scope

The Saltstone Disposal Units are required to provide the primary containment of Saltstone grout with sufficient capacity to support site closure goals and salt waste projections identified in the Liquid Waste System Plan. The mission need addressed by this project is critical for the final disposition of the decontaminated salt solution that is produced by the liquid waste system and without which the commitments made in the Federal Facilities Agreement with the State of South Carolina and the Environmental Protection Agency cannot be achieved.

The Saltstone Disposal Unit #7 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. Saltstone Disposal Unit #7 project will construct disposal cell or cells and all infrastructures necessary to accept Saltstone grout produced by the Saltstone Production facility with sufficient capacity to meet the estimated production rates identified in the Savannah River Site 'Liquid Waste System Plan'. Funding in the budget year initiate technical studies, designs, and site preparation work necessary to identify the most cost effective design for the disposal cell and assure Saltstone disposal capacity is available when needed.

Saltstone Disposal Unit #7 project will construct disposal cell and all infrastructures necessary to accept Saltstone grout produced by the Saltstone Production facility with sufficient capacity to meet the estimated production rates identified in the Savannah River Site Liquid Waste System Plan.

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 Unit 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 Unit will be constructed in coordination with salt processing production rates.

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
Design			
FY 2017	N/A	N/A	9,229
Outyears	N/A	N/A	TBD
Total, Design	N/A	N/A	TBD
Construction			
FY 2017	N/A	N/A	500
Outyears	N/A	N/A	TBD
Total, Construction	N/A	N/A	TBD
TEC			
FY 2017	9,729	9,729	9,729
Outyears	TBD	TBD	TBD
Total, TEC	TBD	TBD	TBD
OPC			
FY 2016	2,000	2,000	2,000
FY 2017	2,957	2,957	2,957
Outyears	TBD	TBD	TBD
Total, OPC	TBD	TBD	TBD
Total Project Cost (TPC)			
FY 2016	2,000	2,000	2,000
FY 2017	12,686	12,686	12,686
Outyears	TBD	TBD	TBD
Total, TPC	TBD	TBD	TBD

Note:

(1) Site preparation and disposal cell design will be completed before the completion of the balance of plant design. This will facilitate the early start of construction to support the programmatic need date.

(2) Depending upon the results of the Analysis of Alternatives at CD-1, there may be an opportunity to start full project design and construction in FY 2017.

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 Preparation	TBD	N/A	N/A
Equipment	N/A	N/A	N/A
Other 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	TBD	N/A	N/A
Conceptual Planning	TBD	N/A	N/A
Conceptual Design	TBD	N/A	N/A
Start-up	TBD	N/A	N/A
Contingency	TBD	N/A	N/A
Other OPC	TBD	N/A	N/A
Total, OPC except D&D	TBD	N/A	N/A
Total, OPC	TBD	N/A	N/A
Total, Contingency	0	N/A	N/A
Total, TPC	TBD	N/A	N/A
Total, Contingency	TBD	N/A	N/A

7. Schedule of Appropriation Requests

($K)

Request		Prior Years	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	Outyears	Total
FY 2017	TEC	0	0	9,729					TBD	TBD
	OPC	0	2,000	2,957					TBD	TBD
	TPC	0	2,000	12,686					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)	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	TBD	N/A	TBD	N/A
Maintenance	TBD	N/A	TBD	N/A
Total, Operations & Maintenance	TBD	N/A	TBD	N/A

9. 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 has not been determined. A cost-benefit analysis will be conducted to determine whether the design and/or construction of these systems will be delegated to a fixed priced subcontractor. The liquid waste Prime Contractor and/or the US Army Corps of Engineers may be used to create the design, provide engineering and project management support, or other services required to execute the project.

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. 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 groundwater 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 groundwater 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 groundwater 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 2017 Budget Request

The majority of activities scheduled for FY 2017 are in support of the development of remedial solutions for contamination at Building 812, Building 865, and Building 850, and include the development of the Proposed Plan and Public Meeting for the remedies at Building 812, Building 865 and perchlorate in groundwater at Building 850.

FY 2016 - FY 2017 Key Milestones/Outlook

- (September 2016) Complete Building 812 Remedial Investigation
- (September 2016) Complete Building 850 Perchlorate in Groundwater Final Focused Feasibility Study

- (September 2017) Final Proposed Plan for remedies at Building 812, Building 865 and perchlorate in groundwater at Building 850
- (September 2017) Public Meeting to discuss remedies at Building 812, Building 865 and perchlorate in groundwater at Building 850

Regulatory Framework

- Federal Facility Agreement with the U.S. 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, Limited Liability Company, 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 seven 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:

- The U.S. Environmental Protection Agency and the 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 increased costs and delayed schedules 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 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs FY 2016
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	249	+11
VL-LLNL-0031 / Soil and Water Remediation-Lawrence Livermore National Laboratory - Site 300	1,128	1,128	1,128	1,147	+19
Subtotal, Lawrence Livermore National Laboratory	**1,366**	**1,366**	**1,366**	**1,396**	**+30**

Lawrence Livermore National Laboratory Explanation of Major Changes ($K)

	FY 2017 vs FY 2016
Defense Environmental Cleanup	
NNSA Sites	
Lawrence Livermore National Laboratory	
VL-FOO-0013B-D / Solid Waste Stabilization and Disposition Support - Lawrence Livermore National Laboratory (Defense)	
• Increase reflects the increased grant cost to the Regulatory agencies.	+11
VL-LLNL-0031 / Soil and Water Remediation-Lawrence Livermore National Laboratory - Site 300	
• Increase is due to greater public interest for a solution at Building 821 resulting in the Public Meeting increasing costs slightly.	+19
Total, Lawrence Livermore National Laboratory	**+30**

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 buildout of the remedy for remediation of groundwater 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 groundwater 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 the National Nuclear Security Administration 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 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
$238	**$249**	**+$11**
• 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.	• 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.	• Increase reflects the increased grant cost to the Regulatory agencies.

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 four 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 Groundwater Project (Building 850 portion of Operable Unit 5)
- Release Site 0049: Building 812 Wastewater 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 Groundwater at Building 850/Operable Unit 5 continued in FY 2015, and the Feasibility Study is planned to be 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 buildout 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 buildout in these areas are complete, responsibility for the management and funding of Long-Term Stewardship activities required by the Comprehensive Environmental Response Compensation and Liability Act will be transferred from EM to the National Nuclear Security Administration.

Soil and Water Remediation-Lawrence Livermore National Laboratory - Site 300 (PBS: VL-LLNL-0031)

Activities and Explanation of Changes

FY 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
$1,128	**$1,147**	**+$19**
• Complete Building 812 Remedial Investigation. • Complete Building 850 Perchlorate in Groundwater Final Focused Feasibility Study.	• Complete Final Proposed Plan for remedies at Building 812, Building 865 and perchlorate in groundwater at Building 850. • Conduct Public Meeting to discuss remedies at Building 812, Building 865 and perchlorate in groundwater at Building 850.	• Increase is due to greater public interest for a solution at Building 821 resulting in the Public Meeting increasing costs slightly.

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. In addition, mixed low-level waste and transuranic waste have accumulated and are 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 co-located 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 renegotiated Order on Consent (Consent Order) which outlines required groundwater and soil remediation on site[1]. The Environmental Management program is currently executed by the Los Alamos National Security (LANS), LLC, under a short-term, bridge contract to the Office of Environmental Management (via the Department of Energy's Environmental Management Consolidated Business Center), until a follow-on, competitively awarded EM contract(s) can be established.

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 was documented in early 2012 in the Framework Agreement, a document of shared commitment between DOE and the State of New Mexico. 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 (December 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 the 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. This container was from a legacy transuranic waste stream containing unconsolidated nitrate salts and an incompatible absorbent. Prior to the events, significant progress was made to reduce the risks associated with the above-ground transuranic waste inventory, with only 10% of the targeted 3,706 cubic meters remaining on site. The radiological release and the Los Alamos National Laboratory factors that contributed to the breached container have been evaluated in detail by a DOE Accident Investigation Board, an independent national laboratory Technical Assistance Team and various other internal and external organizations.

Upon discovery that the breached container at the Waste Isolation Pilot Plant originated from Los Alamos, the processing of legacy transuranic waste at Los Alamos National Laboratory was suspended. The New Mexico Environment Department issued an Administrative Order requiring the safe isolation of nitrate salt bearing wastes remaining on site; the activities required to comply with this Order are among the FY 2016 and FY 2017 activities at the site. This plan requires ongoing and continuous monitoring of the waste to ensure its continued safe storage. In December 2014, the New Mexico Environment Department also issued an Administrative Compliance Order assessing fines and penalties associated with self-disclosed Resource Conservation and Recovery Act non-compliances. In addition to assessing fines and penalties, the New Mexico Environment Department is requiring plans for the treatment of nitrate salt bearing waste. Additionally, the Phase II Waste Isolation Pilot Plant Accident Investigation Board Report was issued, supported by the Technical Assessment Team, on April 16, 2015. The Phase II report required the development and implementation of Corrective Action Plans for Los Alamos National Laboratory's transuranic waste disposition program; once fully implemented these actions should preclude the possibility of a release similar to the one that occurred on February 14, 2014, at the Waste Isolation Pilot Plant. Treatability

[1] Currently the 2005 Consent Order remains in force. However, DOE expects – based on New Mexico Environment Department public statements – that the Consent Order will be renegotiated by the end of CY 2015/early CY 2016. This budget request reflects assumption that this occurs.

studies and a resumption plan have been established as part of FY 2016 operations and will serve as the prelude to planned treatment of the nitrate salt bearing waste stream in FY 2017.

In September 2014, the Secretary of Energy directed the Office of Environmental Management and the National Nuclear Safety Administration to transition the management and oversight of the legacy environmental cleanup activities at Los Alamos solely to the Office of Environmental Management. This transition is still in process and involves both significant organizational and contractual changes.

Highlights of the FY 2017 Budget Request

By the end of FY 2017, nitrate salt bearing waste will be treated, rendering the waste safe for continued storage and future disposal at the Waste Isolation Pilot Plant. Planning for retrieval and repackaging of the below-grade transuranic waste will include the evaluation and recommendation regarding disposition of the 33 remote-handled transuranic waste shafts.

Consistent with the priorities established with the New Mexico Environment Department in the Framework Agreement, other FY 2017 activities will continue to focus on surface and groundwater management. Investigation and development of corrective measures for remediation of the hexavalent chromium plume continue in Mortandad and Sandia Canyon watersheds, and design of the selected remedies will begin in FY 2017. Execution of New Mexico Environment Department approved groundwater remedies for the high explosives plume in Cañon de Valle will continue. Efforts to obtain and implement individual storm water permits and cleanup of several aggregate areas will continue.

Demolition activities for balance of plant facilities will continue in Technical Area-21, the closest laboratory property to Los Alamos County, along with planning for the radiologically contaminated facilities in the area. This will be incorporated into the remediation activities in the Technical Area-21 campaign and will not be separated by PBS in FY 2017. Remediation activities on some public and Los Alamos County properties will be completed during FY 2017. The FY 2017 request will support technical discussions with the regulators, additional documentation that may be required, possible public meetings, and other support to obtain the decision of the regulator to allow going forward with remedy projects development in possibly three Material Disposal Areas (A, C, and T).

FY 2016 and FY 2017 Key Milestones/Outlook

- (September 2016) Fulfill requirements of the Nitrate Salt Bearing Waste Isolation Plan
- (September 2016) Install seven wells supporting Chromium and RDX interim measures and drill five alluvial boreholes
- (September 2017) Complete evaluation and recommendation related to the disposition of 33 shafts remote-handled transuranic waste
- (September 2017) Complete the investigation of hexavalent chromium contamination of the groundwater beneath Mortandad and Sandia Canyons including field and bench-scale testing and plume control interim measures
- (September 2017) Submittal of Certificates of Completion for historical town sites in the Los Alamos Canyon
- (September 2017) Completion of supplemental investigation reports pairing risk assessments with eight older investigation results
- (September 2017) Install three wells associated with Chromium interim measures activities

Regulatory Framework

The primary regulatory driver for Environmental Management at Los Alamos National Laboratory has been the Consent Order, which was signed by the New Mexico Environment Department, Los Alamos National Laboratory and DOE on March 1, 2005. The Consent Order provided the primary requirements for the environmental cleanup efforts at Los Alamos National Laboratory and established an enforceable scope and schedule and milestones for corrective actions. As mentioned previously, the Department acknowledged its inability to meet the enforceable milestones contained in the original Consent Order. FY 2017 scope will be planned and executed according to the planned new, renegotiated Consent Order to be issued by New Mexico Environment Department.

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, the 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, and the settlement of the Administrative Compliance Order with New Mexico Environment Department.

Contractual Framework

The majority of EM work at Los Alamos was historically executed through work authorizations under the National Nuclear Security Administration's Management and Operations contract, with cleanup work typically performed by subcontractors to the Management and Operations contractor. However, due to the Secretarial decision to have direct EM oversight of the contractor, the current cleanup contract at Los Alamos National Laboratory is a FAR-based bridge contract with Los Alamos National Security, LLC. The contract performance period is expected to run through September 30, 2017. EM is continuing its management transition by implementing its acquisition strategy for award of a competitive contract(s) for performance of legacy environmental cleanup beginning in FY 2017/early FY 2018. This acquisition process is anticipated to require two years to implement.

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 reprioritized some activities at Los Alamos National Laboratory to ensure the highest risk of stored combustible transuranic waste 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 renegotiated Consent Order 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. Current characterization and testing activities indicated that an active remediation process may be implemented for potentially significant durations in several groundwater areas before 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.
- It is also assumed that National Environmental Policy Act documents adequately bound the possibility of uncovering additional cultural sites on Los Alamos National Laboratory plateaus without further impacts on project schedules. Additionally, regulators are assumed to approve the necessary permits without the need for public hearings.

Los Alamos National Laboratory

Funding ($K)

	FY 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs FY 2016
Defense Environmental Cleanup					
NNSA Sites					
Los Alamos National Laboratory					
VL-FAO-0101 / Miscellaneous Programs and Agreements in Principle	2,355	2,355	3,394	0	-3,394
VL-LANL-0013 / Solid Waste Stabilization and Disposition-LANL Legacy	75,600	78,999	80,583	0	-80,583
VL-LANL-0030 / Soil and Water Remediation-LANL	110,145	106,716	99,570	0	-99,570
VL-LANL-0040-D / Nuclear Facility D&D-LANL (Defense)	1,500	1,530	1,453	0	-1,453
Subtotal, Los Alamos National Laboratory	**189,600**	**189,600**	**185,000**	**0**	**-185,000**
Los Alamos					
EMLA Cleanup Activities					
VL-LANL-0013 / Solid Waste Stabilization and Disposition-LANL Legacy	0	0	0	92,240	+92,240
VL-LANL-0030 / Soil and Water Remediation-LANL	0	0	0	93,366	+93,366
Subtotal, EMLA Cleanup Activities	**0**	**0**	**0**	**185,606**	**+185,606**
EMLA Community and Regulatory Support					
VL-FAO-0101 / Miscellaneous Programs and Agreements in Principle	0	0	0	3,394	+3,394
Total, Los Alamos	**0**	**0**	**0**	**189,000**	**+189,000**
Total, Defense Environmental Cleanup	**189,600**	**189,600**	**185,000**	**189,000**	**+4,000**

The FY 2017 Request is establishing a new control point within the Defense Environmental Cleanup Appropriation to support the implementation of the EM Los Alamos office.

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.

Los Alamos National Laboratory

Funding ($K)

	FY 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs FY 2016
Defense Environmental Cleanup					
Los Alamos					
EMLA Cleanup Activities					
VL-LANL-0030 / Soil and Water Remediation-LANL	110,145	106,716	99,570	93,366	-6,204
VL-LANL-0040-D / Nuclear Facility D&D-LANL (Defense)	1,500	1,530	1,453	0	-1,453
VL-LANL-0013 / Solid Waste Stabilization and Disposition-LANL Legacy	75,600	78,999	80,583	92,240	+11,657
Subtotal, EMLA Cleanup Activities	**187,245**	**187,245**	**181,606**	**185,606**	**+4,000**
EMLA Community and Regulatory Support					
VL-FAO-0101 / Miscellaneous Programs and Agreements in Principle	2,355	2,355	3,394	3,394	0
Total, Los Alamos	**189,600**	**189,600**	**185,000**	**189,000**	**+4,000**

Los Alamos National Laboratory Explanation of Major Changes ($K)

	FY 2017 vs FY 2016
Defense Environmental Cleanup	
Los Alamos	
EMLA Cleanup Activities	
VL-LANL-0013 / Solid Waste Stabilization and Disposition-LANL Legacy	
• Increase reflects need to complete remediation of nitrate salt waste for future shipment to and disposal at the Waste Isolation Pilot Plant and fulfillment of Corrective Actions and associated work scope in the Final Stipulated Settlement issued by New Mexico Environment Department and in response to DOE Accident Investigation Board report.	+11,657
VL-LANL-0030 / Soil and Water Remediation-LANL	
• Decrease supports compliance-based groundwater remediation activities, compliance-based individual permit activities, and the ground water investigation activities for hexavalent chromium and RDX contaminants.	-6,204
VL-LANL-0040-D / Nuclear Facility D&D-LANL (Defense)	
• Decrease reflects transfer of nuclear facility deactivation and decommissioning activities to PBS VL-LANL-0030 to enable integration of deactivation and decommissioning and remediation planning, consistent with the campaign approach reflected in the renegotiated Consent Order.	-1,453
Total, Los Alamos National Laboratory	**+4,000**

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 are 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 transuranic, mixed, and low-level waste.

Solid Waste Stabilization and Disposition-LANL Legacy (PBS: VL-LANL-0013)

Activities and Explanation of Changes

FY 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
$80,583	**$92,240**	**+$11,657**
• 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	• 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 above-ground 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	• Increase reflects need to complete remediation of nitrate salt waste for future shipment to and disposal at the Waste Isolation Pilot Plant and fulfillment of Corrective Actions and associated work scope in the Final Stipulated Settlement issued by New Mexico Environment Department and in response to DOE Accident Investigation Board report.

Bearing Waste Isolation Plan.
- 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.

waste per regulatory agreement with the State of New Mexico.
- Conduct safe operations of processing lines at Waste Characterization Reduction Repackaging Facility, Dome 231, Dome 375 and Building 412.
- Treat nitrate salt bearing wastes in fulfillment of the Nitrate Salt Bearing Waste Isolation Plan. This is the extremely unique and challenging waste stream involved in the February 2014 radiological release at the Waste Isolation Pilot Plant.
- Complete evaluation and recommendation on 33 remote-handled transuranic waste shafts.
- Conduct activities to certify legacy transuranic waste for future shipment to the Waste Isolation Pilot Plant purchased through the Waste Isolation Pilot Program's Central Characterization Program.
- Continue fulfillment of Corrective Actions and associated workscope in the Final Stipulated Settlement issued by New Mexico Environment Department and in response to the DOE Accident Investigation Board report.

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, of the original 2,129, 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; and 3) remediation of Technical Area-21, including 2 material disposal areas and over 100 Solid Waste Management Units.

This PBS also includes scope associated with the design, construction, and startup of Hexavalent Chromium Remedy Project (15-D-406) in Mortandad Canyon. Expanding on the FY 2016 efforts focused on the interim measures related to the plume control within the Los Alamos National Laboratory boundary and interim measures to complete the characterization needed to support reaching regulatory agreement on the proposed remedy.

Beginning in FY 2017, activities previously included in the PBS for decontamination and decommissioning have been integrated into this PBS, consistent with the integrated, campaign approach reflected in the Consent Order renegotiation. This integration with the remediation addresses the problem of facility demolition exposing otherwise covered contaminants that would unnecessarily expose public receptors to significant hazardous materials until remediation could be effective.

Soil and Water Remediation-LANL (PBS: VL-LANL-0030)

Activities and Explanation of Changes

FY 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
$99,570	**$93,366**	**-$6,204**
• 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	• Continue groundwater monitoring and reporting requirements consistent with the Framework Agreement, renegotiated Consent Order on Compliance, and the Resource Conservation and Recovery Act Operating Permit; install several monitoring wells under the renegotiated Consent	• Decrease supports compliance-based groundwater remediation activities, compliance-based individual permit activities, and the ground water investigation activities for hexavalent chromium and RDX contaminants.

sampling to protect the regional drinking water supplies, sediment monitoring, mitigation and reporting requirements consistent with the Individual Permit.

- Continue to provide critical database 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.

Order; continue storm-water sampling to protect the regional drinking water supplies (Los Alamos, Santa Fe, and San ll Defonso Pueblo), sediment monitoring, mitigation and reporting requirements consistent with the Individual Permit.

- Continue to provide critical database management and infrastructure support to meet renegotiated Consent Order requirements.
- Conduct authorization basis surface inspections at several Nuclear Environmental Sites and required repairs.
- Continue planning and construction activities at Individual Permit sites including Los Alamos, Pueblo, Ancho, Chaquehui, Sandia, and Mortandad canyons.
- Complete additional investigation of near surface water impacts on Material Disposal Area T.
- Complete Town site cleanup of solid waste management units from the 1940s and 1950s production sites.
- Support acceleration of risk-reduction activities at Technical Area-21 and other aggregate area cleanups through investigations and supplemental investigation reports. Investigations will include TA-15 and -16 in Cañon de Valle. Nineteen sites that have already been characterized will be remediated to obtain certificates of completion.
- Continue activities for Chromium plume investigation through modeling and hydrology studies, installation of extraction and injection wells, and interim measure activities progression towards an approved Corrective Measures Evaluation.
- Continue activities associated with groundwater investigation including tracer deployment and cross-well testing 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 renegotiated New Mexico Environment Department Consent Order. Due to shift in planning and execution during the bridge contract period and follow-on acquisition(s), Los Alamos National Laboratory found that the decontamination and decommissioning scope for Technical Area-21 would be more efficient when incorporated into the Technical Area-21 Campaign in VL-LANL-0030. Los Alamos will be able to perform the demolition related scope in tandem with soil remediation leading to the ultimate release of the property back to Los Alamos County.

Nuclear Facility D&D-LANL (Defense) (PBS: VL-LANL-0040-D)

Activities and Explanation of Changes

FY 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
$1,453	**0**	**-$1,453**
• 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.	• No activities planned as Los Alamos National Laboratory will integrate into Technical Area-21 decontamination and decommissioning scope into the Technical Area-21 Campaign scope in PBS VL-LANL-0030.	• Decrease reflects transfer of nuclear facility deactivation and decommissioning activities to PBS VL-LANL-0030 to enable integration of deactivation and decommissioning and remediation planning, consistent with the campaign approach reflected in the renegotiated Consent Order.

Miscellaneous Programs and Agreements in Principle (PBS: VL-FAO-0101)

Overview

This PBS is within the Defense Environmental Cleanup appropriation.

This PBS includes continued community, Tribal, and site wide programs including the Natural Resource Damage Assessment Program at Los Alamos National Laboratory. The pre-assessment screening and the Natural Resource Damage Assessment Plan for the Los Alamos National Laboratory site were completed in FY 2014. The Los Alamos National Laboratory Natural Resource Trustee Council is continuing assessment activities.

Miscellaneous Programs and Agreements in Principle (PBS: VL-FAO-0101)

Activities and Explanation of Changes

FY 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
$3,394	**$3,394**	**0**
• 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.	• Support the Regional Coalition activities. • Support the Natural Resource Damage Assessment and Trustee Council activities. • Support the Los Alamos Pueblo Program to continue environmental monitoring programs for air, soil, and water and establish an independent monitoring program.	• No change.

LANL
Construction Summary ($K)

	Total	Prior Years	FY 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs FY 2016
Hexavalent Chromium Pump and Treatment Remedy Project, LANL (VL-LANL-0030)							
LANL Soil and Water (VL-LANL-0030)							
Total Estimate Cost (TEC)	45,600	0	0	0	0	0	0
Other Project Costs (OPC)	6,400	500	0	0	0	0	0
Subtotal, Hexavalent Chromium Pump and Treatment Remedy Project, LANL (VL-LANL-0030)	TBD	TBD	TBD	TBD	TBD	TBD	TBD
15-D-406, Hexavalent Chromium Pump and Treatment Remedy Project, LANL (VL-LANL-0030)							
Total Estimate Cost (TEC)	0	0	4,600	4,600	0	0	0
Other Project Costs (OPC)	0	0	2,500	2,500	0	0	0
Subtotal, 15-D-406, Hexavalent Chromium Pump and Treatment Remedy Project, LANL (VL-LANL-0030)	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Total Project Cost (TPC) 15-D-406	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**

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 2017 Budget Request

At the Nevada Field Office the main activities in FY 2017 are associated with Underground Test Area well development, testing and sampling; the hydrologic and geologic data analysis and modeling; continuation of post-closure monitoring for closed soils and industrial-type sites; closure of 9 soils sites; initiation of closure activities of 2 contaminated soils sites; and continued receipt of low-level and mixed low-level waste for disposal.

FY 2016 and FY 2017 Key Milestones/Outlook

- (September 2016) Continue disposal of Low-Level Waste and Mixed Low-Level Waste; continue audits and certification program; and maintain documents.
- (September 2017) Continue disposal of Low-Level Waste and Mixed Low-Level Waste; continue audits and certification program; and maintain documents.

Regulatory Framework

Nevada Field 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.

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. The current Management and Operating contract expires on September 30, 2016. Planning for the follow-on contract has begun and the new contract is expected to be awarded prior to the start of FY 2017.

A second prime contract is in place to support environmental characterization and remediation activities at the site and waste acceptance activities across the DOE complex. The current contract with Navarro Research and Engineering, Inc. is

also managed by the National Nuclear Security Administration and was awarded on February 1, 2015, with a one-year base performance period and four one-year options.

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 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs FY 2016
Defense Environmental Cleanup					
NNSA Sites					
Nevada					
VL-NV-0030 / Soil and Water Remediation-Nevada	44,416	46,444	38,560	42,187	+3,627
VL-NV-0080 / Operate Waste Disposal Facility-Nevada	16,940	14,912	20,996	14,940	-6,056
VL-NV-0100 / Nevada Community and Regulatory Support	3,495	3,495	2,829	5,049	+2,220
Subtotal, Nevada	**64,851**	**64,851**	**62,385**	**62,176**	**-209**

Nevada Explanation of Major Changes ($K)

	FY 2017 vs FY 2016
Defense Environmental Cleanup	
NNSA Sites	
Nevada	
VL-NV-0030 / Soil and Water Remediation-Nevada	
• Increase reflects remaining work and includes the initiation of closure activities (corrective actions) at 2 soils contamination sites located at the U.S. Air Force's Nevada Test and Training Range.	+3,627
VL-NV-0080 / Operate Waste Disposal Facility-Nevada	
• Decrease reflects completion of maintenance and/or replacement of equipment.	-6,056
VL-NV-0100 / Nevada Community and Regulatory Support	
• Increase reflects proposed additional scope of work consistent with the Agreement-in-Principle and the Memorandum of Understanding grants with the State of Nevada.	+2,220
Total, Nevada	**-209**

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 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
$38,560	**$42,187**	**+$3,627**
• Continue progress toward closure of approximately 900 subsurface contaminated groundwater sites. • Complete activities for Frenchman Flat that allow for closure and start of long-term monitoring. • Complete Western and Central Pahute Mesa Phase II Data Completion 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	• Complete closure activities at 9 soils corrective action sites located on the Nevada National Security Site. • Initiate closure activities (corrective action) at 2 soils contamination sites located at the U.S. Air Force's Nevada Test and Training Range. • Continue progress toward closure of approximately 900 subsurface contaminated groundwater sites. • Continue Frenchman Flat Underground Test Area post-closure monitoring. • Complete well development, testing and sampling activities related to Yucca Flat and Pahute Mesa	• Increase reflects remaining work and includes the initiation of closure activities (corrective actions) at 2 soils contamination sites located at the U.S. Air Force's Nevada Test and Training Range.

prevent contamination spread.

- Complete closure activities for 2 contaminated soils sites.
- Complete characterization activities for 4 contaminated soils sites (CAU 541, Small Boy, and CAU 573 Alpha Contaminated Sites).
- Initiate characterization activities for 2 contaminated soils sites (CAU 413, Clean Slate II Plutonium Dispersion; and CAU 414 Clean Slate III, Plutonium Dispersion).
- Continue closure activities for 18 contaminated soils sites (CAU 541, Small Boy; CAU 568, Area 3 Plutonium Dispersion Sites; and CAU 573, Alpha Contaminated Sites).
- Complete Yucca Flat Corrective Action Decision Document/Corrective Action Plan.
- Initiate Rainier Mesa peer review.
- Initiate mandatory Frenchman Flat post-closure monitoring.

Underground Test Areas.

- Continue hydrologic and geologic data analysis scope including groundwater Flow and Transport Modeling for Pahute Mesa Underground Test Area.
- Continue Underground Test Area annual groundwater sampling program.
- Continue mandatory surveillance and maintenance of industrial-type and soil remedial systems to prevent contamination spread.

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 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
$20,996	**$14,940**	**-$6,056**
• 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. • Initiate planning for replacement of the current mixed low-level waste disposal cell. • Support cleanup activities across the DOE complex by providing disposal capacity and services for up	• 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 of low-level and mixed low-level radioactive waste.	• Decrease reflects completion of maintenance and/or replacement of equipment.

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 trench.
- Replace aging equipment and prepare for future expansion of mixed waste disposal facility/capacity.
- Continue planning for replacement of the current mixed low-level waste disposal cell.

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 the 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 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
$2,829	**$5,049**	**+$2,220**
• 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.	• Provide support for State of Nevada regulatory oversight of the Nevada National Security Site. • Provide additional support for the new 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.	• Increase reflects proposed additional 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 Operations 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; 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 for groundwater assessment. 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 2017 Budget Request

The FY 2017 budget request enables the regulatory closure of the remaining five soil sites and 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. More importantly, at Technical Area-V Groundwater, the EM Internal Remedy Review Team recommended the implementation of an Interim Measure/Treatability Study that would actively biodegrade the contamination. FY 2017 requires a total budget of $4,130,000 to complete the scope coordinated with the New Mexico Environment Department.

FY 2016 and FY 2017 Key Milestones/Outlook

- (October 2015) Start corrective action complete regulatory process on the Five Soil Sites and prepare for public hearing.
- (October 2015) Start Phase 1 of Interim Measure/Treatability Study at TA-V Groundwater Area with installation of one injection well.
- (December 2015) Complete post-public hearing regulatory actions and transfer Mixed Waste Landfill to Long-Term Stewardship.
- (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.
- (September 2017) Complete public hearing on Five Soil Sites and transfer to Long-Term Stewardship.
- (September 2017) Conduct Aquifer Pump Test fieldwork at Burn Site Groundwater area.
- (September 2017) Complete Phase 1 on Interim Measure/Treatability Study at TA-V Groundwater Area with installation of two monitoring wells.

Regulatory Framework

The regulatory driver for completing this work is the April 2004 New Mexico Environment Department Compliance Order on Consent. As of August 2015, 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 that 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 small businesses. Sandia National Laboratory develops near-term and long-term planning approaches in order to develop contract strategies and a project plan at a more detailed level. Sandia Corporation and selected subcontractors then execute the plan 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 Sandia Corporation.

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 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 were submitted to New Mexico Environment Department in September 2014 for the five re-opened soil release sites that underwent groundwater assessments; the five sites move on to the permit modification and public hearing closure process, 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 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs FY 2016
Defense Environmental Cleanup					
NNSA Sites					
Sandia National Laboratories					
VL-SN-0030 / Soil and Water Remediation-Sandia	2,801	2,801	2,500	4,130	+1,630

Sandia Site Office Explanation of Major Changes ($K)

	FY 2017 vs FY 2016
Defense Environmental Cleanup	
NNSA Sites	
Sandia National Laboratories	
VL-SN-0030 / Soil and Water Remediation-Sandia	
• Increase reflects the implementation of an Interim Measure Treatability Study at Technical Area-V Groundwater and completion of public hearing actions for and transfer of the Five Soil Sites to the National Nuclear Security Administration for Long-Term Stewardship.	+1,630
Total, Sandia Site Office	**+1,630**

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 and five soil release sites re-opened by New Mexico Environment Department for groundwater assessment.

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 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
$2,500	**$4,130**	**+$1,630**
• 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. • Receive approval from the New Mexico Environment Department on the Tech Area-V Groundwater Treatability Study Work Plan and install injection and monitoring well to commence the multi-year active remediation study.	• Transfer the Five Soil Sites to the National Nuclear Security Administration for Long-Term Stewardship. • Complete the Aquifer Pump Test at Burn Site Groundwater. • Submit an updated Corrective Measures Evaluation Report for Tijeras Arroyo Groundwater to State authority. • Initiate Interim Measure/Treatability Study at TA-V Groundwater Area with installation of two monitoring wells.	• Increase reflects the implementation of an Interim Measure Treatability Study at Technical Area-V Groundwater and completion of public hearing actions for and transfer of the Five Soil Sites to the National Nuclear Security Administration for Long-Term Stewardship.

Separations Process Research Unit

Overview

Cleanup of the Separations Process Research Unit 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 Separations Process Research Unit is an inactive pilot plant used to research and develop chemical processes to separate plutonium from other radioactive material and is located at the Knolls Atomic Power Laboratory, Niskayuna, New York. The Separations Process Research Unit operated from 1950 to 1953. The Separations Process Research Unit operations contaminated nuclear facilities and approximately thirty acres of land where waste containers were managed. Groundwater, immediately adjacent to the nuclear facilities and in an area where containers were once stored, was also contaminated with radioactivity. The scope of the Separations Process Research Unit project is to decontaminate and remove the nuclear facilities, including required sub-grade building foundations and tank vaults, remediate the land areas, and ship the resulting waste to the appropriate off-site disposal facilities.

Cleanup of the Lower Level Rail Bed was completed in FY 2011 and this area was returned to the site landlord, the Office of Naval Reactors. Decontamination and Decommissioning activities of Buildings G2 and H2 were partially funded through the American Recovery and Reinvestment Act funding. In addition, the Separations Process Research Unit site received damage from tropical storms Irene and Lee, which resulted in an unstable hillside area.

Highlights of the FY 2017 Budget Request

During FY 2017 the project will complete demolition of the G2 and H2 structures, complete planned demolition of sub-grade building foundations and soil removal work, and begin final site restoration activities.

FY 2016 – FY 2017 Key Milestones/Outlook

- (March 2017) Completion of H2 and G2 building demolition work.
- (June 2017) Complete clean-up of land area (soil).
- (September 2017) Project will complete verification sampling, Oak Ridge Institute for Science and Education sampling and verification of clean-up standards being met.

Regulatory Framework

An Administrative Order on Consent was issued by the US Environmental Protection Agency Region 2 in February 2011 for violations of the National Emissions Standards for Hazardous Air Pollutants regulations. This Administrative Order on Consent required that future decontamination and decommissioning activities occur within tent enclosures with ventilation units. Since this time, the contractor has successfully installed tent enclosures with ventilation systems over the structures, and completed activities for removal and shipment of tank sludge wastes, and continues to manage the Hillside Drain System.

Contractual Framework

Program planning and management at the Separations Process Research Unit is conducted through the issuance and execution of contracts to large and small businesses. Separations Process Research Unit 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 current contract at the Separations Process Research Unit is with:

- URS/Washington Group International, Inc. - A Cost-Plus Incentive Fee Task Order performed under CLIN 002 of the DOE Environmental Management Nationwide Indefinite Delivery Indefinite Quantity Contract. This contract was modified to include a cost cap which limits the government liability to complete the Task Order. This cost cap has been reached.

DOE will continue to fund portions of the work attributable to government actions through use of prior year carryover, and require the contractor to complete the base work scope at no additional cost to the government.

The contractor is obligated to complete the entire scope of the cleanup work on its contract, including that costing more than the maximum DOE cost. The contractor is currently bearing all the costs of the work because the costs have exceeded the DOE cost cap. The contractor has submitted many requests for equitable adjustment. EM has recognized minimal additional costs and has adjusted the contract cost cap accordingly. The settlement of the rest of the costs is currently part of an on-going mediation case that has not yet been resolved.

Strategic Management

The contract was modified in FY 2012 and included a cost cap above which the contractor is obligated to fund the base contract work. DOE retains responsibility for funding hillside stabilization as a result of tropical storms Irene and Lee. Changes to the contract directed by the government are funded by the government. The contractor has exceeded the cost cap and has submitted contract claims. The resolution of contract claims is ongoing through the alternate dispute resolution process.

In October 2012, the contractor submitted a revised baseline which has been implemented by DOE as an interim baseline pending validation. In January 2013 the contractor began implementation of a slower rate of progress than required by the interim baseline and working to a URS baseline, which has not been shared with or validated by DOE.

DOE will continue to fund portions of the work attributable to government actions, and require the contractor to complete the base work scope at no additional cost to the government.

The site resumed decontamination and decommissioning in late FY 2013, and completed the removal of the tank sludge in FY 2014 and completed disposition of the processed sludge and tanks in FY 2015. The SPRU prime contractor has provided the DOE with a resource-loaded schedule. Demolition activities are expected to begin in mid FY 2016. The prime contractor is responsible for project costs and estimates the project's physical completion date to be in early 2017. This is supported by the DOE PARS II estimate of Critical Decision -4 (Administrative Closeout) being accomplished in FY 2018. The strategy for the site includes completion of remaining cleanup activities and continuing support until all EM post-closure administrative activities are completed and the site is transitioned to the Naval Reactors Program for their continued mission.

Separations Process Research Unit

Funding ($K)

	FY 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs FY 2016
Defense Environmental Cleanup					
NNSA Sites					
Separations Processing Research Unit					
VL-SPRU-0040 / Nuclear Facility D&D-Separations Process Research Unit	0	0	0	3,685	+3,685

Separations Process Research Unit Explanation of Major Changes ($K)

	FY 2017 vs FY 2016
Defense Environmental Cleanup	
NNSA Sites	
Separations Processing Research Unit	
VL-SPRU-0040 / Nuclear Facility D&D-Separations Process Research Unit	
• The increase funds the Oak Ridge Institute for Science and Education verification sampling, and the development and close out of Critical Decision -4 documentation for the site to be returned to the Site Landlord, Naval Reactors.	+3,685
Total, Separations Process Research Unit	**+3,685**

Nuclear Facility D&D-Separations Process Research Unit (PBS: VL-SPRU-0040)

Overview

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

The project objectives are to remove the inactive nuclear facilities and disposition the chemical and radioactive contamination in land areas and return the areas to the Knolls Atomic Power Laboratory for continued mission use by the Naval Reactors Program.

Under the terms of the site contract, the project reached the established cost cap prior to FY 2014. The site contractor will continue to fund activities necessary to complete the planned site cleanup and satisfy the contract scope requirements. DOE will continue to fund portions of the work attributable to government actions, and require the contractor to complete the base work scope at no additional cost to the Government. FY 2014 funding will be utilized to provide payment for any contract claims to address changes attributable to the Government. No FY 2015 and FY 2016 funding was requested for the project, because DOE anticipates that prior year funds will be sufficient to address any costs determined to be attributable to Government actions.

Nuclear Facility D&D-Separations Process Research Unit (PBS: VL-SPRU-0040)

Activities and Explanation of Changes

FY 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
0	**$3,685**	**+$3,685**
Through use of prior year funds: • Perform ongoing program support and operational services. • Complete pre-demolition activities and initiate demolition on Buildings H2 & G2.	• Complete demolition of structures and of sub-grade building foundations and soil removal work. • Continue to manage the Hillside Drain System. • Initiate development of project closeout documentation.	• The increase funds the Oak Ridge Institute for Science and Education verification sampling, and the development and close out of Critical Decision -4 documentation for the site to be returned to the Site Landlord, Naval Reactors.

West Valley

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, High-Level Waste canisters from the main plant to the storage pad where they will remain until disposition;
- 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 2017 Budget Request

The major activities planned for the West Valley Demonstration Project for FY 2017 focus on the relocation of the high-level waste canisters and Head-End Cell Drums of Transuranic waste from the Main Plant Process Building to an interim, on-site storage facility. This work was previously scheduled to be completed in FY 2015. As a result of incorporation of material differences from the previous contract, this work will continue into FY 2017. DOE negotiated and incorporated material differences into CH2M Hill-BWXT West Valley contract to remove the Head-End Cell drums from the Chemical Processing Cell. 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 2017. Milestones have been finalized.

FY 2016 & FY 2017 Key Milestones/Outlook

- (September 2016) Process and dispose of Legacy and Newly Generated Mixed Low-Level Waste meeting requirements as specified in the Site Treatment Plan
- (October 2016) Legacy Low-Level Waste Disposition Complete (Concentrator Feed Makeup Tank, Melter Feed Hold Tank & Melter Disposal Complete)
- (December 2016) Complete Armoring and Protecting the Toe of the Nuclear Regulatory Commission (NRC) Licensed Disposal Area
- (July 2017) Balance of Site Facilities- Administration Building (Annex) Demolition, Site Restoration and Waste Disposition Complete
- (September 2017) Process and dispose of Newly Generated Mixed Low-Level Waste Meeting requirements as specified in the Site Treatment Plan
- (September 2017) Rad waste treatment system Drum Cell Ready to Accept/Store Transuranic and Orphaned Waste
- (September 2017) Vitrification Facility Commencement of Demolition

Regulatory Framework

Cleanup and environmental remediation activities at the West Valley Demonstration Project 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's submittal of the Decommissioning Plan in February 2010.
- Stipulation of Compromise Settlement agreement (1987) represents the legal compromise reached between the Coalition on West Valley Nuclear Waste and Radioactive Waste Campaign and the DOE regarding development of a comprehensive Environmental Impact Statement for the Project and for on-site and off-site disposal of low-level waste.
- 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 the 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 BWXT West Valley, LCC, which has a contract period of performance from August 29, 2011, through an estimated completion date of March 9, 2020. There are no options on this cost plus award fee contract.
- Enviro Compliance Solutions Inc., this task order is executed against a nationwide indefinite delivery/indefinite quantity contract to a small disadvantaged business; it is a nationwide indefinite delivery/indefinite quantity tripartite task order for Phase 1 Studies between U. S. Department of Energy (DOE), New York State Energy Research and Development Authority and Enviro Compliance Solutions Inc. to implement all study activities for all Potential Areas of Study as determined by DOE and New York State Energy Research and Development Authority under this time and materials task order.
- Probabilistic Performance Assessment contract was awarded in the fourth quarter of FY 2015 to a small business for a Time-and-Materials contract to perform a Probabilistic Analysis to Support Phase 2 Decision Making for the West Valley Demonstration Project and New York State Energy Research and Development Authority.

- The West Valley Technical Assistance Contract was awarded in the fourth quarter of FY 2015 as an indefinite delivery / indefinite quantity contract from which task orders will be issued on either a time-and-materials or fixed-price basis. The contractor will provide technical and administrative services in support of DOE's West Valley Demonstration Project location.

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.

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 deactivated 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 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs FY 2016
Defense Environmental Cleanup					
Safeguards and Security					
OH-WV-0020 / Safeguards and Security-West Valley	1,471	1,471	2,591	2,015	-576
Non-Defense Environmental Cleanup					
West Valley Demonstration Project					
OH-WV-0013 / Solid Waste Stabilization and Disposition-West Valley	7,938	7,651	7,938	7,938	0
OH-WV-0040 / Nuclear Facility D&D-West Valley	51,048	51,335	51,275	53,675	+2,400
Subtotal, West Valley Demonstration Project	**58,986**	**58,986**	**59,213**	**61,613**	**+2,400**
Total, West Valley Demonstration Project	**60,457**	**60,457**	**61,804**	**63,628**	**+1,824**

West Valley Demonstration Project Explanation of Major Changes ($K)

	FY 2017 vs FY 2016
Defense Environmental Cleanup	
Safeguards and Security	
OH-WV-0020 / Safeguards and Security-West Valley	
• Reduction reflects FY 2016 enacted funding allocation to enhance protective force response and training requirements; to be maintained in FY 2017 with carryover funding at a proper management level.	-576
Non-Defense Environmental Cleanup	
West Valley Demonstration Project	
OH-WV-0040 / Nuclear Facility D&D-West Valley	
• Increase supports reconfiguring the lagoon system and modification of the State Pollutant Discharge Elimination System permitted discharge system; continue deactivation of the General Purpose Cell; perform minor Infrastructure upgrades; and support Phase 2 Decision Making process.	+2,400
Total, West Valley Demonstration Project	**+1,824**

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 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
$2,591	**$2,015**	**-$576**
• Provide physical and cyber security by an on-site guard force to ensure DOE information resources are identified and protected. • Continue program management to oversee the security program including training and qualifications for the West Valley Demonstration Project.	• Provide physical and cyber security by an on-site guard force to ensure DOE information resources are identified and protected. • Continue program management to oversee the security program including training and qualifications for the West Valley Demonstration Project.	• Reduction reflects FY 2016 enacted funding allocation to enhance protective force response and training requirements; to be maintained in FY 2017 with carryover funding at a proper management level.

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 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
$7,938	**$7,938**	**0**
• 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.	• Process and dispose of newly generated mixed low-level 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. • Process and dispose of legacy low-level waste. • Process and dispose of newly generated low-level waste. • Process and store legacy transuranic waste. • Process and store newly generated transuranic waste.	• 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). This work was previously scheduled to be completed in FY 2015. As a result of incorporation of material differences from the previous contract, this work and canister relocation will continue in 2017. 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 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
$51,275	**$53,675**	**+$2,400**
• 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.	• 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. • Continue removal of excess ancillary facilities. • Begin gas/electric utilities reconfiguration. • Begin Tank 8D-4 content disposition. • Off-site rail line repair and maintenance.	• Increase supports reconfiguring the lagoon system and modification of the State Pollutant Discharge Elimination System permitted discharge system; continue deactivation of the General Purpose Cell; perform minor Infrastructure upgrades; and support Phase 2 Decision Making process.

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 is a collection of facilities within Area IV of the Santa Susana Field Laboratory owned by The Boeing Company. The Energy Technology Engineering Center was DOE's laboratory for nuclear and liquid metal research (non-defense). 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 2017, is being performed in accordance with the requirements of three compliance orders as follows:

- A 2007 order by the U.S. District Court for the Northern District of California requiring DOE to complete an Environmental Impact Statement.
- A 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.
- A 2010 Administrative Order on Consent with the State of California requiring soil remediation to be completed by 2017.

Direct maintenance and repair at the Energy Technology Engineering Center site is estimated to be $220,000.

Highlights of the FY 2017 Budget Request

The Energy Technology Engineering Center's FY 2017 request will enable the site to continue progress toward completion of cleanup, including initiating decontamination and decommissioning and soil remediation and submitting the groundwater final remedy, which is required by 2017 and is a Resource Conservation and Recovery Act milestone established by the 2007 Consent Order and further supported by the 2010 Administrative Order on Consent. Planned progress on required cleanup activities may be impacted due to the Final Environmental Impact Statement and Record of Decision.

FY 2016 & FY 2017 Key Milestones/Outlook

- (November 2015) Issue Draft Environmental Impact Statement for public comment and response.
- (June 2016) Complete Final Environmental Impact Statement.
- (July 2016) Submit the Draft Record of Decision to DOE HQ.
- (2017) Initiate the decontamination & decommissioning of DOE buildings.
- (September 2017) Submit groundwater final remedy.

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 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs FY 2016
Non-Defense Environmental Cleanup					
Small Sites					
Energy Technology Engineering Center					
CBC-ETEC-0040 / Nuclear Facility D&D-Energy Technology Engineering Center	8,959	8,959	10,459	10,459	0

Energy Technology Engineering Center Explanation of Major Changes ($K)

	FY 2017 vs FY 2016
Non-Defense Environmental Cleanup	
Small Sites	
CBC-ETEC-0040 / Nuclear Facility D&D-Energy Technology Engineering Center	
• No change.	0
Total, Energy Technology Engineering Center	**0**

Nuclear Facility D&D-Energy Technology Engineering Center (PBS: CBC-ETEC-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. The scope of this PBS also includes direct maintenance and repair that are applicable to these areas.

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 FY 2016.

The end-state is to complete cleanup for both radiological and chemical contamination, and the 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-ETEC-0040)

Activities and Explanation of Changes

FY 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
$10,459	**$10,459**	**0**
• Perform ongoing program support, groundwater monitoring, surveillance and maintenance and operational services. • Issue the Draft Environmental Impact Statement and hold public meetings. • Respond to comments received on Draft	• Perform ongoing program support and operational services. • Initiate decontamination and decommissioning of remaining structures and soil remediation based on the Record of Decision. • Submit groundwater final remedy in compliance	• No change.

Environmental Impact Statement.
- Develop and issue Final Environmental Impact Statement.
- Issue the Record of Decision.

with the Consent Order with the state of California.

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 January 2016, the project has hauled over 8,000,000 tons of uranium mill tailings from the Moab site to the disposal site, meaning the project has reached 50 percent completion. On November 18, 2014, an unexpected rock fall occurred on the hillside above the rail bench which stopped hauling operations entirely for several months. Safety measures were established to mitigate the risks of future incidents, which include radar monitoring, rock fall modeling, construction of a ditch, wall and berm, realignment of the haul road, and a shelter in place on the rail bench. Hauling operations were resumed deliberately through a gradual ramp up to full operations.

Direct maintenance and repair at the Moab Site is estimated to be $605,000.

Highlights of the FY 2017 Budget Request

Shipping of approximately 710,000 tons of tailings; place interim cover; excavate a new portion of the disposal cell; and address deferred maintenance.

FY 2016 & FY 2017 Key Milestones/Outlook

- (Sep 2016) Excavate, transport, and dispose of 750,000 tons of tailings and excavate a portion of the disposal cell.
- (Sep 2017) Excavate, transport, and dispose of approximately 710,000 tons of tailings and excavate a portion of the disposal cell.

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 is conducting 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 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs FY 2016
Non-Defense Environmental Cleanup					
Small Sites					
Moab					
CBC-MOAB-0031 / Soil and Water Remediation-Moab	35,663	37,867	38,644	34,784	-3,860

Moab Explanation of Major Changes ($K)

	FY 2017 vs FY 2016
Non-Defense Environmental Cleanup	
Small Sites	
Moab	
CBC-MOAB-0031 / Soil and Water Remediation-Moab	
• The decrease reflects shift in activities from transportation of tailings to excavation of disposal cell capacity.	-3,860
Total, Moab	**-3,860**

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.

The scope of this PBS also includes direct maintenance and repair that are applicable to these areas.

Soil and Water Remediation-Moab (PBS: CBC-MOAB-0031)

Activities and Explanation of Changes

FY 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
$38,644	**$34,784**	**-$3,860**
• Conduct Moab and Crescent Junction sites operation and maintenance. • Operate interim remedial action for contaminated groundwater including extracting 6,000,000 gallons and diverting/injecting 9,000,000 gallons. • Excavate tailings and transport from mill site to the disposal cell (750,000 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). • Initiate excavation of a portion of the Phase 3 disposal cell.	• Conduct Moab and Crescent Junction sites operation and maintenance. • Operate interim remedial action for contaminated groundwater including extracting 6,000,000 gallons and diverting/injecting 9,000,000 gallons. • Excavate tailings and transport from mill site to the disposal cell (up to 650,000 tons). • Place tailings into the disposal cell. • Continue excavation of a portion of the Phase 3 disposal cell. • Continue actions to mitigate impact and reduce future risks associated with rock fall(s). • Place protective interim cover on filled section of the disposal cell.	• The decrease reflects shift in activities from transportation of tailings to excavation of disposal cell capacity.

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 2017. 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. In the FY 2016 Omnibus Appropriations Bill, DOE received an additional $17,000,000. 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 2017 funding requested 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 has been submitted to the Committees on Appropriations of the House and Senate. In the FY 2016 Omnibus Appropriations Bill, DOE received $9,500,000 to complete the planning work for cleanup. DOE has no liability at this facility. Funds will be transferred to the University of Arkansas through a Cooperative Agreement. There is no FY 2017 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 needed to support the EM program mission.

Highlights of the FY 2017 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 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs FY 2016
Defense Environmental Cleanup					
Closure Sites					
Closure Sites Administration					
CBC-0100-FN / CBC Post Closure Administration - Fernald	1,500	1,000	1,300	1,000	-300
CBC-0100-RF / CBC Post Closure Administration - Rocky Flats	3,389	3,889	3,589	8,389	+4,800
Subtotal, Closure Sites Administration	**4,889**	**4,889**	**4,889**	**9,389**	**+4,500**
Non-Defense Environmental Cleanup					
Small Sites					
Closure Sites Administration					
CBC-ND-0100 / CBC - Non-Defense Post Closure Administration and Program Support	8,408	8,408	0	0	0
DOE-Sponsored Facilities (per P.L. 112-74)					
CBC-LBNL-0040 / Decontamination and Decommissioning-Lawrence Berkeley National Laboratory	0	0	17,000	0	-17,000
Southwest Experimental Fast Oxide Reactor (SEFOR)					
SEFOR / SEFOR	0	0	9,500	0	-9,500
Total, Small Sites	**8,408**	**8,408**	**26,500**	**0**	**-26,500**
Total, Other Sites	**13,297**	**13,297**	**31,389**	**9,389**	**-22,000**

Other Sites Explanation of Major Changes ($K)

	FY 2017 vs FY 2016
Defense Environmental Cleanup	
Closure Sites	
Closure Sites Administration	
CBC-0100-FN / CBC Post Closure Administration - Fernald	
• No significant change.	-300
CBC-0100-RF / CBC Post Closure Administration - Rocky Flats	
• Increase reflects reimbursement of the Judgement Fund for attorney's fee related to the Rockwell International Corp Settlement and increased activity in legal claims.	+4,800
Non-Defense Environmental Cleanup	
Small Sites	
DOE-Sponsored Facilities (per P.L. 112-74)	
CBC-LBNL-0040 / Decontamination and Decommissioning-Lawrence Berkeley National Laboratory	
• The decrease reflects the use of prior year funding.	-17,000
Southwest Experimental Fast Oxide Reactor (SEFOR)	
SEFOR / SEFOR	
• The decrease reflects that DOE has no liability at this facility.	-9,500
Total, Other Sites	**-22,000**

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 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
$1,300	**$1,000**	**-$300**
• Fund the Fernald Workers II class action lawsuit and contract closeout at the Fernald closure site.	• Fund the Fernald Workers II settlement and contract closeout at the Fernald closure site.	• No significant change.

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 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
$3,589	**$8,389**	**+$4,800**
• 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).	• 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. • The Treasury Judgement Fund paid attorney's fees for litigation related to The Boeing Company on March 3, 2015. All Contract Dispute Act Judgements must be repaid. DOE responded to Department of Treasury indicating that the funding would be requested in FY 2017 to repay the Judgment Fund.	• Increase reflects reimbursement of the Judgement Fund for attorney's fee related to the Rockwell International Corp Settlement and increased activity in legal claims.

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 began early in calendar year 2015 for these Phase 1 activities. Phase 2 includes the deactivation and decommissioning of the Buildings 4, 7, 7C and 14 areas.

Decontamination and Decommissioning-Lawrence Berkeley National Laboratory (PBS: CBC-LBNL-0040)

Activities and Explanation of Changes

FY 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
$17,000	**0**	**-$17,000**
• Continue and complete Phase I deactivation, decontamination and demolition of Buildings 5, 16/16A including slab and soil removal. • Complete removal of PCB wastes. • Complete removal of soil and slabs for Buildings 40/41, 52/52A. • Begin Phase 2 Pre-Critical Decision 2/3 deactivation and decommissioning planning and characterization of Buildings 4, 7, 7C and 14. • Begin Phase 2 Critical Decision 2/3 approval process.	• Complete Phase 2 Pre-Critical Decision 2/3 deactivation and decommissioning planning and characterization of Buildings 4, 7, 7C and 14. • Continue Phase 2 Critical Decision 2/3 approval process. • Initiate Phase 2 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.	• The decrease reflects the use of prior year funding.

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 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
$9,500	**0**	**-$9,500**
• Develop Cooperative Agreement with the University of Arkansas to transfer funds for deactivation and decommissioning. • Provide technical support/assistance to the University of Arkansas as they complete deactivation and decommissioning under Arkansas environmental regulations and standards.	• Provide technical support/assistance to the University of Arkansas as they complete deactivation and decommissioning under Arkansas environmental regulations and standards.	• The decrease reflects that DOE has no liability at this facility.

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, Remediation, Robotics, Radiochemistry, 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 traineeship program supports master's- and Ph.D.-level graduate student appointments at DOE laboratories for practical, hands-on experience supporting a broad range of subsurface remediation, robotics, radiochemistry, and project management applications, ensuring cross-disciplinary training.

Strategic Sourcing Initiative

In FY 2012, EM embarked on the Strategic Sourcing Initiative effort led by the EM Consolidated Business Center in conjunction with the National Nuclear Security Administration. Strategic Sourcing Initiative is an initiative whereby materials such as concrete, steel, etc., are located and purchased corporately, netting EM economies of scale savings. Tools such as e-Sourcing, Commodity Savings Agreements, and e-Catalog are utilized by contractors to achieve the savings. EM's Strategic Sourcing savings goal for fiscal year 2015 was $20,000,000. This goal was surpassed, achieving a total savings of $28,000,000 for the fiscal year. EM's Strategic Sourcing savings goal for fiscal year 2016 is $36,800,000.

Technology Development and Deployment

The Technology Development and Deployment program will incorporate several new initiatives and objectives such as increased engagement with colleges and universities, cooperation and collaboration with technologists in other federal agencies, participation on other federal technology programs, and process intensification; the goal being to maximize the use of public funds. This change will be incorporated into the FY 2017 Congressional Budget Justification.

The mission of the Office of Environmental Management is the cleanup of the materials, waste, and environmental contamination resulting from the legacy of nuclear weapons testing and production and the pursuit of nuclear technology in general beginning with the Manhattan Project and extending over the course of the Cold War. The remaining work represents some of the most complex and technically challenging cleanup efforts anywhere in the world.

The Technology Development and Deployment program offers the opportunity to find ways to reduce the aggregate cleanup program cost, to perform the job more effectively and safely, and to accelerate the work. The infusion of new technology and innovative solutions are necessary because there are significant challenges associated with the cleanup work ahead. Without the utilization of new technology, it is not clear that the EM mission can be completed satisfactorily or at any reasonable cost.

EM Technology Development and Deployment provides the opportunity to reduce the aggregate cleanup cost, complete cleanup sooner and, more importantly, perform work and operate facilities more effectively and in a manner that assures public, worker and environmental safely. New and novel technologies as well as innovative solutions are needed to address the significant challenges associated with the remaining nuclear cleanup work that will span the next five decades. The program encompasses the entire maturation lifecycle of technology which includes transfer of technologies from other nuclear and non-nuclear industry sectors. The program addresses issues related to: (1) radioactive liquid and solid waste treatment, storage and disposal, (2) soil and groundwater remediation, (3) nuclear materials and spent fuel management and disposition, (4) facility deactivation and decommissioning; and (5) public, worker, facility/asset, and environmental safety and security.

The FY 2017 budget request is structured to address the need for near-term innovations, mission enablers, and grand challenges. Near-term innovations represent new technologies and innovative solutions that are needed to address the current problem set in EM's core mission functions. Near-term innovations address current operational challenges, including emergency response and preparedness. Mission enablers represent new and novel technologies and innovative solutions that allow EM to execute its mission activities safer and smarter. Grand challenges represent mission gaps and uncertainties that are rooted in fundamental science or engineering. Grand challenges typically have site-wide or program-wide implications, broad applications, and the potential for dramatic reduction to lifecycle costs and schedules as well as mission liabilities.

EM's technology portfolio will leverage and harness the expertise, resources, and capabilities of universities and colleges. Academia will support EM in three distinct roles: (1) as an expert-based resource for conducting basic and applied scientific research and for providing engineering solutions; (2) as a pool of recognized subject matter experts to support technical peer reviews and independent technical assessments; and (3) as incubators and pipelines for EM's future workforce.

EM will engage other federal technologists to identify cross-cutting technologies and mutual interests in scientific and technological advancements. Collaborating with technologists in other federal agencies, participating on other federal technology programs and initiatives, and leveraging investments of public funds by other federal agencies are cornerstones of the EM Technology Development and Deployment program. EM will enter into agreements and arrangements for interagency cooperation and collaboration.

Recognizing that many mission enabling technologies are commercially available in non-nuclear industry sectors and entrepreneurial technologists as well as other mature technologies exist in federal agencies that have not been commercialized, EM will seek and exploit the transfer of these technologies to support nuclear cleanup. The radioactive test beds will play a key role in demonstrating the functionality, operability and readiness of these technologies for use in nuclear applications.

Within the FY 2017 Budget Request, EM supports the Departmental crosscut for Subsurface Engineering at $8,000,000, $2,000,000 of which funded within the Technology Development and Deployment program. The overarching Subsurface Engineering (SubTER) goal is the adaptive control of subsurface fractures and fluid flow, a crosscutting challenge that, if achieved, could transform the utilization of the subsurface for both energy production and waste storage. An excerpt from the draft Ten Year Framework and FY 2016-FY 2018 work plan for SubTER states that the goal of the Subsurface Engineering crosscut includes a wide range of applied research activities in subsurface science, including the development of technologies and approaches for subsurface characterization, monitoring, remediation, and waste disposal. EM is also developing advanced computer modeling capabilities to simulate and predict the behavior and evolution of complex natural and engineered subsurface environments over long time periods. EM will support several technology development activities that are highly relevant to the Subsurface Crosscut and that complement efforts in DOE's Office of Nuclear Energy and other DOE programs.

As part of its commitment to the Subsurface Crosscut, EM will focus on developing a universal canister for deep borehole waste disposal. Activities will include design, fabrication and performance testing of waste canisters; assessment of packaging, transportation, and disposal requirements; and development of sensors, detectors, and devices for measurement and imaging. Various radioactive waste forms will also be evaluated for possible deep borehole disposal.

FY 2017 Crosscuts ($K)

	Subsurface Engineering
Technology Development and Deployment	**2,000**

Reimbursement and Financial 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, Title X Uranium and Thorium Reimbursement Program, provides reimbursements to uranium and thorium licensees for the 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 Title X licensees. The Department will conduct financial reviews to ensure eligible costs have been submitted to the Department by the Title X 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 December 2015, 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 FY 2017, the Budget proposes to fund Uranium Enrichment Decontamination and Decommissioning Fund activities, including the Title X Uranium and Thorium Reimbursement Program, using mandatory balances within the United States Enrichment Corporation Fund.

Mercury Storage Facility

The Mercury Export Ban Act of 2008 (P.L. 110-414), 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 generated within the United States. 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 early calendar year 2016. 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.

Mission Support

Funding ($K)

	FY 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs FY 2016
Discretionary					
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	6,979	6,979	6,979	6,979	0
Subtotal, Mission Support	**14,979**	**14,979**	**14,979**	**14,979**	**0**
Technology Development and Deployment					
Mission Support					
HQ-TD-0100 / Technology Development	14,000	13,538	20,000	30,000	+10,000
Total, Defense Environmental Cleanup	**28,979**	**28,517**	**34,979**	**44,979**	**+10,000**
Non-Defense Environmental Cleanup					
Mercury Storage Facility					
Mission Support					
HQ-MSF / Mercury Storage Facility	0	0	1,300	0	-1,300
Uranium Enrichment Decontamination and Decommissioning Fund					
U/Th Reimbursements					
Mission Support					
HQ-UR-0100 / Reimbursements to Uranium/Thorium Licensees	10,000	10,000	32,959	0	-32,959

	FY 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs FY 2016
Mandatory					
United States Enrichment Corporation Fund					
U/Th Reimbursements					
Mission Support					
HQ-UR-0100 / Reimbursements to Uranium/Thorium Licensees	0	0	0	30,000	+30,000
Total, Mission Support	**38,979**	**38,517**	**69,238**	**74,979**	**+5,741**

Mission Support Explanation of Major Changes ($K)

	FY 2017 vs FY 2016
Defense Environmental Cleanup	
Mission Innovation and Technology	
Mission Support	
HQ-TD-0100 / Technology Development	
• The increase reflects the initiation of several new initiatives and objectives including cooperation and collaboration with technologists in other federal agencies, participation on other federal technology programs, more emphasis on robotics research, and development of test beds.	+10,000
Uranium Enrichment Decontamination and Decommissioning Fund	
U/Th Reimbursements	
HQ-UR-0100 / Reimbursements to Uranium/Thorium Licensees	
• Reflects proposal to spend USEC Fund on these activities.	-32,959
United States Enrichment Corporation Fund	
U/Th Reimbursements	
HQ-UR-0100 / Reimbursements to Uranium/Thorium Licensees	
• Reflects proposal to spend USEC Fund on these activities. Net decrease of -$2,959 reflects progress in reimbursement of eligible costs to licensees.	+30,000
Total, Mission Support	**+7,041**

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 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 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
$8,000	**$8,000**	**0**
• 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.	• 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.	• 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, including the Report to Congress 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 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
$6,979	**$6,979**	**0**
• 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	• 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.	▪ No change.

and security, emergency management, quality assurance, nuclear criticality safety, and risk 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.

- Continue to provide expertise in the areas of safety, health and security, emergency 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 and Deployment (PBS: HQ-TD-0100)

Overview

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

The Technology Development and Deployment program will incorporate several new initiatives and objectives such as increased engagement with colleges and universities, cooperation and collaboration with technologists in other federal agencies, participation on other federal technology programs, and process intensification; the goal being to maximize the use of public funds. This change will be incorporated into the FY 2017 Congressional Budget Justification.

The EM Technology Development and Deployment program provides the opportunity to reduce the aggregate cleanup cost, complete cleanup sooner and, more importantly, perform work and operate facilities more effectively and in a manner that assures public, worker and environmental safely. New and novel technologies as well as innovative solutions are needed to address the significant challenges associated with the remaining nuclear cleanup work that will span the next five decades. The program encompasses the entire maturation lifecycle of technology which includes transfer of technologies from other nuclear and non-nuclear industry sectors. The program addresses issues related to: (1) radioactive liquid and solid waste treatment, storage and disposal, (2) soil and groundwater remediation, (3) nuclear materials and spent fuel management and disposition, (4) facility deactivation and decommissioning, and (5) public, worker, facility/asset, and environmental safety and security.

The FY 2017 budget increase is commensurate with the needs and technical gaps in the EM's program. The FY 2017 EM budget request addresses the tactical need for technologies that improve day-to-day operations, particularly those that:

- Address the current problem set;
- Provide impactful improvements in worker health and safety and facility safety;
- Minimize the generation of secondary or new wastes and process-related waste streams and generates no orphan waste;
- Allow for incremental improvements in operational efficiency and sustainability of its assets and facilities;
- Allow for process intensification;
- Provide impactful improvements to the security of its assets and facilities; and
- Provide enhanced capabilities to respond to emergencies, operational upsets, or other unplanned or beyond-design-basis events.

EM's technology portfolio will also address the strategic need for investing in fundamental research and seeking high-impact, game-changing technologies and solutions that are smart and positively impact EM's lifecycle by: (1) reducing lifecycle costs; (2) accelerating lifecycle schedules; (3) mitigating mission uncertainties, vulnerabilities, and risks; and (4) minimizing the mortgage associated with long-term, post-closure and post-completion stewardship.

The FY 2017 budget request is structured to address the need for near-term innovations, mission enablers, and grand challenges. Near-term innovations represent new technologies and innovative solutions that are needed to address the current problem set in EM's core mission functions. Near-term innovations address current operational challenges, including emergency response and preparedness. Mission enablers represent new and novel technologies and innovative solutions that allow EM to execute its mission activities safer and smarter. Grand challenges represent mission gaps and uncertainties that are rooted in fundamental science or engineering. Grand challenges typically have site-wide or program-wide implications, broad applications, and the potential for dramatic reduction to lifecycle costs and schedules as well as mission liabilities.

EM's technology portfolio will leverage and harness the expertise, resources, and capabilities of US universities and colleges. Academia will support EM in three distinct roles: (1) as an expert-based resource for conducting basic and applied scientific research and for providing engineering solutions; (2) as a pool of recognized subject matter experts to support technical peer reviews and independent technical assessments; and (3) as incubators and pipelines for EM's future workforce.

EM will engage other federal technologists to identify cross-cutting technologies and mutual interests in scientific and technological advancements. Collaborating with technologists in other federal agencies, participating on other federal technology programs and initiatives, and leveraging investments of public funds by other federal agencies are cornerstones of the EM mission innovation and technology. EM will enter into agreements and arrangements for interagency cooperation and collaboration.

Near-Term Innovative Solutions

Cesium and Strontium Challenge

EM manages a number of waste streams, including cesium/strontium capsules at the Hanford Site and calcine waste at the Idaho National Laboratory that lack a disposal pathway. At Hanford's Waste Encapsulation and Storage Facility, 1,335 stainless steel capsules of Cesium-137 (74 million curies) and 601 capsules of Strontium-90 (32 million curies) are in underwater storage in a pool about 13 feet deep. At Idaho National Laboratory, there are 43 stainless steel bins (cylindrical storage vessels) within which about 4,400 cubic meters or 5.5 million kilograms of calcine waste (liquid high level waste that was converted into a granular solid using a thermal process referred to as calcination resulting in a 7 to 1 volume reduction) is stored. EM is exploring disposition paths for these wastes, including the potential for permanent disposal in deep geologic boreholes. Similarly, spent non-elutable resins being developed to capture Cesium and Technetium from tank waste separations processes may be suitable for deep borehole disposal. EM technology development will focus on non-elutable resins for Cesium and Strontium and on the development of a set of instrumented universal canisters, along with remote sensors and detection systems, for the containment of wastes emplaced in deep boreholes. This work complements and supports the Office of Nuclear Energy's borehole demonstration project through the DOE Subsurface Technology and Engineering Research Initiative.

Mercury Challenge

Approximately 3% of the 11 million kilograms of elemental mercury used from 1950 to 1963 for lithium isotope separation processes at the Y-12 National Security Complex (Y-12) (Oak Ridge, Tennessee) was lost to the air, to the soil and rock under facilities, to impregnation of the building substrate (concrete) itself, and to East Fork Poplar Creek, which originates onsite. Remediation of the mercury contamination at Y-12 as well as in East Fork Poplar Creek is a critical element of EM's cleanup effort. Mercury cleanup poses significant technical and regulatory challenges and can benefit from development of new tools and approaches for eliminating sources and remediating environmental media and ecosystems. Regulatory approval of mercury cleanup plans may be difficult to secure without clear evidence of effective remedial methods based on mature technologies. Technology development activities must focus on in-situ mercury treatment, mercury source zone identification and characterization, ecological impacts, and improved conceptual and numerical models of mercury fate and transport.

The Remediation of Mercury and Industrial Contaminants Applied Field Research Initiative will focus on demonstrating novel in-situ stabilization processes for mercury-contaminated soil. Modules for surface water and mercury biogeochemistry modeling will be developed to optimize the Oak Ridge site's mercury remediation strategy. Additional testing will be performed to determine other effects of in-situ remediation methods. Associated initiatives to address the identification, mitigation, and prevention for releasing mercury (including vapors) during Decontamination and Decommissioning are also included.

Additionally, mercury has recently been measured in higher than historical amounts in the liquid tank waste at the Savannah River Site, posing challenges and complications for the treatment of this waste. In particular, high levels of monomethyl mercury were measured in the Tank 50 feed to saltstone. Compensatory and corrective measures have been taken and included a reassessment of the overall system knowledge, a ranking and prioritization of critical information and technology gaps, and an assessment of removal and disposal options. The filling of technology gaps is aimed at mitigating and managing mercury contamination to facilitate efficient, cost-effective treatment of the tank waste.

Technetium Challenge

Among radioactive constituents present in tank waste, select facilities undergoing decommissioning, and in the environment, Technetium-99 (Tc-99) presents a unique challenge because of its moderately high radiotoxicity, its long half-life (211,000 years), and its complex chemical behavior. Because Technetium-99 is produced as a fission product in reactors, and is a by-product from nuclear weapons production activities, understanding and managing it is a challenge to EM. At Hanford, the inventory of Technetium-99 is about 27,000 curies, with about 26,500 curies contained in the waste tanks and about 1,000 curies in the sediments and soils. At the Savannah River Site, there is about 41,500 curies of Technetium-99, of which only about 1,400 has been treated and immobilized as glass or saltstone.

Storage, separation, capture and immobilization must address multiple chemical species and their behavior. The four areas of focus are for the Technetium-99 challenge: (1) characterization (inventory, source terms, distribution, and speciation); (2) mathematical and computational modeling for simulating and predicting Technetium-99 behaviors; (3) treatment options for waste processing and environmental remediation; and (4) disposition (acceptable waste forms and end states).

Other Operational Challenges

Waste Processing – Develop, demonstrate and/or deploy: (1) waste processing models to enhance the predictive capability of the waste treatment process to include incorporating cost and uncertainty in lifecycle forecast models; (2) technologies or other improvements to current technologies that either enable timely startup of facilities or accelerate waste processing; and (3) predictive models that can be used in process flow development, process operations, process upset avoidance and waste systems optimization.

Waste Retrieval and Tank Closure – Develop, demonstrate, and/or deploy: (1) the technical basis for risk-informed tank closure; (2) analytical methods and instrumentation for in situ characterization of waste; (3) enhanced capabilities for mathematical and computational modeling; and (4) tools to improve the performance of cementitious barriers and waste forms.

Process Intensification – Design and implement innovative changes to operating facilities, process flow sheets, and system plans that effect dramatic improvements in waste processing as well as in remedial performance by optimizing existing operational designs and schemes. Process intensification includes, but is not limited to, the use of innovative equipment or alternative processing solutions that achieve substantially improved sustainability, efficiency, effectiveness, and safety while reducing capital, operating and/or lifecycle costs. Process intensification includes themes such as: miniaturization of equipment and plant; minimization and elimination of process-generated waste; acutely enhanced flow and hydrodynamics; acutely enhanced thermodynamics; improved targeted chemical reactivity; marked reductions in pollutant discharges; significant life extensions to operating and remediation systems; and multi-functionality.

Facility and Infrastructure Management – Develop, demonstration, and/or deploy (1) technologies and solutions that help ensure the safety and operability of EM's assets and facilities such as spent nuclear fuel pools and basins, operating waste processing facilities, and remediation systems and (2) develop technologies and innovative solutions to ensure the safety of EM's inactive facilities during extended periods of dormancy as well as during deactivation and decommissioning.

Facility Deactivation and Decommissioning – Develop, demonstrate, and/or deploy: (1) technologies and solutions that minimize or eliminate the need for direct worker access in high-hazard areas; (2) decontamination and other contaminant-reducing technologies; (3) fixatives, stabilizers, getters and other technologies that sequester pollutants and hazards such that they no longer pose occupational hazards; and (4) in situ characterization and monitoring technologies.

Through the course of mission execution, other near-term challenges will likely arise that may require resources as solutions are sought. These will be addressed based on mission priority and operational urgency.

Mission Enablers

Robotics

This investment is in the area of robotics and semi-autonomous systems that are needed for remote access in nuclear, chemical, and other high-hazard facilities that are inaccessible, restricted to human entry by size and configuration, or otherwise preclude the safe and direct entry by workers. EM is placing emphasis on the application of robotics for: (1) handling of high-hazard, high-consequence (i.e., chemical, biological, radiological, and nuclear) materials and waste, (2) performing worker/operator tasks that are dirty (contaminated, toxic, nuisance), dull (routine, labor-intensive, repetitive, mundane), and dangerous (pose significant occupational hazards); (3) easing the performance of worker/operator tasks that are physically demanding on or stressful to human body or are otherwise ergonomically challenging; (4) performing tasks that are beyond human abilities; (5) improving the ability to respond to and recover from unplanned events or operational emergencies; and (6) improving the safety, quality, efficiency, and productivity of facility and environmental operations.

Topics and areas of technological pursuit for the application of EM robotics may include, but are not limited to:

- Remote Access - Radiation hardened systems and radiation tolerant systems that provide remote entry into areas and spaces that are otherwise inaccessible or prohibit direct access by workers
- Non-Destructive and *In Situ* Testing and Evaluation - Radiation hardened/tolerant tooling and methods for non-destructive sensing, detecting, monitoring, measuring, characterizing, and assaying
- Imaging, Surveying, Mapping, and 3D Rendering - Radiation hardened/tolerant tooling and methods for the generation of graphical depictions and representations of the real world
- Manipulation and End-Effectors - Radiation hardened/tolerant systems for remotely performing tasks in harsh environments or work conditions to keep occupational exposure to hazards as low as reasonably achievable (ALARA)
- Worker Assistance - Wearable and prosthetic-like radiation hardened/tolerant robotic devices (a.k.a., co-robots) that improve worker health and safety, enhance worker performance and endurance, or compensate for physical limitations of extremities by relieving physical stresses on the body and avoiding occupational injuries such as those caused by: repetitive and forceful exertions and motions; frequent, heavy, or overhead lifts or tasks; ergonomically incorrect work positions; use of vibrating (shock-inducing) equipment; and muscle fatigue
- Heavy Operations - Radiation hardened/tolerant systems for performing tasks that are beyond worker capability and require substantially greater strength, dexterity, reach and access, or capacity
- Task Automation - Radiation hardened/tolerant systems for more efficiently performing routine or repetitive tasks and operations such that worker interface is needed only for performance monitoring and quality control.

This investment is intended to support the National Robotics Initiative as part of the President's Advanced Manufacturing Partnership to accelerate the development and use of robots in the United States that work beside or cooperatively with people. This investment is intended to implement, in part, broader collaboration with other federal agencies, colleges and universities, and other non-federal technology and research centers.

Test Beds

This investment will provide physical platforms (test beds) to demonstrate innovative tooling, treatment technologies, and other technical solutions at existing EM nuclear facilities and assets. Test beds will greatly extend the abovementioned technology development efforts by providing environment- or process-relevant conditions under which testing may be conducted. EM's test beds will be made available for use by innovators, researchers, and technology developers from other federal agencies, laboratories, academic institutions, and research institutions. Special consideration will be given to entrepreneurs, start-up companies, minority-serving institutions, and not-for-profit organizations. EM also advocates the use of test beds to promote collaboration and cooperation in mission-critical areas. Test beds will be made available to support all EM mission areas and will include a variety of platforms such as physical and virtual mockups as needed to assess technological maturity and relevance. Remediation approaches will be tested at Savannah River Site that combines natural attenuation mechanisms with engineered remedies for long-term stabilization. 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.

Data Acquisition and Management

This investment provides for the use of new and novel tooling and techniques for non-destructive testing and evaluation. Specifically, radiation hardened/tolerant acoustic, optical, radiographic, thermographic, electromagnetic, and other tooling and methods for non-destructive sensing, detecting, monitoring, measuring, characterizing, and assaying a wide variety of radiological, chemical, environmental, and physical parameters are sought. This includes *in-situ* tools and techniques.

Innovation in imaging, surveying, mapping, and 3D rendering is also sought. Radiation hardened/tolerant tooling and methods for the generation of graphical depictions and representations as well as virtual replications, simulations and models of the real world provide for critical information for mission execution.

Enhanced capabilities in data analytics are needed to improve decision making, uncertainty and risk reduction, design intent and basis, and mathematical and computational model validation and verification.

Enhanced capabilities in data mining are needed to sort through huge data sets to: identify undiscovered patterns, trends and tendencies; identify new correlations and relationships; and potentially lead to new discoveries and insights on the transformations, interdependencies, and interactions of radiological and chemical contaminants.

Enhanced capabilities in mathematical modeling and computation fluid dynamics are needed for highly complex mechanical, environmental and ecological systems. This includes tailoring the fundamentals of advanced computing to the problems and issues in waste processing, remediation, contaminant fate and transport, performance assessment, and composite analyses. Enhancement of specific architectures, development of solution-focused algorithms, and tailored applications require further investigation. Verification and validation of codes, software quality assurance, and stakeholder and regulatory acceptance are critical to this enhanced capability of computer-based simulation and prediction.

Technology Transfer

Recognizing that many mission enabling technologies are commercially available in non-nuclear industry sectors and entrepreneurial technologists as well as other mature technologies exist in federal agencies that have not been commercialized, EM will seek and exploit the transfer of these technologies to support nuclear cleanup. The radioactive test beds will play a key role in demonstrating the functionality, operability and readiness of these technologies for use in nuclear applications.

Grand Challenges

EM will pursue grand challenges that provide impactful gains in the cleanup mission, particularly those that have the promise for significant cost and schedule reductions in EM's environmental liability. In doing so, EM will develop a mission innovation and technology roadmap to identify grand challenges to the EM program, identify potential solutions sets, and determine optimal insertion points. The roadmap will span the various time horizons of the EM lifecycle. The roadmap will provide a framework for and guide the maturation and infusion of new and novel technologies as well as innovative solutions. This investment will initiate grand challenge initiatives.

Technology Development (PBS: HQ-TD-0100)

Activities and Explanation of Changes

FY 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
$20,000	**$30,000**	**+$10,000**
Tank Waste • 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 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	• Near-Term Innovative Solutions: - Continue investigating alternative disposition pathways and novel technologies for dispositioning high consequence materials such as the Cesium and Strontium waste. - Continue to demonstrate non-elutable resins and alternative filtration techniques for radioactive contaminants. - Continue evaluating and testing remedial technologies for mercury contamination in soils, water, and biota; and technologies and techniques for mercury removal from the waste processing stream. - Continue to investigate the speciation, transformation, and behavior of Technetium-99 in waste process streams and pursue related technologies and solutions that help close uncertainty gaps. - Through the development, deployment, and transfer of technologies and innovative solutions, continue to address new and	• The increase reflects the initiation of several new initiatives and objectives including cooperation and collaboration with technologists in other federal agencies, participation on other federal technology programs, more emphasis on robotics research, and development of test beds.

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 mercury and radionuclides of interest for possible development at the Hanford and/ or Savannah River Sites.
- Begin efforts to demonstrate that a commercially available ion exchange technology for removing Cs-137 can be technically modified to treat the Savannah River Site highly radioactive waste tanks. Use of the technology will accelerate tank closure.

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.
- Conduct deep borehole field test.

Soil and Groundwater Remediation

- Support the utilization of Advanced Simulation Capability for Environmental Management initially at the Los Alamos National Laboratory, the Savannah River Site, and the Nevada National Security Site.
- Test and demonstrate the multi-agency exit strategy for pump and treat systems.
- Complete pilot demonstration of a new paradigm for a long-term monitoring using master geochemical variables.
- Complete the initial laboratory-scale evaluations of in-situ stabilization methods for elemental mercury in soil.
- Complete the update of the conceptual model for mercury contamination at the Oak Ridge Reservation.

emerging operational challenges in waste processing, waste retrieval and tank closure, process intensification, aging facility and infrastructure management, and facility deactivation and decommissioning.

- Mission Enabling Technologies/Solutions:
  - Continue to infuse and integrate robotic solutions technologies for: (1) handling of high-hazard, high-consequence materials and waste, (2) performing worker/operator tasks that are dirty, dull, and dangerous; (3) easing the performance of worker/operator tasks that are physically demanding on or stressful to human body; (4) performing tasks that are beyond human abilities; (5) enhanced emergency response and recovery; (6) improving the safety, quality, efficiency, and productivity of facility operations.
  - Continue establishing radioactive test bed capability for demonstrating innovative tooling, treatment technologies, and other technical solutions at existing EM nuclear facilities and assets.
  - Continue to invest in mission-relevant innovations in data acquisition and management, including: non-destructive testing and evaluation; imaging, surveying, mapping, and 3D rendering; data analytics; data mining; and mathematical modeling and computation fluid dynamics.
  - Develop and define risk-informed remediation end points to reduce the need to excavate and dispose of contaminated soil and groundwater.
  - Develop new geophysical monitoring tools to assess current and future deep vadose zone contamination distributions and flux to groundwater.

Deactivation and Decommissioning

- 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.
  - Develop a test bed for the testing of tools and processes to remove and/or stabilize mercury in the subsurface to prevent flux to receptors.
- Continue to identify and pursue grand challenges that provide impactful gains in the cleanup mission, particularly those that have the promise for significant cost and schedule reductions in EM's environmental liability.
- Continue harnessing the expertise, resources, and capabilities of universities and colleges, including Minority Serving Institutions.
- Continue partnering with Office of Nuclear Energy on University-led technology projects.
- Continue to enter into agreements with other federal agencies and continue to participate in other federal technology programs and initiatives in order to: leverage advancements in the state-of-the-art; share assets, resources, capabilities; share expertise and knowledge; and maximize taxpayer funds.

Mercury Storage Facility (PBS: HQ-MSF)

Overview

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

This PBS supports the construction and operation of an interim storage facility for elemental Mercury until a permanent repository is determined. The scope of this PBS also includes all supporting infrastructure and support functions for the interim elemental Mercury storage facility.

The Mercury Export Ban Act of 2008 (P.L. 110-414), which banned the export of elemental mercury generated in the United States beginning in 2013, directs DOE to designate and construct at least one facility for the long-term management and storage of elemental Mercury generated within the United States. The Act directs DOE to designate a Mercury storage facility(ies) and be ready to accept custody of elemental Mercury and begin storage operations by January 1, 2013. DOE has analyzed the storage of up to 10,000 metric tons of elemental Mercury in a facility(ies) constructed and operated in accordance with the Solid Waste Disposal Act, as amended by 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.

Mercury Storage Facility (PBS: HQ-MSF)

Activities and Explanation of Changes

FY 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
$1,300	**0**	**-$1,300**
• Initiate requisite environmental reviews and other design and planning activities needed to support the development of the record of decision.	• Continue requisite environmental reviews and other design and planning activities needed to support the development of the record of decision.	• The decrease reflects the use of prior year funding.

Uranium/Thorium Reimbursements (PBS: HQ-UR-0100)

Overview

This PBS can be found within the Uranium Enrichment D&D Fund appropriation in 2016 and the mandatory United States Enrichment Corporation Fund proposal in 2017.

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 uranium and thorium processing site licensees for the portion of 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 Department will conduct financial reviews to ensure eligible costs have been submitted to the Department by Title X 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 December 2015, three of the fourteen sites have completed remediation and have transferred their disposal facilities to DOE for long-term stewardship. 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.

Reimbursements to Uranium/Thorium Licensees (PBS: HQ-UR-0100)

Activities and Explanation of Changes

FY 2016 Enacted	FY 2017 Proposal	Explanation of Changes FY 2017 vs FY 2016
$32,959	**$30,000**	**-$2,959**
• 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.	• Continue to 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. • Continue to provide payment to licensees of approved but unpaid claims from FY 2015 and prior.	• Reflects proposal to spend USEC Fund on these activities. Net decrease of -$2,959 reflects progress in reimbursement of eligible costs to licensees.

Title X of the Energy Policy Act of 1992: Uranium/Thorium Reimbursement Program
Status of Payments through Fiscal Year 2015 and Estimated Maximum Program Liability
($ Thousands)

Licensees	Total Payments FY 1994-FY 2015	Approved but Unpaid Claim Balances After FY 2015 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	1,280	1	826
Atlantic Richfield Company[a]	32,306	0	0
Atlas Corporation/Moab Mill Reclamation Trust[a]	9,694	0	0
Cotter Corporation	3,170	241	3,460
Dawn Mining Company	10,703	4,960	8,448
Homestake Mining Company	55,731	10,113	87,676
Pathfinder Mines Corporation	10,785	5	292
Petrotomics Company[a]	2,850	0	0
Rio Algom Mining LLC[b]	41,943	3,582	6,138
Tennessee Valley Authority	16,353	8,777	8,777
Umetco Minerals Corporation-CO	57,372	18,094	32,545
Umetco Minerals Corporation-WY	21,164	3,895	5,683
Western Nuclear, Incorporated	32,145	586	1,484
Subtotal, Uranium	296,316	50,254	155,329

Licensees	Total Payments FY 1994-FY 2015	Approved but Unpaid Claim Balances After FY 2015 Payments	Maximum Remaining Program Liability Including Estimated Costs in Approved Plans for Subsequent Remedial Action
Thorium			
West Chicago[c]	356,980	27,908	41,968
Subtotal, Thorium	356,980	27,908	41,968
Total, Uranium and Thorium	653,296	78,162	197,297

[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.

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.

	FY 2015	FY 2016	FY 2017
Performance Goal (Measure)	**Liquid Waste in Inventory eliminated (Thousands of Gallons)**		
Target	7,592	9,492	8,509
Result	6,863/Not Met	Not applicable	Not applicable
Endpoint Target	This metric has a life cycle estimate of 89,150 thousand gallons.		
Performance Goal (Measure)	**Liquid Waste Tanks closed (Number of Tanks)**		
Target	15	15	15
Result	14/Not Met	Not applicable	Not applicable
Endpoint Target	This metric has a life cycle estimate of 238 tanks.		
Performance Goal (Measure)	**High-Level Waste packaged for final disposition (Number of Containers)**		
Target	4,405	4,680	4,503
Result	4,241/Not Met	Not applicable	Not applicable
Endpoint Target	This metric has a life cycle estimate of 23,890 containers.		
Performance Goal (Measure)	**Plutonium Metal or Oxide packaged for long-term storage (Number of Containers)**		
Target		Measure Completed	

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	93,624	125,124	151,955
Result	79,232/Not Met	Not applicable	Not applicable
Endpoint Target	This metric has a life cycle estimate of 723,016 metric tons.		

Performance Goal (Measure)	**Material Access Areas eliminated (Number of Material Access Areas)**		
Target	30	34	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)**

Target	2,130	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	Not Applicable [Note]	Not Applicable [Note]	102,636
Result	102,026/Met	Not applicable	Not applicable
Endpoint Target	This metric has a life cycle estimate of 151,940 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.		

Performance Goal (Measure)	**Transuranic Waste Dispositioned (Cubic meters) - Remote Handled**		
Target	Not Applicable [Note]	Not Applicable [Note]	349
Result	349/Met	Not applicable	Not applicable
Endpoint Target	This metric has a life cycle estimate of 7,286 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.		

Performance Goal (Measure)	**Transuranic Waste Dispositioned (Cubic meters) - Contact Handled**		
Target	Not Applicable [Note]	Not Applicable [Note]	102,287
Result	101,678/Met	Not applicable	Not applicable
Endpoint Target	This metric has a life cycle estimate of 144,654 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.		
Performance Goal (Measure)	**Legacy and Newly Generated Low-Level and Mixed Low-Level Waste disposed (Cubic meters)**		
Target	1,204,720	1,314,398	1,344,445
Result	1,315,101/Met	Not applicable	Not applicable
Endpoint Target	This metric has a life cycle estimate of 1,587,658 cubic meters.		
Performance Goal (Measure)	**Nuclear Facility Completions (Number of Facilities)**		
Target	153	164	164
Result	151/Not Met	Not applicable	Not applicable
Endpoint Target	This metric has a life cycle estimate of 489 facilities.		
Performance Goal (Measure)	**Radioactive Facility Completions (Number of Facilities)**		
Target	563	593	586
Result	565/Met	Not applicable	Not applicable
Endpoint Target	This metric has a life cycle estimate of 982 facilities.		
Performance Goal (Measure)	**Industrial Facility Completions (Number of Facilities)**		
Target	2,107	2,184	2,129
Result	2,105/Not Met	Not applicable	Not applicable
Endpoint Target	This metric has a life cycle estimate of 4,137 facilities.		

Performance Goal (Measure)	**Remediation Complete (Number of Release Sites)**		
Target	8,201	9,312	8,368
Result	8,047/Not Met	Not applicable	Not applicable
Endpoint Target	This metric has a life cycle estimate of 10,874 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 2017 Budget Request

EM maintains a safe and secure posture in the EM complex, while maximizing the investment in compliance activities. The FY 2017 budget request supports:

- Continued construction of two unique and complex tank waste processing plants at the Savannah River Site and the Office of River Protection.
- Treatment of high level radioactive waste in tanks across the complex.
- Continued production of hundreds of canisters of vitrified waste derived and processed from the high level waste tanks and construction of an additional on-site disposal spaces for saltstone at the Savannah River Site.
- 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.
- Aggressively complete and operate the treatment facilities and infrastructure to safely immobilize and dispose of tank waste at Hanford.

The Office of River Protection, Savannah River, Idaho, Portsmouth and Paducah, Carlsbad have hired contract specialists, recent graduates, cost estimators, as well as site specific new hires such as Tank Farm, Environmental Compliance, Quality Assurance, Mine Safety, and Facility Representative specialists as a result of scope modifications and maintain safety levels.

Although EM has made progress in hiring these critical positions across the complex, 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 hired 17 Recent Graduates in FY 2015 and is planning to hire 20 additional Recent Graduates in early FY 2017. The Recent Graduates will be hired to address short and long-term needs in our Mission Critical Occupations that include engineering and physical science. These hires will be assigned to duty stations across the EM complex.

In November 2014, the Secretary of Energy directed NNSA and EM to transition the acquisition and management of EM funded legacy cleanup work at Los Alamos National Laboratory from NNSA to EM. The legacy cleanup scope transferred from NNSA to EM is referred to as the EM Los Alamos Legacy Cleanup Completion Project. EM's Los Alamos (EM-LA) Field Office was established on March 22, 2015. The goal is to establish a staffing plan for EM-LA and a framework for recruiting and maintaining critical technical and non-technical skills, balancing workforce diversity, and developing a skills pipeline. EM-LA will identify staffing and workforce capabilities needed during the period from 2015 through 2020. Staffing levels at EM-LA are impacted by transition needs requiring establishment of a Field Office, existing gaps in functional skills and

abilities, fluctuating workloads, EM hiring controls, an aging workforce, and the remote location of the Field Offices. Transition of contracts from NNSA to EM is also a challenge. As of early FY 2016, EM-LA consisted of 20 Federal employees, compared to 35 authorized positions, and support contractor personnel. The current authorized positions are based on EM-LA's recently completed workforce analysis, which assesses the needs to accomplish the current mission. This budget supports 35 authorized positions.

Working Capital Fund (WCF) estimates for FY 2017 include the third year of Office of Personnel Management credit monitoring and projected inflation increases in existing WCF programs including corporate business systems, building occupancy, interagency transfers, and telecommunications. EM's share of this estimated increase is $2,690,000.

In the FY 2017 Budget Request, funding for the WCF is estimated in Program Direction's Headquarters other related expenses for those services that directly support the Federal staff. Other activities, including CyberOne and audit costs, are still funded through program dollars, reflecting the close connection between these activities and program activities.

Funding ($K)
Program Direction Summary

	FY 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs FY 2016
Carlsbad					
Salaries and Benefits	8,803	8,406	11,548	11,791	+243
Travel	473	473	428	428	0
Other Related Expenses	328	328	50	150	+100
Total, Carlsbad	**9,604**	**9,207**	**12,026**	**12,369**	**+343**
Idaho					
Salaries and Benefits	6,925	6,138	7,231	7,345	+114
Travel	180	180	170	170	0
Support Services	80	80	85	85	0
Other Related Expenses	533	533	50	100	+50
Total, Idaho	**7,718**	**6,931**	**7,536**	**7,700**	**+164**
Oak Ridge					
Salaries and Benefits	11,467	11,467	11,959	12,215	+256
Travel	193	193	303	303	0
Support Services	71	71	74	74	0
Other Related Expenses	3,032	3,032	300	550	+250
Total, Oak Ridge	**14,763**	**14,763**	**12,636**	**13,142**	**+506**
Portsmouth/Paducah Project Office					
Salaries and Benefits	8,091	8,004	10,807	11,028	+221
Travel	352	352	238	238	0
Support Services	1,079	1,079	1,098	1,098	0
Other Related Expenses	2,435	2,435	200	500	+300
Total, Portsmouth/Paducah Project Office	**11,957**	**11,870**	**12,343**	**12,864**	**+521**
Richland					
Salaries and Benefits	35,564	35,489	37,000	38,000	+1,000
Travel	414	414	368	368	0
Support Services	1,518	1,518	1,545	1,545	0
Other Related Expenses	4,566	4,566	300	830	+530
Total, Richland	**42,062**	**41,987**	**39,213**	**40,743**	**+1,530**
River Protection					
Salaries and Benefits	23,990	23,990	25,817	26,489	+672
Travel	458	458	613	613	0
Support Services	2,446	2,446	2,490	2,490	0
Other Related Expenses	4,115	4,115	300	750	+450
Total, River Protection	**31,009**	**31,009**	**29,220**	**30,342**	**+1,122**
Savannah River					
Salaries and Benefits	38,646	38,601	42,740	43,904	+1,164
Travel	510	510	507	507	0
Support Services	2,598	2,598	2,644	2,644	0
Other Related Expenses	2,781	2,781	300	600	+300
Total, Savannah River	**44,535**	**44,490**	**46,191**	**47,655**	**+1,464**

	FY 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs FY 2016
Small Sites					
Salaries and Benefits	3,864	3,838	5,150	5,250	+100
Travel	171	171	169	169	0
Support Services	459	459	467	467	0
Other Related Expenses	586	586	50	100	+50
Total, Small Sites	**5,080**	**5,054**	**5,836**	**5,986**	**+150**
Nevada Site Office					
Salaries and Benefits	2,503	2,503	2,796	2,849	+53
Travel	82	82	83	83	0
Support Services	76	76	76	76	0
Other Related Expenses	9	9	5	5	0
Total, Nevada Site Office	**2,670**	**2,670**	**2,960**	**3,013**	**+53**
Los Alamos Site Office					
Salaries and Benefits	2,556	2,556	5,234	5,372	+138
Travel	93	93	144	144	0
Support Services	231	231	231	231	0
Other Related Expenses	329	329	50	70	+20
Total, Los Alamos Site Office	**3,209**	**3,209**	**5,659**	**5,817**	**+158**
Field					
Salaries and Benefits	142,409	140,992	160,282	164,243	+3,961
Travel	2,926	2,926	3,023	3,023	0
Support Services	8,558	8,558	8,710	8,710	0
Other Related Expenses	18,714	18,714	1,605	3,655	+2,050
Total, Field	**172,607**	**171,190**	**173,620**	**179,631**	**+6,011**
Headquarters Operations					
Salaries and Benefits	50,584	41,951	51,993	52,980	+987
Travel	2,591	2,591	1,911	1,911	0
Support Services	11,799	24,102	12,921	12,921	0
Other Related Expenses	12,037	9,784	14,360	14,502	+142
Total, Headquarters Operations	**77,011**	**78,428**	**81,185**	**82,314**	**+1,129**
Consolidated Business Center					
Salaries and Benefits	22,843	22,843	21,325	22,084	+759
Travel	800	800	591	591	0
Support Services	4,843	4,843	4,930	4,930	0
Other Related Expenses	2,680	2,680	300	500	+200
Total, Consolidated Business Center	**31,166**	**31,166**	**27,146**	**28,105**	**+959**
Environmental Management					
Salaries and Benefits	215,836	205,786	233,600	239,307	+5,707
Travel	6,317	6,317	5,525	5,525	0
Support Services	25,200	37,503	26,561	26,561	0
Other Related Expenses	33,431	31,178	16,265	18,657	+2,392
Total, Environmental Management	**280,784**	**280,784**	**281,951**	**290,050**	**+8,099**
Full Time Equivalents	**1,389**	**1,389**	**1,460**	**1,460**	**0**

Support Services and Other Related Expenses

	FY 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 Request vs FY 2016 Enacted
Support Services					
Technical Support					
Feasibility of Design Considerations	2,979	4,433	3,140	3,140	-
System Definition	66	98	69	69	-
Economic and Environmental Analysis	4,471	6,654	4,713	4,713	-
Test and Evaluation Studies	59	88	62	62	-
Surveys or Reviews of Technical Operations	6,931	10,314	7,305	7,305	-
Total, Technical Support	14,506	21,587	15,289	15,289	-
Management Support					
Directives Management Studies	1,514	2,253	1,596	1,596	-
Automatic Data Processing	1,442	2,146	1,520	1,520	-
Training and Education	155	231	163	163	-
Analysis of DOE Management Processes	560	834	590	590	-
Reports and Analyses Management and General Administrative Support	7,023	10,452	7,403	7,403	-
Total, Management Support	10,694	15,916	11,272	11,272	-
Total, Support Services	25,200	37,503	26,561	26,561	-
Other Related Expenses					
Rent to GSA	6,216	6,216	589	1,286	+697
Rent to Others	626	626	59	129	+70
Communication, Utilities, Misc.	4,624	4,624	436	957	+521
Printing and Reproduction	60	60	5	12	+7
Other Services	6,557	5,402	509	1,122	+613
Training	1,275	1,275	120	263	+143
Purchases from Gov. Accounts	524	524	49	108	+59

	FY 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 Request vs FY 2016 Enacted
Operation and Maintenance of Equipment	425	425	40	88	+48
Supplies and Materials	795	795	75	164	+89
Equipment	1,292	1,292	122	267	+145
Working Capital Fund	11,037	9,939	14,261	14,261	-
Total, Other Related Expenses	33,431	31,178	16,265	18,657	+2,392

Activities and Explanation of Changes

FY 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
$281,951	**$290,050**	**+$8,099**
Salaries and Benefits **$233,600**	**$239,307**	**+$5,707**
Supports Federal salaries and benefits for EM's planned FTE level of 1,460.	Supports Federal salaries and benefits for EM's planned FTE level of 1,460, including 35 EM/Human Capital FTEs in the Management and Performance Shared Service Center approved October 4, 2015.	Reflects Federal pay raise and increased benefits contributions for EM's 1,460 FTEs.
Travel **$5,525**	**$5,525**	**0**
Maintain travel level in compliance with Executive Order 13589. Additionally, EM will continue to scrutinize conference sponsorship as well as overall conference attendance to further reduce travel costs. .	Includes costs of transportation of persons, subsistence of travelers, incidental travel expenses, as well as funding to support permanent change of duty station in accordance with federal travel regulations. In addition, travel costs associated for recent graduates' rotational assignments at EM sites and training and participation at professional conferences. Includes travel costs associated with the EM/HC Management and Performance Shared Service Center.	No change.
Support Services **$26,561**	**$26,561**	**0**
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 staff.	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 staff.	No change.
Other Related Expenses	**$18,657**	**+$2,392**

$16,265		
EM will fund items such as the field rent, utilities, communications, building and ground maintenance, site-wide health services, and the Working Capital Fund. EM will continue efficiencies for the reintegration of Federal staff to Government-owned facilities.	Includes funding for the Working Capital Fund for services that directly support the Federal staff. Funds Federal training, supplies, and IT equipment as well as Field rent, communications and utilities. Provides for expenses for those FTEs in EM/Human Capital Management and Performance Shared Service Center. EM will continue efficiencies for the reintegration of Federal staff to Government-owned facilities.	Reflects inflation for field rent and communication/utilities, training, supplies, and IT equipment. Funds the Working Capital Fund for those activities that directly support the Federal staff including the third year of the Office of Personnel Management credit monitoring.

D&D Fund Deposit

Overview

Established in 1992, the Uranium Enrichment Decontamination and Decommissioning Fund pays, subject to appropriation, the decontamination and decommissioning costs of the Department of Energy's gaseous diffusion plants in Tennessee, Ohio, and Kentucky. 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 $208,000,000 (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 $680,000,000 (also adjusted for inflation), with the remainder above the industry assessment to come from appropriated funds from the Defense Environmental Cleanup account. The Administration proposes to authorize the use of balances in the United States Enrichment Corporation Fund for the same purpose as the Uranium Enrichment Decontamination and Decommissioning Fund. The reauthorization of the special assessment on domestic nuclear utilities will also offset the cost of the United States Enrichment Corporation Fund proposal. These proposals reflect 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 2017 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.

D&D Fund Deposit

Funding ($K)

	FY 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs FY 2016
Defense Environmental Cleanup					
Contribution to the Uranium Enrichment D&D Fund					
HQ-DD-0100 / Federal Contribution to the Uranium Enrichment D&D Fund	463,000	463,000	0	155,100	+155,100

D&D Fund Deposit Explanation of Major Changes ($K)

	FY 2017 vs FY 2016
Defense Environmental Cleanup	
Contribution to the Uranium Enrichment D&D Fund	
HQ-DD-0100 / Federal Contribution to the Uranium Enrichment D&D Fund	
• Increase reflects the Federal government contribution to Uranium Enrichment Decontamination and Decommissioning Fund, as required by the Energy Policy Act of 1992.	+155,100
Total, D&D Fund Deposit	**+155,100**

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 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
0	**$155,100**	**+$155,100**
▪ No activity.	▪ Provide the FY 2017 Federal Government contribution to the Uranium Enrichment Decontamination and Decommissioning Fund, as required by the Energy Policy Act of 1992.	• Increase reflects the Federal government contribution to Uranium Enrichment Decontamination and Decommissioning Fund, as required by the Energy Policy Act of 1992.

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

Costs for Direct-Funded Maintenance and Repair (including Deferred Maintenance Reduction)

($K)

	FY 2015 Actual Cost[a]	FY 2015 Planned Cost	FY 2016 Planned Cost	FY 2017 Planned Cost
Carlsbad	13,210	9,606	12,644	18,304
Energy Technology Engineering Center	220	220	220	220
Idaho National Laboratory	24,439	22,700	23,177	23,664
Moab	550	200	542	605
Oak Ridge	42,851	41,737	37,759	43,401
Pacific Northwest National Laboratory	0	0	0	0
Paducah	23,307	28,283	27,007	24,547
Portsmouth	60,564	44,691	29,951	51,427
Richland Operations Office	53,288	59,534	61,857	84,844
Office of River Protection	61,674	53,984	122,689	75,413
Savannah River	163,961	146,294	135,576	145,700
Total, Direct-Funded Maintenance and Repair	444,064	407,249	451,422	468,125

[a]FY 2015 Actual Costs are based on 4th quarter data.

FY 2017 Direct Maintenance and Repair Scope by Site

Carlsbad –
The FY 2017 Direct Maintenance and Repair funding at Carlsbad will initiate and complete the salt hoist controller upgrades. As well as continuation of the following: fire suppression system repairs; electrical distribution system repairs; mine ground control and bolting; plant air system maintenance and repairs; and heating, ventilation, and air conditioning system maintenance.

Energy Technology Engineering Center –
The FY 2017 Direct Maintenance and Repair funding at the Energy Technology Engineering Center will monitor the facilities that are RCRA permitted buildings weekly. Environmental Monitoring using continuous air monitors at Energy Technology Engineering Center radiological facilities as well as weekly monitoring of the Energy Technology Engineering Center buildings.

Idaho –
The FY 2017 Direct Maintenance and Repair funding at Idaho will provide Idaho Nuclear Technology and Engineering Center utilities, maintenance and operations for the process waste system, support laboratories, and existing process facilities. Replace obsolete emergency alarm and announcing system.

Moab –
The FY 2017 Direct Maintenance and Repair funding at Moab is developed from site condition assessments and periodic inspections performed for both Crescent Junction and Moab sites. Site assets include maintenance shops, trailers for personnel, and other facilities including roads, electric and water systems.

Oak Ridge –
The FY 2017 Direct Maintenance and Repair funding at Oak Ridge will maintain surplus facilities within the Y-12/Oak Ridge National Laboratory/East Tennessee Technology Park sites in a safe and regulatory compliant condition that protects the

site workers, environment, and the public. This includes facility oversight and surveillance inspections determined by facility authorization basis documents, radiological protection surveys to check for contamination migration and routine, corrective, and preventative maintenance actions. Maintenance actions included repairs required on electrical, fire protection, heating, steam and ventilation systems.

Paducah –
The FY 2017 Direct Maintenance and Repair funding at Paducah supports the following: surveillance and maintenance of roadways, parking lots, utilities and infrastructure; predictive, preventative, or corrective maintenance of facilities and surveillance and maintenance of cylinders and conversion equipment for the Depleted Uranium Hexafluoride Conversion Facility.

Portsmouth –
The FY 2017 Direct Maintenance and Repair funding at Portsmouth supports the following: surveillance and maintenance of roadways, parking lots, utilities and infrastructure; predictive, preventative, or corrective maintenance of facilities and surveillance and maintenance of cylinders and conversion equipment for the Depleted Uranium Hexafluoride Conversion Facility.

River Protection –
The FY 2017 Direct Maintenance and Repair funding at River Protection supports continuation of 222-S, 242-A, ETF and Tank Farms corrective and preventative maintenance. As well as continuation of 222-S, 242-A, and Tank Farms Equipment Replacement.

Richland –
The FY 2017 Direct Maintenance and Repair funding at Richland supports routine maintenance on site utilities and infrastructure including water, sewer, electrical distribution, and road systems. Also will support the following activities: reduce corrective maintenance backlog on water, sewer, and electrical systems; perform critical repairs to roads and water system as well as execute habitability repairs on key facilities.

Savannah River –
The FY 2017 Direct Maintenance and Repair funding at Savannah River supports maintenance activities required to maintain and preserve plant, property, and equipment in a condition suitable for its designated purpose, including preventative, periodic and corrective work. Also supports repair activities to restore and replacement of deteriorated items such that it may be used for its designated purpose.

Costs for Indirect-Funded Maintenance and Repair (including Deferred Maintenance Reduction)

	FY 2015 Actual Cost[a]	FY 2015 Planned Cost	FY 2016 Planned Cost	FY 2017 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	5,412	4,865	5,195	5,036
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	19,613	22,503	31,907	31,138
Total, Indirect-Funded Maintenance and Repair	25,025	27,368	37,102	36,174

[a]FY 2015 Actual Costs are based on 4th quarter data.

FY 2017 Indirect Maintenance and Repair Scope by Site

Pacific Northwest National Laboratory (PNNL) –
The FY 2017 Indirect Maintenance and Repair funding at the PNNL covers the activities necessary to sustain all of the PNNL operated EM facilities in a manner that promotes efficient operations, worker safety, environmental compliance, and property protection. These sustainment activities include preventative maintenance, corrective repairs, and building system replacements.

Savannah River –
The FY 2017 Indirect Maintenance and Repair funding at Savannah River cover Common Infrastructure Maintenance that supports all site programs. Common Infrastructure supports the site's predictive, preventative, and corrective maintenance for facilities "outside the fence" or not under direct program responsibility that supports "all" site programs (both EM and NNSA).

Report on FY 2015 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 2015 to the amount planned for FY 2015, including Congressionally directed changes.

Environmental Management Research and Development
Research and Development ($K)

	FY 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs FY 2016
Basic	0	0	0	0	0
Applied	4,620	4,468	7,524	10,890	3,366
Development	9,380	9,070	15,276	22,110	6,834
Subtotal, R&D	14,000	13,538	22,800	33,000	10,200
Equipment	0	0	0	0	0
Construction	0	0	0	0	0
Total, R&D	**14,000**	**13,538**	**22,800**	**33,000**	**10,200**

Environmental Management
Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR)

	FY 2015 Transferred	FY 2016 Projected Transfer	FY 2017 Request Projected Transfer	FY 2017 vs FY 2016
Headquarters				
SBIR	406	600	960	360
STTR	56	90	135	45
Oak Ridge				
SBIR	0	84	96	12
STTR	0	13	14	1
Total, SBIR	**406**	**684**	**1,056**	**372**
Total, STTR	**56**	**103**	**149**	**46**

Safeguards and Security by Activity ($K)

	FY 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs FY 2016
Carlsbad					
Protective Forces	3,645	3,645	3,173	3,311	+138
Physical Security Systems	209	209	526	284	-242
Information Security	241	241	0	0	0
Security Investigations	0	0	63	58	-5
Program Management	322	322	253	242	-11
Subtotal, Carlsbad	**4,417**	**4,417**	**4,015**	**3,895**	**-120**
Cyber Security	38	38	845	965	+120
Total, Carlsbad	**4,455**	**4,455**	**4,860**	**4,860**	**0**
Oak Ridge					
Protective Forces	11,814	11,773	7,606	9,820	+2,214
Physical Security Systems	1,216	1,145	740	955	+215
Information Security	301	411	266	343	+77
Personnel Security	1,050	905	585	755	+170
Material Control and Accountability	728	698	451	582	+131
Program Management	546	641	414	535	+121
Subtotal, Oak Ridge	**15,655**	**15,573**	**10,062**	**12,990**	**+2,928**
Cyber Security	727	809	1,766	2,010	+244
Total, Oak Ridge	**16,382**	**16,382**	**11,828**	**15,000**	**+3,172**
Paducah					
Protective Forces	4,690	7,297	8,758	6,959	-1,799
Physical Security Systems	584	0	0	1,974	+1,974
Information Security	803	0	2,539	1,609	-930
Personnel Security	219	0	0	695	+695
Security Investigations	0	0	0	419	+419
Material Control and Accountability	221	0	0	0	0
Program Management	488	0	0	1,290	+1,290
Subtotal, Paducah	**7,005**	**7,297**	**11,297**	**12,946**	**+1,649**
Cyber Security	292	0	1,919	1,103	-816
Total, Paducah	**7,297**	**7,297**	**13,216**	**14,049**	**+833**
Portsmouth					
Protective Forces	4,766	0	9,390	9,881	+491

	FY 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs FY 2016
Physical Security Systems	823	0	0	1,741	+1,741
Personnel Security	428	0	222	597	+375
Security Investigations	0	8,492	509	419	-90
Program Management	1,753	0	371	308	-63
Subtotal, Portsmouth	**7,770**	**8,492**	**10,492**	**12,946**	**+2,454**
Cyber Security	722	0	0	1,103	+1,103
Total, Portsmouth	**8,492**	**8,492**	**10,492**	**14,049**	**+3,557**
Richland					
Protective Forces	39,396	45,331	31,971	44,252	+12,281
Physical Security Systems	6,850	5,093	10,857	5,770	-5,087
Information Security	924	1,000	1,013	847	-166
Personnel Security	1,436	2,331	2,281	2,448	+167
Security Investigations	0	0	191	180	-11
Material Control and Accountability	1,249	1,000	1,579	1,053	-526
Program Management	11,335	6,367	9,398	8,033	-1,365
Subtotal, Richland	**61,190**	**61,122**	**57,290**	**62,583**	**+5,293**
Cyber Security	2,478	2,546	8,211	9,417	+1,206
Total, Richland	**63,668**	**63,668**	**65,501**	**72,000**	**+6,499**
Savannah River					
Protective Forces	87,120	90,336	83,944	89,736	+5,792
Physical Security Systems	22,391	14,280	16,902	17,622	+720
Information Security	910	1,412	1,444	1,505	+61
Personnel Security	2,975	5,333	5,307	5,534	+227
Security Investigations	350	320	499	320	-179
Material Control and Accountability	2,224	2,449	2,734	2,654	-80
Security Infrastructure/Construction	10,000	10,000	0	0	0
Program Management	10,312	12,185	11,611	11,950	+339
Transportation	259	400	1,952	375	-1,577
Subtotal, Savannah River	**136,541**	**136,715**	**124,393**	**129,696**	**+5,303**
Cyber Security	1,694	1,520	3,752	4,304	+552
Total, Savannah River	**138,235**	**138,235**	**128,145**	**134,000**	**+5,855**
West Valley Demonstration Project					
Protective Forces	993	1,112	1,430	848	-582
Program Management	190	193	284	169	-115

	FY 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs FY 2016
Subtotal, West Valley Demonstration Project	**1,183**	**1,305**	**1,714**	**1,017**	**-697**
Cyber Security	288	166	877	998	+121
Total, West Valley Demonstration Project	**1,471**	**1,471**	**2,591**	**2,015**	**-576**
Total, Safeguards and Security	**240,000**	**240,000**	**236,633**	**255,973**	**+19,340**

Safeguards and Security ($K)

	FY 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs FY 2016
Protective Forces	152,424	159,494	146,272	164,807	+18,535
Physical Security Systems	32,073	20,727	29,025	28,346	-679
Information Security	3,179	3,064	5,262	4,304	-958
Personnel Security	6,108	8,569	8,395	10,029	+1,634
Security Investigations	350	8,812	1,262	1,396	+134
Material Control and Accountability	4,422	4,147	4,764	4,289	-475
Security Infrastructure/Construction	10,000	10,000	0	0	0
Program Management	24,946	19,708	22,331	22,527	+196
Transportation	259	400	1,952	375	-1,577
Subtotal, Safeguards and Security	**233,761**	**234,921**	**219,263**	**236,073**	**+16,810**
Cyber Security	6,239	5,079	17,370	19,900	+2,530
Total, Safeguards and Security	**240,000**	**240,000**	**236,633**	**255,973**	**+19,340**

Department Of Energy
FY 2017 Congressional Budget
Funding By Appropriation By Site
($K)

Defense Environmental Cleanup	FY 2015 Current	FY 2016 Enacted	FY 2017 Request
Carlsbad Area Office			
Program Direction			
Carlsbad	9,207	12,324	13,061
Safeguards and Security			
Waste Isolation Pilot Plant	4,455	4,860	4,860
Total, Carlsbad Area Office	**13,662**	**17,184**	**17,921**
Consolidated Business Center			
Program Direction			
Consolidated Business Center	36,220	36,021	33,249
Total, Consolidated Business Center	**36,220**	**36,021**	**33,249**
East Tennessee Technology Park (K25)			
Safeguards and Security			
Oak Ridge Reservation	16,382	11,828	15,000
Total, East Tennessee Technology Park (K25)	**16,382**	**11,828**	**15,000**
Energy Technology Engineering Center			
Oak Ridge Reservation			
Nuclear Facility D & D, ETTP	0	0	100
Total, Energy Technology Engineering Center	**0**	**0**	**100**
Fernald Environmental Management Project			
Closure Sites			
Fernald	1,500	1,300	1,000
Total, Fernald Environmental Management Project	**1,500**	**1,300**	**1,000**
Hanford Site			
Hanford Site			
Central Plateau Remediation	543,511	632,179	641,304
River Corridor & Other Cleanup Operations	377,788	270,710	64,755
Total, Hanford Site	**921,299**	**902,889**	**706,059**
Safeguards and Security			
Richland/Hanford Site	63,668	65,501	72,000
Total, Hanford Site	**984,967**	**968,390**	**778,059**
Idaho National Laboratory			
Idaho National Laboratory			
Idaho Community and Regulatory Support	2,910	3,000	3,000
Idaho Clean-up and Waste Disposition	377,293	393,000	359,088
Total, Idaho National Laboratory	**380,203**	**396,000**	**362,088**
Total, Idaho National Laboratory	**380,203**	**396,000**	**362,088**

Department Of Energy
FY 2017 Congressional Budget
Funding By Appropriation By Site
($K)

Defense Environmental Cleanup	FY 2015 Current	FY 2016 Enacted	FY 2017 Request
Idaho Operations Office			
Program Direction			
Idaho	6,931	7,882	8,192
Total, Idaho Operations Office	**6,931**	**7,882**	**8,192**
Lawrence Livermore National Laboratory			
NNSA Sites			
NNSA Sites	1,128	1,128	1,147
Total, Lawrence Livermore National Laboratory	**1,128**	**1,128**	**1,147**
Los Alamos National Laboratory			
NNSA Sites			
NNSA Sites	182,645	181,606	0
Los Alamos National Laboratory	4,600	0	0
Total, NNSA Sites	**187,245**	**181,606**	**0**
Los Alamos			
EMLA Cleanup Activities	0	0	185,606
EMLA Community and Regulatory Support	0	0	3,394
Total, Los Alamos	**0**	**0**	**189,000**
Total, Los Alamos National Laboratory	**187,245**	**181,606**	**189,000**
Miamisburg Site			
Closure Sites			
Miamisburg	0	0	0
Total, Miamisburg Site	**0**	**0**	**0**
Nevada Field Office			
Program Direction			
Nevada	2,670	3,080	3,033
NNSA Sites			
NNSA Sites	18,407	23,825	19,989
Total, Nevada Field Office	**21,077**	**26,905**	**23,022**
Nevada National Security Site			
NNSA Sites			
NNSA Sites	46,444	38,560	42,187
Total, Nevada National Security Site	**46,444**	**38,560**	**42,187**

Department Of Energy
FY 2017 Congressional Budget
Funding By Appropriation By Site
($K)

Defense Environmental Cleanup	FY 2015 Current	FY 2016 Enacted	FY 2017 Request
NNSA Albuquerque Complex			
Program Direction			
Los Alamos	3,209	3,809	6,059
NNSA Sites			
NNSA Sites	2,593	3,632	249
Total, NNSA Albuquerque Complex	**5,802**	**7,441**	**6,308**
Oak Ridge National Laboratory			
Oak Ridge Reservation			
Nuclear Facility D & D, ORNL	39,858	45,900	50,409
U233 Disposition Program	0	35,895	37,311
Total, Oak Ridge Reservation	**39,858**	**81,795**	**87,720**
Total, Oak Ridge National Laboratory	**39,858**	**81,795**	**87,720**
Oak Ridge Office			
Oak Ridge Reservation			
Nuclear Facility D & D, Y-12	9,400	9,400	5,100
Clean-up and Disposition	4,200	0	0
Total, Oak Ridge Reservation	**13,600**	**9,400**	**5,100**
Program Direction			
Oak Ridge	14,763	14,231	16,693
Total, Oak Ridge Office	**28,363**	**23,631**	**21,793**
Oak Ridge Reservation			
Oak Ridge Reservation			
Clean-up and Disposition	131,930	74,597	54,557
Total, Oak Ridge Reservation	**131,930**	**74,597**	**54,557**
Oak Ridge Reservation (Off-Site)			
Oak Ridge Reservation			
ORR Community and Regulatory Support	4,365	4,400	4,400
Total, Oak Ridge Reservation (Off-Site)	**4,365**	**4,400**	**4,400**
Office of River Protection			
Office of River Protection			
Tank Farm Activities	522,000	649,000	733,965
Waste Treatment Plant	667,000	690,000	693,000
Total, Office of River Protection	**1,189,000**	**1,339,000**	**1,426,965**
Program Direction			
Office of River Protection	31,009	29,022	31,974
Total, Office of River Protection	**1,220,009**	**1,368,022**	**1,458,939**

Department Of Energy
FY 2017 Congressional Budget
Funding By Appropriation By Site
($K)

Defense Environmental Cleanup	FY 2015 Current	FY 2016 Enacted	FY 2017 Request
Paducah Gaseous Diffusion Plant			
Program Direction			
Paducah/Portsmouth	11,870	12,075	15,008
Safeguards and Security			
Paducah	7,297	13,216	14,049
Total, Paducah Gaseous Diffusion Plant	**19,167**	**25,291**	**29,057**
Portsmouth Gaseous Diffusion Plant			
Safeguards and Security			
Portsmouth	8,492	10,492	14,049
Total, Portsmouth Gaseous Diffusion Plant	**8,492**	**10,492**	**14,049**
Richland Operations Office			
Hanford Site			
Community and Regulatory Support	19,701	19,701	19,701
Office of River Protection			
Tank Farm Activities	23,000	75,000	73,000
Program Direction			
Richland	41,987	43,473	43,128
Total, Richland Operations Office	**84,688**	**138,174**	**135,829**
Rocky Flats Site			
Closure Sites			
Rocky Flats	3,389	3,589	8,389
Total, Rocky Flats Site	**3,389**	**3,589**	**8,389**
Sandia National Laboratories			
NNSA Sites			
NNSA Sites	2,801	2,500	4,130
Total, Sandia National Laboratories	**2,801**	**2,500**	**4,130**
Savannah River Operations Office			
Savannah River Sites			
Community and Regulatory Support	11,013	11,249	11,249
Program Direction			
Savannah River	44,490	46,578	48,123
Safeguards and Security			
Savannah River Site	138,235	128,145	134,000
Total, Savannah River Operations Office	**193,738**	**185,972**	**193,372**

Department Of Energy
FY 2017 Congressional Budget Funding
By Appropriation By Site
($K)

Defense Environmental Cleanup	FY 2015 Current	FY 2016 Enacted	FY 2017 Request
Savannah River Site			
Savannah River Sites			
Site Risk Management Operations	397,976	413,652	0
Radioactive Liquid Tank Waste Stabilization and Disposition	712,318	783,520	813,783
Nuclear Material Management	0	0	325,726
Environmental Cleanup	0	0	163,242
Total, Savannah River Sites	**1,110,294**	**1,197,172**	**1,302,751**
Total, Savannah River Site	**1,110,294**	**1,197,172**	**1,302,751**
Separations Process Research Unit			
NNSA Sites			
NNSA Sites	0	0	3,685
Total, Separations Process Research Unit	**0**	**0**	**3,685**
Washington Headquarters			
Program Direction			
Headquarters	78,428	73,456	71,530
Program Support			
Program Support	14,979	14,979	14,979
Uranium Enrichment D&D Fund Contribution			
Uranium Enrichment D&D Fund Contribution	463,000	0	155,100
Technology Development			
Technology Development	13,538	20,000	0
Mission Innovation and Technology			
Mission Innovation and Technology	0	0	30,000
Total, Washington Headquarters	**569,945**	**108,435**	**271,609**
Waste Isolation Pilot Plant			
Waste Isolation Pilot Plant			
Operation and Maintenance	320,000	299,978	266,140
Total, Waste Isolation Pilot Plant	**320,000**	**299,978**	**266,140**
West Valley Demonstration Project			
Safeguards and Security			
West Valley	1,471	2,591	2,015
Total, West Valley Demonstration Project	**1,471**	**2,591**	**2,015**
Y-12 Site Office			
Oak Ridge Reservation			
Nuclear Facility D & D, Y-12	33,297	66,058	43,342
OR Technology Development and Deployment	0	2,800	3,000
Total, Oak Ridge Reservation	**33,297**	**68,858**	**46,342**
Total, Y-12 Site Office	**33,297**	**68,858**	**46,342**

Department Of Energy
FY 2017 Congressional Budget
Funding By Appropriation By Site
($K)

Defense Environmental Cleanup	FY 2015 Current	FY 2016 Enacted	FY 2017 Request
Total, Defense Environmental Cleanup	5,473,368	5,289,742	5,382,050

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 both Houses of Congress 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 both Houses of Congress 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 both Houses of Congress 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**]** *accompanying this* 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 both Houses of Congress at least 30 days prior to the use of any proposed reprogramming that 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 both Houses of Congress 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. 3094) during fiscal year **[**2016**]** *2017* until the enactment of the Intelligence Authorization Act for fiscal year **[**2016**]** *2017*.

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. Notwithstanding section 301(c) of this Act, none of the funds made available under the heading "Department of Energy—Energy Programs—Science" in this or any subsequent Energy and Water Development and Related Agencies appropriations Act for any fiscal year 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. 307. (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 both Houses of Congress, in classified form if necessary, a report on the justification for the waiver.**]**

SEC. **[**308**]** *307*. (a) NEW REGIONAL RESERVES.—The Secretary of Energy may not establish any new regional petroleum product reserve 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.

(b)The budget request or notification shall include—

(1) the justification for the new reserve;

(2) a cost estimate for the establishment, operation, and maintenance of the reserve, including funding sources;

(3) a detailed plan for operation of the reserve, including the conditions upon which the products may be released;

(4) the location of the reserve; and

(5) the estimate of the total inventory of the reserve.

[SEC. 309. Of the amounts made available by this Act for "National Nuclear Security Administration—Weapons Activities", up to $50,000,000 may be reprogrammed within such account for Domestic Uranium Enrichment, subject to the notice requirement in section 301(e).**]**

[SEC. 310. (a) Unobligated balances available from 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", $1,355,149.00 from Public Law 110–161; $627,299.24 from Public Law 111–8; and $1,824,051.94 from Public Law 111–85.

(2) "Energy Programs—Science", $3,200,000.00.

(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. 311. Notwithstanding any other provision of law, the provisions of 40 U.S.C. 11319 shall not apply to funds appropriated in this title to Federally Funded Research and Development Centers sponsored by the Department of Energy.]

[SEC. 312. 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. 313. (a) Of the funds appropriated in prior Acts under the headings "Fossil Energy Research and Development" and "Clean Coal Technology" for prior solicitations under the Clean Coal Power Initiative and FutureGen, not less than $160,000,000 from projects selected under such solicitations that have not reached financial close and have not secured funding sufficient to construct the project prior to 30 days after the date of enactment of this Act shall be deobligated, if necessary, shall be utilized for previously selected demonstration projects under such solicitations that have reached financial close or have otherwise secured funding sufficient to construct the project prior to 30 days after the date of enactment of this Act, and shall be allocated among such projects in proportion to the total financial contribution by the recipients to those projects stipulated in their respective cooperative agreements.

(b) Funds utilized pursuant to subsection (a) shall be administered in accordance with the provisions in the Act in which the funds for those demonstration projects were originally appropriated, except that financial assistance for costs in excess of those estimated as of the date of award of the original financial assistance may be provided in excess of the proportion of costs borne by the Government in the original agreement and shall not be limited to 25 percent of the original financial assistance.

(c) No amounts may be repurposed pursuant to 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.

(d) This section shall be fully implemented not later than 60 days after the date of enactment of this Act.]

SEC. 308. Amounts made available by this title may be transferred to the Technology Commercialization Fund in amounts not to exceed 0.9% of the amounts appropriated for applied energy research and development. Amounts so transferred shall be available for a broad spectrum of energy technology or combination of technologies, consistent with section 1001 of the Energy Policy Act of 2005 (42 U.S. Code paragraph 16391(e)), and shall remain available until expended.

SEC. 309. Not to exceed 5 percent of any appropriation made available for Department of Energy activities funded in this Act or subsequent Energy and Water Development and Related Agencies Appropriations Acts may be transferred between such appropriations, but no such appropriation, except as otherwise provided, shall be increased or decreased by more than 5 percent by any such transfers, and notification of any such transfers shall be submitted promptly to the Committees on Appropriations of the House of Representatives and the Senate.

SEC. 310. Consolidated Emergency Operations Center. Amounts available for the Department of Energy under this title in this and prior appropriations Acts shall be available for the design of a consolidated Emergency Operations Center: Provided, That no amounts may be repurposed from amounts that were designated by the Congress as an emergency requirement pursuant to the Concurrent Resolution on the Budget or the Balanced Budget and Emergency Deficit Control Act of 1985, as amended.

SEC. 311. TREATMENT OF LOBBYING AND POLITICAL ACTIVITY COSTS AS ALLOWABLE COSTS UNDER DEPARTMENT OF ENERGY CONTRACTS.

(a) Allowable Costs.—

(1) Section 4801(b) of the Atomic Energy Defense Act (50 U.S.C. 2781(b)) is amended—

(A) by striking "(1)" and all that follows through "the Secretary" and inserting "The Secretary"; and

(B) by striking paragraph (2).

(2) Section 305 of the Energy and Water Development Appropriation Act, 1988, as contained in section 101(d) of Public Law 100–202 (101 Stat. 1329–125), is repealed.

(b) Regulations Revised.—The Secretary of Energy shall revise existing regulations consistent with the repeal of 50 U.S.C. 2781(b)(2) and section 305 of Public Law 100–202 and shall issue regulations to implement 50 U.S.C. 2781(b), as amended by subsection (a), no later than 150 days after the date of the enactment of this Act. Such regulations shall be consistent with the Federal Acquisition Regulation 48 C.F.R. 31.205–22.

(Energy and Water Development and Related Agencies Appropriations Act, 2016.)

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 both Houses of Congress 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 Action to Address Environmental Justice in Minority Populations and Low-Income Populations). *(Energy and Water Development and Related Agencies Appropriations Act, 2016.)*