

Department of Energy FY 2023 Congressional Budget Request



Environmental Management

Department of Energy

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Volume 6

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DEPARTMENT OF ENERGY
Appropriation Summary
(dollars in thousands)

Department of Energy	FY 2021 Enacted	FY 2022 Annualized CR	FY2023 Request	FY 2023 vs. FY 21 Enacted	
				\$	%
Department of Energy					
Energy Efficiency and Renewable Energy	2,861,760	2,861,760	4,018,885	1,157,125	40.4%
Electricity	211,720	211,720	297,386	85,666	40.5%
Cybersecurity, Energy Security, and Emergency Response	156,000	156,000	202,143	46,143	29.6%
Petroleum Reserves					
Strategic Petroleum Reserves	188,000	188,000	214,175	26,175	13.9%
Naval Petroleum & Oil Shale Reserves	13,006	13,006	13,004	-2	0.0%
SPR - Petroleum Account	1,000	1,000	8,000	7,000	700.0%
Northeast Home Heating Oil Reserves	6,500	6,500	7,000	500	7.7%
Subtotal, Petroleum Reserves	208,506	208,506	242,179	33,673	16.1%
Grid Deployment Office	-	-	90,221	90,221	N/A
Federal Energy Management Program (FEMP)	-	-	169,661	169,661	N/A
Office of Manufacturing & Energy Supply Chains (MESC)	-	-	27,424	27,424	N/A
Office of State and Community Energy Programs (SCEP)	-	-	726,897	726,897	N/A
Nuclear Energy	1,357,800	1,357,800	1,518,460	160,660	11.8%
Nuclear Waste Disposal	27,500	27,500	10,205	-17,295	-62.9%
Fossil Energy and Carbon Management	750,000	750,000	893,160	143,160	19.1%
Uranium Enrichment Decontamination and Decommissioning Fund (UED&D)	841,000	841,000	822,421	-18,579	-2.2%
Energy Information Administration	126,800	126,800	144,480	17,680	13.9%
Non-Defense Environmental Cleanup	319,200	319,200	323,249	4,049	1.3%
Science	7,026,000	7,026,000	7,799,211	773,211	11.0%
Office of Technology Transitions	-	-	21,558	21,558	N/A
Office of Clean Energy Demonstrations	-	-	214,052	214,052	N/A
Advanced Research Project Agency-Energy	427,000	427,000	700,150	273,150	64.0%
Departmental Administration	166,000	166,000	397,203	231,203	139.3%
Indian Energy Policy and Programs	22,000	22,000	150,039	128,039	582.0%
Office of Inspector General	57,739	57,739	106,808	49,069	85.0%
Loan Programs					
Title 17 - Innovative Technology Loan Guarantee Program (1)	29,000	29,000	168,206	139,206	480.0%
Advanced Technology Vehicles Manufacturing Loan Program	5,000	5,000	9,800	4,800	96.0%
Tribal Energy Loan Guarantee Program	2,000	2,000	1,860	-140	-7.0%
Subtotal, Loan Programs	36,000	36,000	179,866	143,866	399.6%
Subtotal, Energy Programs	14,595,025	14,595,025	19,055,658	4,460,633	30.6%
National Nuclear Security Administration					
Federal Salaries and Expenses	443,200	443,200	496,400	53,200	12.0%
Weapons Activities	15,345,000	15,345,000	16,486,298	1,141,298	7.4%
Defense Nuclear Nonproliferation	2,260,000	2,260,000	2,346,257	86,257	3.8%
Naval Reactors	1,684,000	1,684,000	2,081,445	397,445	23.6%
National Nuclear Security Administration	19,732,200	19,732,200	21,410,400	1,678,200	8.5%
Environmental and Other Defense Activities					
Defense Environmental Cleanup	6,426,000	6,426,000	6,914,532	488,532	7.6%
Defense UED&D Fund (2)	-	-	-	-	N/A
Other Defense Activities	920,000	920,000	978,351	58,351	6.3%
Subtotal, Environmental and Other Defense Activities	7,346,000	7,346,000	7,892,883	546,883	7.4%
Nuclear Energy (050)	149,800	149,800	156,600	6,800	4.5%
Subtotal, Atomic Energy Defense Activities	27,228,000	27,228,000	29,459,883	2,231,883	8.2%
Power Marketing Administrations					
Southeastern Power Administration (SEPA)	-	-	-	-	N/A
Southwestern Power Administration (SWPA)	10,400	10,400	10,608	208	2.0%
Western Area Power Administration	89,372	89,372	98,732	9,360	10.5%
Falcon and Amistad Operating and Maintenance Fund	228	228	228	0	0.0%
Colorado River Basins Marketing Fund	-21,400	-21,400	-8,568	12,832	-60.0%
Subtotal, Power Marketing Administrations	78,600	78,600	101,000	22,400	28.5%
Subtotal, Department of Energy	41,901,625	41,901,625	48,616,541	6,714,916	16.0%
Federal Energy Regulatory Commission	-	-	-	-	N/A
Receipts and Offsets					
Excess Fees and Recoveries, FERC	-9,000	-9,000	-9,000	-	0.0%
Title XVII Loan Guar. Prog Section 1703 Negative Credit Subsidy Receipts	-	-	-7,000	-7,000	N/A
UED&D Fund Discretionary Payments	-	-	-417,000	-417,000	N/A
Receipts and offsets	-9,000	-9,000	-433,000	-424,000	4711.1%
Department of Energy	41,892,625	41,892,625	48,183,541	6,290,916	15.0%

DEPARTMENT OF ENERGY
 Appropriation Summary
 (dollars in thousands)

Department of Energy	FY 2021 Enacted	FY 2022 Annualized CR	FY2023 Request	FY 2023 vs. FY 21 Enacted	
				\$	%
DOE Budget Function					
<i>NNSA Defense (050) Total</i>	19,732,200	19,732,200	21,410,400	1,678,200	8.5%
<i>Non-NNSA Defense Total</i>	7,495,800	7,495,800	8,049,483	553,683	7.4%
<i>Defense (050)</i>	27,228,000	27,228,000	29,459,883	2,231,883	8.2%
<i>Science (250)</i>	7,026,000	7,026,000	7,799,211	773,211	11.0%
<i>Energy (270)</i>	7,638,625	7,638,625	10,924,447	3,285,822	43.0%
<i>Non-Defense (Non-050)</i>	14,664,625	14,664,625	18,723,658	4,059,033	27.7%

(1) The FY 2021 and FY 2022 Continuing Resolution entries for Title 17 and ATVM do not reflect rescissions of prior year emergency balances enacted in Public Law 116-260. Including the rescissions, the final amounts for Title 17 and ATVM would be -\$363 million and -\$1,903 million, respectively.

(2) In the FY 2023 Request, Defense Uranium Decontamination and Decommissioning is requested within the Defense Environmental Cleanup Appropriation.

**Environmental Management
Proposed Appropriations Language**

**Defense Environmental Cleanup
(Including Transfer of Funds)**

For Department of Energy expenses, including the purchase, construction, and acquisition of plant and capital equipment and other expenses necessary for atomic energy defense environmental cleanup activities in carrying out the purposes of the Department of Energy Organization Act (42 U.S.C. 7101 et seq.), including the acquisition or condemnation of any real property or any facility or for plant or facility acquisition, construction, or expansion, \$6,914,532,000, to remain available until expended, of which \$417,000,000 shall be transferred to the "Uranium Enrichment Decontamination and Decommissioning Fund": Provided, That of such amount, \$317,002,000 shall be available until September 30, 2024, for program direction.

Note.--A full-year 2022 appropriation for this account was not enacted at the time the Budget was prepared; therefore, the Budget assumes this account is operating under the Continuing Appropriations Act, 2022 (Division A of Public Law 117-43, as amended). The amounts included for 2022 reflect the annualized level provided by the continuing resolution.

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, and the purchase of one zero emission passenger motor vehicle, \$323,249,000, to remain available until expended: Provided, That, in addition, fees collected pursuant to subsection (b)(1) of section 6939f of title 42, United States Code, and deposited under this heading in fiscal year 2023 pursuant to section 309 of title III of division C of Public Law 116-94 are appropriated, to remain available until expended, for mercury storage costs: Provided further, That of the amount appropriated under this heading, \$123,438,000 shall be derived from the United States Enrichment Corporation Fund, to remain available until expended.

Note.--A full-year 2022 appropriation for this account was not enacted at the time the Budget was prepared; therefore, the Budget assumes this account is operating under the Continuing Appropriations Act, 2022 (Division A of Public Law 117-43, as amended). The amounts included for 2022 reflect the annualized level provided by the continuing resolution.

Uranium Enrichment Decontamination and Decommissioning Fund

For Department of Energy expenses necessary in carrying out uranium enrichment facility decontamination and decommissioning, remedial actions, and other activities of title II of the Atomic Energy Act of 1954, and title X, subtitle A, of the Energy Policy Act of 1992, \$822,421,000, to be derived from the Uranium Enrichment Decontamination and Decommissioning Fund, to remain available until expended, of which \$24,400,000 shall be available in accordance with title X, subtitle A, of the Energy Policy Act of 1992.

Note.--A full-year 2022 appropriation for this account was not enacted at the time the Budget was prepared; therefore, the Budget assumes this account is operating under the Continuing Appropriations Act, 2022 (Division A of Public Law 117-43, as amended). The amounts included for 2022 reflect the annualized level provided by the continuing resolution.

Explanation of Changes

The proposed Non-Defense Environmental Cleanup appropriations include a proviso for a portion of the funding to be derived from the United States Enrichment Corporation (USEC) Fund consistent with Public Law 105-204. These funds would be used for the disposition of depleted uranium hexafluoride produced by USEC prior to privatization pursuant to

Public Law 105-204, which requires the Secretary of Energy to submit to Congress a plan to ensure that all amounts accrued on the books of USEC for the disposition of depleted uranium hexafluoride will be used to treat and recycle depleted uranium hexafluoride. The reserved amount of the USEC Fund will be used to finance operation of facilities to treat and recycle depleted uranium hexafluoride at the Portsmouth (Ohio) and Paducah (Kentucky) plants.

**Environmental Management
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	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request
Defense Environmental Cleanup	6,426,000	6,426,000	6,914,532
Non-Defense Environmental Cleanup	322,200	322,200	326,249
Uranium Enrichment Decontamination and Decommissioning Fund	841,000	841,000	822,421
Subtotal, Environmental Management	7,589,200	7,589,200	8,063,202
Mercury Storage Receipts	-3,000	-3,000	-3,000
D&D Fund Offset	0	0	-417,000
Total, Environmental Management	7,586,200	7,586,200	7,643,202

Overview

The Office of Environmental Management (EM) has been tasked with addressing the significant environmental liability that resulted from six decades of nuclear weapons production activities and government-sponsored nuclear energy research that played a critical role in domestic security and prosperity. The EM program was established in 1989 and is responsible for the cleanup of millions of gallons of radioactive waste; the safe management and disposition of thousands of tons of spent nuclear fuel and nuclear material; disposition of large volumes of transuranic waste and mixed low-level waste; remediation of huge quantities of contaminated soil and groundwater; and deactivation and decommissioning of thousands of excess facilities.

As the EM program performs its mission, it will transition to zero-emissions operations to the extent feasible at the Waste Isolation Pilot Plant; support environmental justice at Los Alamos National Lab and other sites; invest in Historically Black Colleges and Universities and other Minority Serving Institutions; expand consultation with Tribal Nations; and sustain union jobs. There is a union presence at every EM major site with one or more union affiliates representing EM’s contractor workforce. EM’s contracts exemplify DOE’s commitment to continue supporting a highly skilled, diverse workforce that provides more than 27,000 jobs that pay prevailing wages in safe and healthy workplaces complex wide. EM contracts ensure workers have the right to organize, join a union, and bargain collectively with their employers.

To advance cleanup, EM will utilize science-based approaches; apply 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 safer, more efficient, and more cost-effective.

EM Progress

EM is responsible for addressing the environmental legacy of decades of nuclear weapons production activities and government-sponsored nuclear energy research. One of the largest environmental remediation efforts in the world, the program is intended to help and protect the local communities across the country that played a vital role in helping the United States win World War II and the Cold War. EM’s work provides environmental benefits and risk reduction to these communities.

In 2021, EM leveraged the results of years of successful work to launch a new era for the Department of Energy’s (DOE) cleanup mission, all while continuing to navigate and manage the challenging conditions of the COVID-19 pandemic. To tackle one of the Department’s largest environmental and financial responsibilities — radioactive tank waste — EM began ramping up treatment at the Savannah River Site while continuing to make steady progress on preparing necessary facilities at the Hanford Site and the Idaho Cleanup Project for eventual operation.

At Oak Ridge, workers transitioned from the historic accomplishment of bringing down the former uranium enrichment buildings at the East Tennessee Technology Park to focus on facility decommissioning and demolition work at the Y-12

National Security Complex and Oak Ridge National Laboratory, successfully demolishing the former Biology Complex at Y-12. At the Portsmouth site, a new era of cleanup began when after of years of preparation, workers began tearing down the first of the three massive uranium enrichment process buildings there. And at the Energy Technology Engineering Center, the next phase of cleanup is ready to begin after EM safely demolished all DOE-owned buildings at the site.

EM continued to institute its end-state contracting approach, featuring work grouped into specific task orders for greater clarity with shorter time frames and more accurate cost and schedules, across the complex with the award of new contracts at Idaho, Oak Ridge and Savannah River. EM also awarded a new deactivation and decommissioning services contract to help launch a new era of cleanup at sites managed by the National Nuclear Security Administration's Office of Naval Reactors.

The world-class Savannah River National Laboratory began a new era in its important mission to support EM and DOE when it completed the transition to a stand-alone management-and-operations contract. This transition will strengthen the lab's ability to support cleanup not just at Savannah River, but across EM, as well as to support wider Departmental goals and to position the laboratory for a vibrant future and expanded mission going forward. The laboratory is also playing a substantive role for EM in advancing Equity. In addition to administering a growing Minority Serving Institutions Partnership Program for EM that will foster education and job-related skills for the next generation workforce, EM's Management and Operations contract for the Laboratory marks the first time that a Historically Black College or University has officially participated as part of the laboratory system's management structure.

As EM established this new era of cleanup, it took steps to ensure a diverse and inclusive workforce is ready and able to serve going forward. EM's Minority Serving Institutions Partnership Program addresses DOE-EM's need for building and maintaining a well-trained, technically skilled and diverse workforce by promoting the education and development of the next generation workforce in critical science, engineering, technology and math disciplines. Established in 2014, the Minority Institutions Partnership Program consisted of four components: (1) Internships, (2) Competitive Research Awards, (3) Post-Doctoral Research Program, and (4) Savannah River Environmental Sciences Field Station. In March 2022, through additional funding, the Minority Institutions Partnership Program expanded to include three more components: (5) Technology, Curriculum, and Professional Development Program, (6) Graduate Fellowship Program, and (7) EM/Minority Serving Institutions Shared Interest Research Partnership.

Highlights of EM's FY 2021 significant accomplishments include:

- Completed demolition of the High Flux Beam Reactor exhaust stack at the Brookhaven National Laboratory in New York. Following stack demolition, EM focused on waste shipments and site remediation. With verification that cleanup goals had been met, EM reduced its remaining active cleanup sites to 15 in March 2022.
- Completed construction and startup testing of all Waste Treatment and Immobilization Plant facilities needed for the Direct Feed Low Activity Waste strategy at the Hanford Site in Washington State to start immobilizing tank waste in glass using vitrification.
- Completed building and testing the Tank-Side Cesium Removal system at the Hanford Site that started treating tank waste in 2022 to build up a supply to feed directly to a vitrification facility in 2023 — an EM 2021 priority.
- Made significant progress at the Idaho Accelerated Retrieval Project IX facility, leaving just 0.12 acres of buried transuranic waste left to remediate. In FY 2022, EM completed the retrieval of buried waste from 5.69 acres at the Radioactive Waste Management Complex, meeting a 2022 priority. The exhumations were completed more than 18 months ahead of schedule. Completion of the project helps protect the Snake River Plain Aquifer and maintains a commitment to the State of Idaho.
- Certified and completed 30 legacy transuranic waste shipments from the Los Alamos National Laboratory to the Waste Isolation Pilot Plant in New Mexico — an EM 2021 priority.
- Completed the Nevada National Security Site Area 5 Radioactive Waste Management Complex infrastructure expansion project to allow for future construction of low-level waste disposal cells.
- Processed and disposed the low-dose portion of Oak Ridge's uranium-233 inventory and provided medical isotopes for next-generation cancer research.
- Initiated demolition activities on the X-326 Process Building at the Portsmouth Site in southern Ohio and demolished 40 percent of the building — the first of three massive structures being demolished — an EM 2021 priority.

- Opened the Portsmouth On-Site Waste Disposal Facility and moved the first demolition debris generated from deactivation and decommissioning at the site into the facility.
- Completed construction eight months ahead of schedule and \$32 million under budget for Saltstone Disposal Unit (SDU) 7, the second mega-sized SDU built at the Savannah River Site in South Carolina to permanently dispose of decontaminated saltstone — an EM 2021 priority.
- Opened the Critical Infrastructure, Industrial Control System Cybersecurity Laboratory at the Georgia Cyber Center in downtown Augusta, Georgia, establishing the South Carolina-based Savannah River National Laboratory’s physical presence in Georgia.
- Received more than 200 transuranic waste shipments at the Waste Isolation Pilot Plant. More than 13,000 shipments have been received since the facility opened in 1999.
- Continued preparation for the Main Plant Process Building demolition at the West Valley Demonstration Project in New York by installing a new water collection and treatment system, and by repurposing an administrative trailer complex into a multipurpose building to support demolition activities.

Going forward, EM’s relationships with all of those who have a stake in the Department’s cleanup activities, including Congress, state and local officials and regulators, Tribal Nations and the communities most directly impacted, will remain vital. Even as the COVID-19 pandemic continued, EM maintained a robust outreach and engagement schedule this year to ensure that a diverse range of voices were heard, and that cleanup decisions and activities occurred in a collaborative manner. EM is committed to the approach that those most impacted by the mission continue to have a strong voice and a seat at the table as the cleanup program develops priorities outlined in the Strategic Vision, moves toward more key completions, and tackles some of the biggest remaining challenges.

The achievements of 2021 demonstrate the level of success possible when collaboration is prioritized and a commitment to safe, risk-informed, and results-focused cleanup is shared by the Department and its partners. EM’s accomplishments this year put the cleanup program on a strong footing to advance into this new era to achieve lasting and substantial progress.

Strategic Initiatives

In 2022, EM worked to implement a more corporate approach to managing its cleanup efforts. This included the development of a new strategy-focused function at EM headquarters to ensure a unified and integrated approach to strategically timed engagement and communication to create the right environment for successful mission execution, as well as the issuance of the EM Strategic Vision, covering the period of CY 2022-2032. This vision, intended to be updated on an annual basis, serves as a roadmap that helps lay out how various components of cleanup currently fit together; and prompts conversations and engagement on the future of the EM program.

Given that the vast majority of EM’s work is performed by private industry, EM continuously looks to further strengthen and enhance its acquisition and contracting capabilities. EM has launched the development of an acquisition corps through the EM Consolidated Business Center to help build a cadre of trained personnel to serve on acquisition integrated project teams and source evaluation boards to ensure greater efficiency and consistency in conducting major procurements. EM has also taken steps to ensure more strategic alignment in contractor incentives and greater consistency in evaluation of contractor performance through the establishment of a Performance and Fee Review Board, made up of senior EM headquarters and field leadership.

EM is also continuing to move forward with its “end-state” contracting approach, which is discussed in more detail below. The idea is to convert most of EM’s existing “cost plus award fee” contracts to cost plus incentive contracts focused on end-states as they are re-competed over the next several years. The concept is to replicate the significant achievements made with cost plus incentive fee contracts used for closure sites beginning in the 1990s, including Rocky Flats, Fernald, and Mound. The faster EM can achieve cleanup, the sooner EM can eliminate the significant costs associated with maintaining infrastructure at our sites. In the fall of 2020, EM began transition for the first end-state contract awarded, for cleanup of

Hanford's Central Plateau. EM is currently implementing end-state contracts at several sites, including Hanford, Savannah River, Oak Ridge, Moab, Nevada, and Idaho.

To build on our recent contract successes, EM will be assessing all of our contracts to identify best practices and share them across the complex.

End-State Contracting

Approximately 95 percent of EM's annual budget is utilized through contracting with an array of industry partners. EM will continue to be a demanding client, expecting that contractors will perform in a safe, efficient, and cost-effective manner and with the highest ethical standards. Over the coming decade, EM will continue to develop and improve acquisition tools, processes, and resources to increase consistency and efficiency in competing and awarding contracts. This includes new templates, approaches, and policies to greatly improve efficiency in executing competitive acquisitions.

This contracting push will result in the wider use of EM's updated End State Contracting Model, which encompasses a two-step indefinite delivery/indefinite quantity contracting process. The End State Contracting Model provides the ability to group work under a contract into specific task orders to allow better clarity and shorter time horizons, as well as provide more accurate cost and schedule targets.

As many as two new end-state contracts could be awarded in 2022.

Highlights and Major Changes in the FY 2023 Budget Request

In FY 2023, EM will work to maintain and build upon the momentum generated through recent cleanup successes.

The FY 2023 investment of \$7,643,202,000 in discretionary budget authority, will fund activities to maintain a safe and secure posture in the EM complex, while maximizing cleanup activities. To that end, we will engage with our federal and state regulators regarding compliance requirements and achieving cleanup progress. EM is ready to effectively and efficiently utilize the resources the request provides to make significant progress.

In FY 2023, continued progress will be made on the treatment of radioactive waste in tanks across the complex-one of EM's largest environmental and financial challenges. At the Savannah River Site, the Liquid Waste Program will achieve additional risk reduction by stabilization and immobilization of high activity radionuclides through vitrification into canisters at the Defense Waste Processing Facility and disposition of low-level waste in Saltstone Disposal Units. The Salt Waste Processing Facility will process a total of 6 million gallons of tank waste through the Salt Waste Processing Facility; implement Next-Generation Solvent in the Salt Waste Processing Facility to further increase waste processing rates; produce up to 220 canisters of vitrified high-level waste in the Defense Waste Processing Facility; and continue operation of Tank Closure Cesium Removal Unit #1 in Tank 9 to meet commitments in South Carolina Department of Health and Environmental Control's Dispute Resolution Agreement.

The Office of River Protection FY 2023 budget request supports continued progress toward important cleanup required by the Amended Consent Decree and Tri-Party Agreement. The budget request is focused on work to begin hot commissioning and ramp up the capability of the Direct Feed Low Activity Waste program. It also includes funding for the High-Level Waste Facility to advance engineering and design, initiate long-lead procurement to support design, and planning for construction. This request also supports safe operations including a robust Tank Integrity Program of the tank farms to protect workers, the public, and the environment; meet regulatory commitments; and enable the development and maintenance of infrastructure necessary to enable waste treatment operations.

Also at the Hanford site, Richland's FY 2023 request is designed to maintain safe operations; perform Hanford site-wide services; support Direct Feed Low-Activity Waste startup and commissioning; and conduct critical site infrastructure projects. The budget request also supports progress in modifications to the Waste Encapsulation and Storage Facility for transfer of the cesium-strontium capsules to dry storage by August 2025, continued groundwater treatment progress, completion of the 105-KE Reactor interim safe storage, and completion of 105KW Fuel Storage Basin.

At the Idaho site, the FY 2023 request continues progress in characterizing, packaging and shipping stored contact-handled and remote-handled transuranic waste. The request also continues processing, characterizing, packaging and shipping mixed low-level radioactive waste and remote-handled mixed low-level radioactive waste to off-site disposal facilities. The funding request completes treatment of contact handled sludge waste. Continuation of deactivation and decommissioning activities at the Radioactive Waste Management Complex as part of Resource Conservation & Recovery Act closure activities and begin dismantlement and demolition. The request also continues work toward the capping of the Subsurface Disposal Area.

Also at the Idaho site, the request continues hot operation of the Integrated Waste Treatment Unit to begin treating the sodium-bearing tank waste. The Idaho Cleanup Project completed a 50-day simulant run in FY 2019. Final plant modifications are underway in preparation for radiological operations in FY 2022. The request supports the beginning of construction for the Idaho Comprehensive Environmental Response, Compensation, and Liability Act Disposal Facility expansion. The request also supports spent nuclear fuel activities such as continued progress to meet the Idaho Settlement Agreement milestone of moving all spent nuclear fuel out of wet storage by 2023. This includes, transferring the final fuel type out of Chemical Processing Plant Building-666 and continue design and engineering work for an interim spent fuel storage project. Additionally, the request supports progress toward Critical Decision 1 for the Calcine Disposition Project. The Calcine Disposition Project manages calcined high-level waste stored at the Idaho Nuclear Technology and Engineering Center and prepares it for final disposition.

At Oak Ridge, the FY 2023 budget request supports the transition to a greater focus on the cleanup of high-risk excess facilities at Oak Ridge National Laboratory and Y-12 National Security Complex, following successful D&D activities at the East Tennessee Technology Park. The request also supports operating the waste treatment and disposal facilities, including an on-site Comprehensive Environmental Response, Compensation, and Liability Act disposal facility and sanitary landfills adjacent to the Y-12 National Security Complex, and wastewater and gaseous waste treatment operations at Oak Ridge National Laboratory; continuing down-blending of uranium-233 material at Oak Ridge National Laboratory; remediating building slabs, soil, and groundwater at the East Tennessee Technology Park; continuing processing and shipping transuranic debris waste to the Waste Isolation Pilot Plant; designing and constructing a second On-Site Waste Disposal Facility, to support cleanup at the Y-12 National Security Complex and Oak Ridge National Laboratory; and developing mercury-related technology to support characterization, remediation, monitoring, and modeling of mercury contamination.

The Waste Isolation Pilot Plant's FY 2023 budget request supports disposal facility operations, regulatory and environmental compliance actions, the Central Characterization Project to perform transuranic waste characterization/certification activities to maintain progress toward transuranic waste removal milestones from generator sites, transuranic waste transportation capabilities, continued progress on repairing or replacing Waste Isolation Pilot Plant infrastructure, modernizing underground equipment to zero-emission battery-electric vehicles and new Safety Significant Confinement Ventilation System (15-D-411) and Utility Shaft (15-D-412).

At the Los Alamos National Laboratory, the FY 2023 budget request will complete the Southern External Boundary Consent Order Campaign, investigating and closing 60 soil related Solid Waste Management Units (SWMUs) and Areas of Concern and continue investigation under the Pajarito Watershed Campaign addressing 167 Solid Waste Management Units/Areas of Concern; continue the Chromium Plume Control Interim Measure to control migration of a hexavalent chromium groundwater plume beneath Mortandad and Sandia canyons; drill and install 4 groundwater monitoring wells required by the New Mexico Environment Department under the Chromium Interim Measure & Characterization and the Royal Demolition Explosives Characterization Campaigns (two groundwater contamination plumes); continue retrieval and size reduction of the below-grade transuranic waste (Corrugated Metal Pipes); operate and expand remediation lines to repackage waste that does not meet the Waste Isolation Pilot Plant Waste Acceptance Criteria; complete all preparations at Waste Control Specialists in Texas to move DOE transuranic waste from the below grade storage location to an above grade

facility; and initiate Decontamination and Demolition of Deactivated National Nuclear Security Administration excess high-risk facilities (Ion Beam Facility).

At Portsmouth, the FY 2023 budget request will support the continued construction of the second On-Site Waste Disposal Facility project (20-U-401); complete demolition of the X-326 process building, continue to disposition debris in the cells of the first On-Site Waste Disposal Facility project and continue soil excavation for engineered fill for the On-Site Waste Disposal Facility; initiate disposition of X-333 process building equipment into the first On-Site Waste Disposal Facility and initiate pre-demolition of the X-333 process building; initiate deactivation of the X-330 process building; and continue operation of the Depleted Uranium Hexafluoride Conversion Facility, continue plant safety and reliability modifications, and initiate infrastructure to support disposition of oxide and empty/heel cylinders.

At Paducah, the FY 2023 budget request will complete construction of a bundle crushing area, and initiate segmentation of C-333 process building converters that is critical path for completing deactivation of the C-333 process building; continue C-400 complex decision document development and continue the disposition of R-114 refrigerant (Freon) offsite to reduce the overall site risk; complete the Southwest Plume SWMU 211-A groundwater remediation; and continue operation of the Depleted Uranium Hexafluoride Conversion Facility, continue plant safety and reliability modifications, and initiate infrastructure to support disposition of oxide and empty/heel cylinders.

At West Valley, the FY 2023 budget request continues to support the ongoing demolition of the Main Plant Process Building. This commercial spent nuclear fuel reprocessing building is the highest hazard facility remaining on the site. The request will also support replacement of the 60-year-old Guardhouse with a new, modern Guardhouse, designed to meet the needs for the current and future work at the West Valley site.

At Moab, the FY 2023 budget request focuses resources to create a path for the earliest possible completion at the site. The FY 2023 request level will enable the Project to ship approximately 1.2 million tons of uranium mill tailings over 12 months.

At the Lawrence Livermore National Laboratory, additional resources will be invested for demolition and characterization work to support planning efforts for decommissioning and demolition work on National Nuclear Security Administration-owned high-risk contaminated excess facilities. The request will commence Building 175 slab and soil characterization; commence demolition of Building 280; and commence demolition of Building 251 to slab.

EM's FY 2023 Budget Request also provides a significant focus on Cybersecurity activities. Headquarters' Cybersecurity provides services such as Site Test and Evaluations, Information Security Continuous Monitoring, Incident Response, Penetration Testing, and enterprise license purchasing through the Mission Innovation Protection Program. Cybersecurity activities, including the Mission Innovation Protection Program, will be funded out of the EM Safeguards and Security. For sites without a safeguards and security program, other site funding will be utilized. EM's Cybersecurity program will continue to:

- Implement and comply with the most current DOE Cybersecurity requirements.
- Maintain site Cybersecurity incident response capabilities.
- Upgrade and retire legacy information technology systems.
- Identify and secure high value assets.
- Remediate critical and high vulnerabilities that affect DOE information systems.
- Implement continuous diagnostic and mitigation implementation.
- Provide employee Cybersecurity awareness and privilege user training.
- Implement and sustain multifactor authentication for all standard and privilege users that access DOE information systems.

In accordance with the Executive Order 13985 on “Advancing Racial Equity and Support for Underserved Communities Through the Federal Government”, the EM budget request will make investments and advancements in equity to address the concerns of Black, Latino, and Indigenous and Native American persons, Asian Americans and Pacific Islanders and other persons of color; members of religious minorities; lesbian, gay, bisexual, transgender, and queer (LGBTQ+) persons; persons with disabilities; persons who live in rural areas; and persons otherwise adversely affected by persistent poverty or inequality.

EM, as part of DOE as a whole, has embarked on a range of efforts focused on identifying barriers for underserved communities to access DOE programs, benefits, services, or procurement opportunities, all areas that further the whole-of-Government approach to advance equity.

Across the complex EM is supporting a comprehensive evaluation of the whole of our activities, including deep assessments in Procurement, Financial Assistance, Research and Development (R&D), Demonstration and Deployment, and Stakeholder Engagement.

DOE’s Equity Action Plan puts a spotlight on equity and justice which are at the heart of the agency’s mission. The Department’s priority actions to advance equity include:

- Increase opportunities for new entrants in DOE acquisition.
- Increase participation by individuals and institutions underrepresented in DOE R&D and other programs supported through financial assistance.
- Expand strategic Tribal and stakeholder engagement in all DOE business areas.

Working Capital Fund

In FY 2023, EM’s share of the Working Capital Fund is estimated at \$31,147,000 which is split funded between Program Direction (through Headquarters Working Capital Fund Other Related Expenses line of account) and EM’s environmental cleanup program activities.

EM’s FY 2022 Program Direction Working Capital Fund estimate is \$11,869,000.

EM’s remaining FY 2023 Working Capital Fund request is \$19,278,000. EM will fund activities within the Working Capital Fund such as A-123/Internal Controls, Building Occupancy, Copy Services, Corporate Business Systems (STARS, iBudget, iPortal/IDW, Digital Media, Oak Ridge Financial Services Center, and STRIPES), Corporate Training Services, Financial Statement Audits, Health Services, Interagency Transfers, Mail and Transportation, Overseas Presence, Pension Studies, Project Management Career Development Program, Printing and Graphics, Procurement Management, Supply and Telecommunications. These activities will be assessed to EM cleanup activities.

The table below provides a complete breakout of the Working Capital Fund Business Lines and how the activities are funded between Program Direction and EM cleanup activities.

FY 2023 Working Capital Fund Estimate

	Program Direction	EM Cleanup	Total
A123	0	338	338
Building Occupancy	8,298	0	8,298
Copy Services	0	198	198
Corporate Business Systems	204	8,315	8,519
Corp Training Services	252	0	252
Financial Statement Audits	0	2,455	2,455
Health Services	123	0	123

Program Direction	EM Cleanup	Total
Interagency Transfers	0	1,746
Mail & Transportation	0	187
Overseas Presence	330	0
Pension Studies	0	147
PMCDP	0	730
Print & graphics	0	209
Procurement Management	0	4,953
Supply	236	0
Telecom	2,426	0
Total	11,869	19,278

Future Years Energy Program (FYEP)

(\$K)

	FY 2023 Request	FY 2024	FY 2025	FY 2026	FY 2027
Defense Environmental Cleanup	6,915	7,074	7,236	7,403	7,574
Non-Defense Environmental Cleanup	323	331	338	346	354
Uranium Enrichment Decontamination and Decommissioning Fund	822	841	860	880	901
Subtotal, Environmental Management	8,060	8,426	8,434	8,629	8,829
D&D Fund Offset	-417	-427	-436	-446	-457
Total, Environmental Management	7,643	7,819	7,998	8,183	8,372

Outyear Priorities and Assumptions

In the FY 2012 Consolidated Appropriations Act (P.L. 112-74), Congress directed the Department to include a future-years energy program (FYEP) in subsequent requests that reflects the proposed appropriations for five years. This FYEP shows outyear funding for each account for FY 2024 - FY 2027. The outyear funding levels use the growth rates in outyear account totals published in the FY 2023 President’s Budget for both the 050 and non-050 accounts. Actual future budget request levels will be determined as part of the annual budget process.

Environmental Management priorities in the outyears include the following:

- Hanford will treat radioactive tank waste and will complete planned demolition activities along the Columbia River (with final reactor disposition/end state to be determined).
- Savannah River Site will empty and close 22 of the 51 underground waste tanks.
- Oak Ridge will complete construction of the Mercury Treatment Facility and complete disposal of remaining legacy transuranic waste and uranium-233.
- Idaho National Laboratory will complete treatment of the remaining liquid sodium-bearing waste and complete targeted buried waste exhumation. Idaho will also complete shipments of legacy transuranic waste to the Waste Isolation Pilot Plant.

- The safety-significant confinement ventilation system and other key upgrades will be installed at the Waste Isolation Pilot Plant.
- Significant demolition activity will be completed at Portsmouth and the West Valley Demonstration Project.
- EM will continue investments for underrepresented communities near EM sites to increase engagement and opportunities with the expansion of the Minority Serving Institutions Partnership Program consortium that invests in the workforce today and into the future.

**Environmental Management
Funding by Congressional Control (\$K)**

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted	FY 2023 Request vs FY 2021 Enacted (%)
Defense Environmental Cleanup					
Closure Sites					
Closure Sites Administration	4,987	4,987	4,067	-920	-18%
Hanford Site					
Central Plateau Remediation	670,000	670,000	650,240	-19,760	-3%
Richland Community and Regulatory Support	8,621	8,621	10,013	+1,392	+16%
River Corridor and Other Cleanup Operations	232,479	232,479	135,000	-97,479	-42%
Construction					
18-D-404: Modification of Waste Encapsulation and Storage Facility, Richland, WA (PBS RL-0013C)	15,000	15,000	3,100	-11,900	-79%
22-D-401: 400 Area Fire Station, (RL-0201)	0	0	3,100	+3,100	+100%
22-D-402: 200 Area Water Treatment Facility, (RL-0201)	0	0	8,900	+8,900	+100%
23-D-404: 181D Export Water System Reconfiguration and Upgrade	0	0	6,770	+6,770	+100%
23-D-405: 181B Export Water System Reconfiguration and Upgrade	0	0	480	+480	+100%
Total, Construction	15,000	15,000	22,350	+7,350	+49%
Total, Hanford Site	926,100	926,100	817,603	-108,497	-12%
Idaho National Laboratory					
Idaho Cleanup and Waste Disposition	430,000	430,000	350,658	-79,342	-18%
Idaho Community and Regulatory Support	3,500	3,500	2,705	-795	-23%
Construction					
22-D-403: Idaho Spent Nuclear Fuel Staging Facility, ID (ID-0012B-D)	0	0	8,000	+8,000	+100%
22-D-404: Additional ICDF Landfill Disposal Cell and Evaporation Ponds Project (ID-0030B)	0	0	8,000	+8,000	+100%
23-D-402: Idaho Calcine Construction (ID-0012B-D)	0	0	10,000	+10,000	+100%
Total, Construction	0	0	26,000	+26,000	+100%
Total, Idaho National Laboratory	433,500	433,500	379,363	-54,137	-12%
NNSA Sites					
Lawrence Livermore National Laboratory	1,764	1,764	1,842	+78	+4%
LLNL Excess Facilities D&D	35,000	35,000	12,004	-22,996	-66%
Los Alamos Excess Facilities D&D	0	0	40,519	+40,519	+100%

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted	FY 2023 Request vs FY 2021 Enacted (%)
Los Alamos National Laboratory	226,000	226,000	286,316	+60,316	+27%
Nevada	60,737	60,737	62,652	+1,915	+3%
Sandia National Laboratories	4,860	4,860	4,003	-857	-18%
Separations Processing Research Unit	15,000	15,000	15,300	+300	+2%
Total, NNSA Sites	343,361	343,361	422,636	+79,275	+23%
Oak Ridge					
OR Cleanup and Disposition	112,471	112,471	62,000	-50,471	-45%
OR Nuclear Facility D&D	254,132	254,132	334,221	+80,089	+32%
OR Reservation Community and Regulatory Support	5,900	5,900	5,300	-600	-10%
OR Technology Development and Deployment	5,000	5,000	3,000	-2,000	-40%
U233 Disposition Program	55,000	55,000	47,628	-7,372	-13%
Construction					
14-D-403: Outfall 200 Mercury Treatment Facility, OR (OR-0041)	20,500	20,500	0	-20,500	-100%
17-D-401: On-Site Disposal Facility	22,380	22,380	35,000	+12,620	+56%
Total, Construction	42,880	42,880	35,000	-7,880	-18%
Total, Oak Ridge	475,383	475,383	487,149	+11,766	+2%
Office of River Protection					
Tank Farm Activities	784,000	784,000	801,100	+17,100	+2%
Waste Treatment and Immobilization Plant	50,000	50,000	462,700	+412,700	+825%
Construction					
01-D-16D: High Level Waste Facility	25,000	25,000	316,200	+291,200	+1165%
01-D-16E: Pretreatment Facility	0	0	20,000	+20,000	+100%
18-D-16: Waste Treatment and Immobilization Plant LBL/Direct Feed					
LAW	786,000	786,000	0	-786,000	-100%
23-D-403: Hanford 200 West Area Tank Farms Risk Management					
Project (ORP-0014)	0	0	4,408	+4,408	+100%
Total, Construction	811,000	811,000	340,608	-470,392	-58%
Total, Office of River Protection	1,645,000	1,645,000	1,604,408	-40,592	-2%
Savannah River Site					
Radioactive Liquid Tank Waste Stabilization and Disposition	910,832	910,832	851,660	-59,172	-7%
Savannah River Legacy Pensions	0	0	132,294	+132,294	+100%
Savannah River National Laboratory	0	0	41,000	+41,000	+100%
Savannah River Risk Management Operations	500,000	500,000	416,317	-83,683	-17%
SR Community and Regulatory Support	11,549	11,549	12,137	+588	+5%
Construction					

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted	FY 2023 Request vs FY 2021 Enacted (%)
17-D-402: Saltstone Disposal Unit #7, SR (SR-0014C)	10,716	10,716	0	-10,716	-100%
18-D-402: Emergency Operations Center	6,500	6,500	25,568	+19,068	+293%
18-D-402: Saltstone Disposal Unit #8/9, SR (SR-0014C)	65,500	65,500	49,832	-15,668	-24%
19-D-701: SR Security System Replacement	1,000	1,000	5,000	+4,000	+400%
20-D-401: Saltstone Disposal Unit 10 11 12	562	562	37,668	+37,106	+6602%
20-D-402: Advanced Manufacturing Collaborative Facility (AMC)	25,000	25,000	0	-25,000	-100%
Total, Construction	109,278	109,278	118,068	+8,790	+8%
Total, Savannah River Site	1,531,659	1,531,659	1,571,476	+39,817	+3%
Program Support					
Mission Support	12,979	12,979	103,239	+90,260	+695%
Program Direction	289,000	289,000	317,002	+28,002	+10%
Safeguards and Security	320,771	320,771	309,573	-11,198	-3%
Technology Development and Deployment					
Mission Support	30,000	30,000	25,000	-5,000	-17%
Waste Isolation Pilot Plant					
Waste Isolation Pilot Plant Construction	313,260	313,260	371,943	+58,683	+19%
15-D-411: Safety Significant Confinement Ventilation System, WIPP	35,000	35,000	59,073	+24,073	+69%
15-D-412: Utility Shaft	55,000	55,000	25,000	-30,000	-55%
21-D-401: Hoisting Capability Project	10,000	10,000	0	-10,000	-100%
Total, Construction	100,000	100,000	84,073	-15,927	-16%
Total, Waste Isolation Pilot Plant	413,260	413,260	456,016	+42,756	+10%
Contribution to the Uranium Enrichment D&D Fund	0	0	417,000	+417,000	+100%
Total, Defense Environmental Cleanup	6,426,000	6,426,000	6,914,532	+488,532	+8%
Non-Defense Environmental Cleanup					
Mercury Storage Receipts	3,000	3,000	3,000	+0	+0%
Management and Storage of Elemental Mercury	2,100	2,100	2,100	+0	+0%
Fast Flux Test Reactor Facility D&D	2,500	2,500	3,200	+700	+28%
Gaseous Diffusion Plants					
Paducah Gaseous Diffusion Plant	57,580	57,580	63,421	+5,841	+10%
Portsmouth Gaseous Diffusion Plant	57,974	57,974	60,017	+2,043	+4%
Total, Gaseous Diffusion Plants	115,554	115,554	123,438	+7,884	+7%
Small Sites					
Energy Technology Engineering Center	12,000	12,000	26,409	+14,409	+120%

**Environmental Management/
Overview**

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted	FY 2023 Request vs FY 2021 Enacted (%)
Idaho National Laboratory	11,000	11,000	11,220	+220	+2%
Lawrence Berkeley National Laboratory	30,100	30,100	0	-30,100	-100%
Moab	47,833	47,833	67,000	+19,167	+40%
Other Sites	10,000	10,000	0	-10,000	-100%
Total, Small Sites	110,933	110,933	104,629	-6,304	-6%
West Valley Demonstration Project	88,113	88,113	89,882	+1,769	+2%
Total, Non-Defense Environmental Cleanup	322,200	322,200	326,249	+4,049	+1%
Uranium Enrichment Decontamination and Decommissioning Fund					
U/Th Reimbursements					
Mission Support	5,000	5,000	24,400	+19,400	+388%
Oak Ridge	134,701	134,701	92,946	-41,755	-31%
Paducah	240,000	240,000	199,269	-40,731	-17%
Portsmouth					
Portsmouth Gaseous Diffusion Plant Construction	367,193	367,193	432,354	+65,161	+18%
15-U-408: On-Site Waste Disposal Facility, Portsmouth (PO-0040)	46,639	46,639	0	-46,639	-100%
20-U-401: On Site Waste Disposal Facility (Cell Line 2&3)	16,500	16,500	48,040	+31,540	+191%
Total, Construction	63,139	63,139	48,040	-15,099	-24%
Total, Portsmouth	430,332	430,332	480,394	+50,062	+12%
Pension and Community and Regulatory Support					
Oak Ridge	25,000	25,000	20,000	-5,000	-20%
Paducah Gaseous Diffusion Plant	2,099	2,099	2,782	+683	+33%
Portsmouth Gaseous Diffusion Plant	3,868	3,868	2,630	-1,238	-32%
Total, Pension and Community and Regulatory Support	30,967	30,967	25,412	-5,555	-18%
Total, Uranium Enrichment Decontamination and Decommissioning Fund	841,000	841,000	822,421	-18,579	-2%
Total, Environmental Management	7,589,200	7,589,200	8,063,202	+474,002	+6%
Mercury Storage Receipts	-3,000	-3,000	-3,000	+0	+0%
D&D Fund Offset	0	0	-417,000	-417,000	-100%
Total, Environmental Management	7,586,200	7,586,200	7,643,202	+57,002	+1%
Full Time Equivalents	1,275	1,275	1,375	+100	+8%

SBIR/STTR:

- FY 2021 Enacted Transfer: SBIR \$1,278; STTR \$0
- FY 2022 Annualized CR Transfer: SBIR \$1,278; STTR \$0
- FY 2023 Request: SBIR \$1,022; STTR \$0

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

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted	FY 2023 Request vs FY 2021 Enacted (%)
Carlsbad	420,066	420,066	462,822	+42,756	+10%
Idaho	444,500	444,500	390,583	-53,917	-12%
Oak Ridge	644,344	644,344	612,095	-32,249	-5%
Paducah	315,885	315,885	281,678	-34,207	-11%
Portsmouth	508,864	508,864	559,731	+50,867	+10%
Richland	1,024,900	1,024,900	917,103	-107,797	-11%
River Protection	1,645,000	1,645,000	1,604,408	-40,592	-2%
Savannah River	1,702,870	1,702,870	1,723,670	+20,800	+1%
Lawrence Livermore National Laboratory	36,764	36,764	13,846	-22,918	-62%
Los Alamos National Laboratory	226,000	226,000	331,835	+105,835	+47%
Nevada	60,737	60,737	62,652	+1,915	+3%
Sandia Site Office	4,860	4,860	4,003	-857	-18%
Separations Process Research Unit	15,000	15,000	15,300	+300	+2%
West Valley Demonstration Project	92,411	92,411	94,259	+1,848	+2%
Energy Technology Engineering Center	12,000	12,000	26,409	+14,409	+120%
Moab	47,833	47,833	67,000	+19,167	+40%
Other Sites					
Closure Sites Administration	4,987	4,987	4,067	-920	-18%
Lawrence Berkeley National Laboratory	30,100	30,100	0	-30,100	-100%
Other Sites	10,000	10,000	0	-10,000	-100%
Subtotal, Other Sites	45,087	45,087	4,067	-41,020	-91%
Program Direction	289,000	289,000	317,002	+28,002	+10%
D&D Fund Deposit	0	0	417,000	+417,000	+100%
Mission Support	53,079	53,079	157,739	+104,660	+197%
Subtotal, Environmental Management	7,589,200	7,589,200	8,063,202	+474,002	+6%
Mercury Storage Receipts	-3,000	-3,000	-3,000	+0	+0%
D&D Fund Offset	0	0	-417,000	-417,000	-100%
Total, Environmental Management	7,586,200	7,586,200	7,643,202	+57,002	+1%

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

Pursuant to Section 3121 of the Ike Skelton National Defense Authorization Act for FY 2011 (P.L. 111-383), notification is being provided for general plant projects with a total estimated cost of more than \$5 million planned for execution in FY 2022 and FY 2023.

Total	Prior Years	FY 2021 Enacted	FY 2021 Actuals	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted
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Capital Operating Expenses Summary (including (Major Items of Equipment (MIE))

Capital Equipment > \$500K (including MIE)	0	0	0	0	0	0	0
Minor Construction (GPP and IGPP) (<\$25M)	255,885	55,616	54,143	42,860	54,161	91,025	+36,882
Total, Capital Operating Expenses	255,885	55,616	54,143	42,860	54,161	91,025	+36,882

Minor Construction (GPP and IGPP) (Total Estimated Cost (TEC) <\$25M)

<u>Carlsbad (Direct Funded)</u>							
Fire Water Loop Phase 3 (Spurs to facilities)	5,094	836	2,129	68	2,129	0	-2,129
Underground Salt Pocket Design	5,000	0	2,500	11	2,500	0	-2,500
Safety Significant Fire Suppression System (Waste Handling Building – 411 Fire System)	4,460	0	2,130	3	2,130	200	-1,930
Contact Handled (CH) and Remote Handled (RH) Confinement Ventilation System HVAC Replacement	5,760	0	0	0	0	5,760	+5,760
Electrical Substation #2 Replacement Fabrication	1,080	0	0	0	0	1,080	+1,080
Electrical Substation #4 Replacement Fabrication	1,080	0	0	0	0	1,080	+1,080
Electrical Substation #6 Replacement Fabrication	1,080	0	0	0	0	1,080	+1,080
Replace Property Protection Area Fence	1,560	0	0	0	0	1,560	+1,560
Replace and Upgrade Security Vehicle Trap	300	0	0	0	0	300	+300
Data Management System for Real-Time Surface & Underground Monitoring	1,440	0	0	0	0	1,440	+1,440
Motor Control Center Replacements	1,500	0	0	0	0	1,500	+1,500
Design and Install Automatic Center of Gravity Lift Fixture	2,400	0	0	0	0	2,400	+2,400

	Total	Prior Years	FY 2021 Enacted	FY 2021 Actuals	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted
TRUPACT Maintenance Facility HVAC Replacement	600	0	0	0	0	600	+600
Extend the Underground Compressed Air System to the West	200	0	0	0	0	200	+200
Total, Carlsbad	31,554	836	6,759	82	6,759	17,200	+10,441
<u>Idaho (Direct Funded)</u>							
Shipping Capability for RH TRU Waste using Shielded Container Assemblies	1,026	0	0	0	0	1,026	+1,026
NRC Licensed SNF Storage	4,500	0	2,250	836	2,250	0	-2,250
Total, Idaho	5,526	0	2,250	836	2,250	1,026	-1,224
<u>Oak Ridge (Direct Funded)</u>							
Bailey DCS System Upgrade	16,607	5,127	5,740	7,236	5,740	0	-5,740
Building 3608 Above Ground Pipe Replacement	8,803	1,500	0	389	0	7,303	+7,303
Total, Oak Ridge	25,410	6,627	5,740	7,625	5,740	7,303	+1,563
<u>Paducah (Direct Funded)</u>							
Large Item Neutron Assay System	1,047	349	349	4,043	349	0	-349
ProForce Training/Track/Shoothouse	2,982	0	561	541	561	1,860	+1,299
ProForce Facility	2,472	0	0	55	0	2,472	+2,472
Modular Classified Records Storage	2,000	0	1,000	0	1,000	0	-1,000
Total, Paducah	8,501	349	1,910	4,639	1,910	4,332	+2,422
<u>Portsmouth (Direct Funded)</u>							
Electrical Supply and Distribution Gaseous Diffusion Plant	7,636	1,334	560	407	578	5,164	+4,586
Total, Portsmouth	7,636	1,334	560	407	578	5,164	+4,586
<u>Richland (Direct Funded)</u>							
L-707, Advanced Electrical Metering ^a	2,483	59	1,212	96	1,212	0	-1,212

	Total	Prior Years	FY 2021 Enacted	FY 2021 Actuals	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted
L-819, High Capacity Fiber Optic (300 Area Central Plateau) ^a	4,517	0	0	41	0	4,517	+4,517
L-850, Replace 200W 1.1M Gallon PW Tank (DFLAW Priority) ^a	8,130	1,720	1,323	2,183	1,323	3,764	+2,441
L-894, Raw Water Cross Connection Isolation 200E/W ^a	7,440	7,089	0	204	0	351	+351
L-895, Fire Protection Infrastructure for Plateau Raw Water ^a	18,145	8,945	2,769	2,847	2,769	3,662	+893
L-898, 100 Area Mission Critical Distribution Feeders Replacement ^a	13,258	3	547	10	547	12,161	+11,614
L-928, Reroute 12in Raw Water Line Near 241AP Farm ^a	7,710	0	0	0	0	7,710	+7,710
Total, Richland	61,683	17,813	5,851	5,381	5,851	32,165	+26,314

^a These capital investments represent expenditures that may be performed between FY 2022 and FY 2023 based on emerging risks.

River Protection (Direct Funded)

Construct New Maintenance Shop ^a	19,306	4,550	6,670	9,515	6,670	1,416	-5,254
ETF Acetonitrile Treatment Upgrade ^a	14,309	2,700	5,320	5,277	5,320	969	-4,351
ETF Load in Expansion ^a	15,188	3,729	4,160	2,646	4,160	3,139	-1,021
Ancillary Equipment Addition	1,040	1,040	0	0	0	0	0
222-S Office Space Addition ^a	9,754	500	4,480	562	4,480	294	-4,186
AP Farm Tanker Truck Loading and Off Loading Station ^a	2,936	2,500	218	57	218	0	-218
Modular Grout System	8,450	0	4,225	1,646	4,225	0	-4,225
ETF Motor Control Center Upgrades	8,200	500	3,850	1,563	3,850	0	-3,850
ETF Brine Storage Tanks ^a	13,147	0	2,150	1,687	2,150	8,847	+6,697
Total, River Protection	92,330	15,519	31,073	22,953	31,073	14,665	-16,408

^a These capital investments represent expenditures that may be accelerated to FY 2022 based on emerging or identified risks.

Savannah River (Indirect Funded)

SRNL IGPPs ^a	17,895	11,895	0	0	0	6,000	+6,000
Y-755 Upgrade SRNL Stack Monitors, B, C, and Sand Filter Stacks	1,200	30	0	0	0	1,170	+1,170
Y-815 Delta V Control Room C-401 System Upgrade, 773-A	4,150	1,213	0	937	0	2,000	+2,000
Total, Savannah River	23,245	13,138	0	937	0	9,170	+9,170

Total	Prior Years	FY 2021 Enacted	FY 2021 Actuals	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted
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^a Projects and allocation of the IGPP request are preliminary. Final projects will reflect emerging or identified risks. When the scope of these project is definitized, Congressional notification will be provided as required.

Total, Minor Construction	255,885	55,616	54,143	42,860	54,161	91,025	+36,882
Total, Capital Summary including Capital Equipment	255,885	55,616	54,143	42,860	54,161	91,025	+36,882

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

Total	Prior Years	FY 2021 Enacted	FY 2021 Actuals	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted
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Waste Treatment and Immobilization Plant, Hanford WA

*18-D-16, Waste Treatment and Immobilization Plant
LBL/Direct Feed LAW*

Total Estimate Cost (TEC)	TBD	6,968,000	786,000	606,699	786,000	0	-786,000
Other Project Costs (OPC)	0	0	0	0	0		0
<i>01-D-16D, High-Level Waste Facility</i>							
Total Estimate Cost (TEC)	TBD	2,805,833	25,000	66,169	25,000	316,200	+291,200
Other Project Costs (OPC)	0	0	0	0	0		0
<i>01-D-16E Pretreatment Facility</i>							
Total Estimate Cost (TEC)	TBD	3,757,050	0	15,806	0	20,000	+20,000
Other Project Costs (OPC)	0	0	0	0	0		0
Total Estimate Cost (TEC)	TBD	13,530,883	811,000	688,674	811,000	336,200	-474,800
Other Project Costs (OPC)	0	0	0	0	0	0	0
Total Project Cost (TPC) 01-D-416	TBD	13,530,883	811,000	688,674	811,000	336,200	-474,800

**15-U-408, On Site Waste Disposal Facility – Initial
Infrastructure and Cell 1, 4 and 5 Liner Construction**

Total Estimate Cost (TEC)	268,058	180,471	44,763	45,276	44,763	0	-44,763
Other Project Costs (OPC)	16,616	10,803	1,876	1,950	1,876	0	-1,876
Total Project Cost (TPC) 15-U-408	284,674	191,274	46,639	47,226	46,639	0	-46,639

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

Total Estimate Cost (TEC)	TBD	266,016	35,000	68,699	35,000	50,300	+15,300
Other Project Costs (OPC)	TBD	14,200	0	2,773	0	8,700	+8,700
Total Project Cost (TPC) 15-D-411	TBD^a	280,216	35,000	71,472	35,000	59,000	+24,000

Total	Prior Years	FY 2021 Enacted	FY 2021 Actuals	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted
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^a A Baseline Change Proposal is under review.

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

Total Estimate Cost (TEC)	TBD	106,600	53,312	55,421	53,312	23,173	-30,139
Other Project Costs (OPC)	TBD	4,000	1,488	648	1,488	1,827	+339
Total Project Cost (TPC) 15-D-412	TBD^b	110,600	54,800	56,069	54,800	25,000	-29,800

^b A Baseline Change Proposal is under review.

17-D-401, On Site Disposal Facility (OR-0041)

Total Estimate Cost (TEC)	TBD	25,979	22,314	2,350	22,314	34,222	+11,908
Other Project Costs (OPC)	TBD	22,555	66	74	66	778	+712
Total Project Cost (TPC) 17-D-401	TBD	48,534	22,380	2,424	22,380	35,000	12,620

* Congress appropriated line item funds for TPC beginning in FY 2017.

18-D-401, Saltstone Disposal Unit #8 and #9, SR (SR-0014C)

Total Estimate Cost (TEC)	255,345	28,077	65,500	65,500	65,500	49,832	-15,668
Other Project Costs (OPC)	24,655	8,909	4,155	4,155	4,155	4,125	-30
Total Project Cost (TPC) 18-D-401	280,000	36,986	69,655	69,655	69,655	53,957	-15,698

18-D-402, Emergency Operations Center, SR (SR-0042)

Total Estimate Cost (TEC)	TBD	8,551	6,500	6,616	6,500	25,568	+19,068
Other Project Costs (OPC)	TBD	4,000	0	0	0	0	0
Total Project Cost (TPC) 18-D-402	TBD	12,551	6,500	6,616	6,500	25,568	+19,068

18-D-404, Modification of Waste Encapsulation and Storage Facility

Total Estimate Cost (TEC)	35,800	17,700	15,000	1,188	15,000	3,100	-11,900
Other Project Costs (OPC)	12,500	4,500	0	993	0	0	0

	Total	Prior Years	FY 2021 Enacted	FY 2021 Actuals	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted
Total Project Cost (TPC) 18-D-404	48,300	22,200	15,000	2,181	15,000	3,100	-11,900
19-D-701, SR Security Replacement System, SR (SR-0042)							
Total Estimate Cost (TEC)	TBD	14,525	1,000	5,405	1,000	5,000	+4,000
Other Project Costs (OPC)	TBD	0	0	0	0	0	0
Operating Expense Funded (OPEX)	TBD	15,000	0	0	0	0	0
Total Project Cost (TPC) 19-D-701	TBD	29,525	1,000	5,405	1,000	5,000	+4,000
20-U-401, On Site Waste Disposal Facility – Remaining Infrastructure and Cell 2, 3, and 6 Liner Construction							
Total Estimate Cost (TEC)	341,212	9,491	16,265	20,012	16,265	45,640	+29,375
Other Project Costs (OPC)	31,788	509	235	714	235	2,400	+2,165
Total Project Cost (TPC) 20-U-401	373,000	10,000	16,500	20,726	16,500	48,040	+31,540
20-D-401, Saltstone Disposal Unit #10, #11 and #12, SR (SR-0014C)							
Total Estimate Cost (TEC)	453,200	500	562	366	562	37,668	+37,106
Other Project Costs (OPC)	42,800	400	950	950	950	4,250	+3,300
Total Project Cost (TPC) 20-D-401	496,000	900	1,512	1,216	1,512	41,918	+40,406
21-D-401, Hoisting Capability Project							
Total Estimate Cost (TEC)	TBD	0	10,000	0	10,000	0	-10,000
Other Project Costs (OPC)	0	0	0	0	0	0	0
Total Project Cost (TPC) 21-D-401	TBD	0	10,000	0	10,000	0	-10,000
22-D-401, 400 Area Fire Station							
Total Estimate Cost (TEC)	19,400	300	2,400	111	2,400	2,800	+400
Other Project Costs (OPC)	3,100	1,500	0	2	0	300	+300

Total	Prior Years	FY 2021 Enacted	FY 2021 Actuals	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted
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Total Project Cost (TPC) 22-D-401^a	22,500	1,800	2,400	113	2,400	3,100	+700
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^a These projects became construction line items in FY 2022. Previously, they were Minor Construction Projects.

22-D-402, Central Plateau Water Treatment Facility

Total Estimate Cost (TEC)	35,900	2,900	3,700	7,029	3,700	6,500	+2,800
Other Project Costs (OPC)	4,100	450	50	2,959	50	2,400	+2,350
Total Project Cost (TPC) 22-D-402^a	40,000	3,350	3,750	9,988	3,750	8,900	+5,150

^a These projects became construction line items in FY 2022. Previously, they were Minor Construction Projects.

22-D-403 Idaho Spent Nuclear Fuel Staging Facility

Total Estimate Cost (TEC)	TBD	0	0	0	0	7,000	+7,000
Other Project Costs (OPC)	TBD	0	0	0	0	1,000	+1,000
Total Project Cost (TPC) 22-D-403	TBD	0	0	0	0	8,000	+8,000

22-D-404 Additional ICDF Landfill Disposal Cell and Evaporation Ponds Project

Total Estimate Cost (TEC)	TBD	0	0	0	0	5,000	+5,000
Other Project Costs (OPC)	TBD	0	0	0	0	3,000	+3,000
Total Project Cost (TPC) 22-D-404	TBD	0	0	0	0	8,000	+8,000

23-D-402 Calcine Construction

Total Estimate Cost (TEC)	TBD	0	0	0	0	0	0
Other Project Costs (OPC)	TBD	0	0	0	0	10,000	+10,000
Total Project Cost (TPC) 23-D-402	TBD	0	0	0	0	10,000	+10,000

23-D-403 200 West Area Tank Farms Risk Management Project

Total Estimated Cost (TEC)	TBD	0	0	0	0	3,908	+3,908
Other Project Cost (OPC)	TBD	0	0		0	500	-78
Total Project Cost (TPC) 23-D-403	TBD	0	0	0	0	4,408	+3,830

Total	Prior Years	FY 2021 Enacted	FY 2021 Actuals	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted
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23-D-404, 181D Export Water System Reconfiguration and Upgrade

Total Estimate Cost (TEC)	62,150	0	100	0	100	6,450	+6,350
Other Project Costs (OPC)	3,850	500	700	800	700	320	-380
Total Project Cost (TPC) 23-D-404	66,000	500	800	800	800	6,770	+5,970

23-D-405, 181B Export Water System Reconfiguration and Upgrade

Total Estimate Cost (TEC)	48,500	0	20	20	20	480	+460
Other Project Costs (OPC)	2,500	400	300	300	300	0	-300
Total Project Cost (TPC) 23-D-404	51,000	400	320	320	320	480	+160

Total All Construction Projects

Total Estimate Cost (TEC)^c	1,519,565	14,191,993	1,087,436	966,667	1,087,436	642,155	-445,281
Other Project Costs (OPC)^c	141,909	72,726	9,820	16,318	9,820	39,600	+29,780
Operating Expense Funded (OPEX)	TBD	15,000	0	0	0	0	0
Total Project Cost (TPC) All Construction Projects^d	1,661,474	14,294,719	1,097,256	982,985	1,097,256	681,755	-415,501

^c The TEC and OPC totals for this table exclude the OR datasheets (14-D-403 and 17-D-401) as Congress appropriated line item funds for TPC beginning in FY 2017.

^d The TPC for this table include all construction projects for the Environmental Management Program.

ANCILLARY TABLES

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

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted	FY 2023 Request vs FY 2021 Enacted (%)
Defense Environmental Cleanup					
Operating					
Carlsbad					
CB-0020	6,806	6,806	6,806	+0	+0%
CB-0090	16,608	16,608	45,238	+28,630	+172%
CB-0081	21,850	21,850	26,245	+4,395	+20%
CB-0080	262,802	262,802	279,210	+16,408	+6%
CB-0083	12,000	12,000	21,250	+9,250	+77%
Subtotal, Carlsbad	320,066	320,066	378,749	+58,683	+18%
D&D Fund Deposit					
HQ-DD-0100	0	0	417,000	+417,000	+100%
Idaho					
ID-0100	3,500	3,500	2,705	-795	-23%
ID-0013	181,186	181,186	107,576	-73,610	-41%
ID-0014B	181,500	181,500	117,150	-64,350	-35%
ID-0030B	37,921	37,921	39,248	+1,327	+4%
ID-0012B-D	29,393	29,393	37,245	+7,852	+27%
ID-0040	0	0	49,439	+49,439	+100%
Subtotal, Idaho	433,500	433,500	353,363	-80,137	-18%
Lawrence Livermore National Laboratory					
VL-LLNL-0031	1,339	1,339	1,442	+103	+8%
VL-FOO-0013B-D	425	425	400	-25	-6%
CBC-LLNL-0040	35,000	35,000	12,004	-22,996	-66%
Subtotal, Lawrence Livermore National Laboratory	36,764	36,764	13,846	-22,918	-62%
Los Alamos National Laboratory					
VL-FAO-0101	3,394	3,394	3,394	+0	+0%
VL-LANL-0030	121,027	121,027	166,666	+45,639	+38%
VL-LANL-0013	101,579	101,579	116,256	+14,677	+14%
CBC-LANL-0040	0	0	40,519	+40,519	+100%
VL-LANL-0020	0	0	5,000	+5,000	+100%
Subtotal, Los Alamos National Laboratory	226,000	226,000	331,835	+105,835	+47%
Mission Support					

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted	FY 2023 Request vs FY 2021 Enacted (%)
HQ-MS-0100	6,979	6,979	7,239	+260	+4%
HQ-TD-0100	30,000	30,000	25,000	-5,000	-17%
EM-HBCU-0100	6,000	6,000	56,000	+50,000	+833%
HQ-CCB-0100	0	0	40,000	+40,000	+100%
Subtotal, Mission Support Nevada	42,979	42,979	128,239	+85,260	+198%
VL-NV-0100	5,065	5,065	3,900	-1,165	-23%
VL-NV-0030	34,859	34,859	35,965	+1,106	+3%
VL-NV-0080	20,813	20,813	22,787	+1,974	+9%
Subtotal, Nevada Oak Ridge	60,737	60,737	62,652	+1,915	+3%
OR-0100	5,900	5,900	5,300	-600	-10%
OR-TD-0100	5,000	5,000	3,000	-2,000	-40%
OR-0013B	112,471	112,471	62,000	-50,471	-45%
OR-0041	135,732	135,732	141,718	+5,986	+4%
OR-0042	118,400	118,400	192,503	+74,103	+63%
OR-0020	9,260	9,260	12,000	+2,740	+30%
OR-0011D	55,000	55,000	47,628	-7,372	-13%
Subtotal, Oak Ridge Other Sites	441,763	441,763	464,149	+22,386	+5%
CBC-0100-FN	1,100	1,100	1,062	-38	-3%
CBC-0100-RF	1,800	1,800	553	-1,247	-69%
CBC-0100-EM	2,087	2,087	2,452	+365	+17%
Subtotal, Other Sites Paducah	4,987	4,987	4,067	-920	-18%
PA-0020	16,206	16,206	16,206	+0	+0%
Portsmouth					
PO-0020	16,690	16,690	16,690	+0	+0%
Program Direction					
HQ-PD-0100	277,133	277,133	305,133	+28,000	+10%
HQ-PDWCF-0100	11,867	11,867	11,869	+2	+0%
Subtotal, Program Direction Richland	289,000	289,000	317,002	+28,002	+10%
RL-0100	8,621	8,621	10,013	+1,392	+16%
RL-0013C	182,340	182,340	169,600	-12,740	-7%

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted	FY 2023 Request vs FY 2021 Enacted (%)
RL-0030	116,966	116,966	152,700	+35,734	+31%
RL-0011	17,359	17,359	0	-17,359	-100%
RL-0041	131,435	131,435	86,000	-45,435	-35%
RL-0040	101,044	101,044	49,000	-52,044	-52%
RL-0020	96,300	96,300	96,300	+0	+0%
RL-0201	353,335	353,335	327,940	-25,395	-7%
Subtotal, Richland River Protection	1,007,400	1,007,400	891,553	-115,847	-11%
ORP-0014	784,000	784,000	801,100	+17,100	+2%
ORP-0070	50,000	50,000	462,700	+412,700	+825%
Subtotal, River Protection	834,000	834,000	1,263,800	+429,800	+52%
Sandia Site Office					
VL-SN-0030	4,860	4,860	4,003	-857	-18%
Savannah River					
SR-0100	11,549	11,549	12,137	+588	+5%
SR-0101	0	0	132,294	+132,294	+100%
SR-0013	50,071	50,071	45,509	-4,562	-9%
SR-0011C	349,724	349,724	270,461	-79,263	-23%
SR-0014C	910,832	910,832	851,660	-59,172	-7%
SR-SRNL-0100	0	0	41,000	+41,000	+100%
SR-0030	56,412	56,412	60,455	+4,043	+7%
SR-0020	171,211	171,211	152,194	-19,017	-11%
SR-0041	27,264	27,264	21,463	-5,801	-21%
SR-0042	16,529	16,529	18,429	+1,900	+11%
Subtotal, Savannah River	1,593,592	1,593,592	1,605,602	+12,010	+1%
Separations Process Research Unit					
VL-SPRU-0040	15,000	15,000	15,300	+300	+2%
West Valley Demonstration Project					
OH-WV-0020	4,298	4,298	4,377	+79	+2%
Subtotal, Operating Line Item Construction	5,347,842	5,347,842	6,288,433	+940,591	+18%
Carlsbad					
CB-0080	100,000	100,000	84,073	-15,927	-16%
Idaho					
ID-0014B	0	0	10,000	+10,000	+100%

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted	FY 2023 Request vs FY 2021 Enacted (%)
ID-0030B	0	0	8,000	+8,000	+100%
ID-0012B-D	0	0	8,000	+8,000	+100%
Subtotal, Idaho	0	0	26,000	+26,000	+100%
Oak Ridge					
OR-0041	42,880	42,880	35,000	-7,880	-18%
Richland					
RL-0013C	15,000	15,000	3,100	-11,900	-79%
RL-0201	0	0	19,250	+19,250	+100%
Subtotal, Richland	15,000	15,000	22,350	+7,350	+49%
River Protection					
ORP-0014	0	0	4,408	+4,408	+100%
ORP-0060	811,000	811,000	336,200	-474,800	-59%
Subtotal, River Protection	811,000	811,000	340,608	-470,392	-58%
Savannah River					
SR-0014C	76,778	76,778	87,500	+10,722	+14%
SR-0042	32,500	32,500	30,568	-1,932	-6%
Subtotal, Savannah River	109,278	109,278	118,068	+8,790	+8%
Subtotal, Line Item Construction	1,078,158	1,078,158	626,099	-452,059	-42%
Subtotal, Environmental Management Non-Defense Environmental Cleanup	6,426,000	6,426,000	6,914,532	+488,532	+8%
Operating					
Energy Technology Engineering Center					
CBC-ETEC-0040	12,000	12,000	26,409	+14,409	+120%
Idaho					
ID-0012B-N	11,000	11,000	11,220	+220	+2%
Mission Support					
HQ-MSF	3,000	3,000	3,000	+0	+0%
HQ-MSF-0100	2,100	2,100	2,100	+0	+0%
Subtotal, Mission Support	5,100	5,100	5,100	+0	+0%
Moab					
CBC-MOAB-0031	47,833	47,833	67,000	+19,167	+40%
Other Sites					
CBC-LBNL-0040	30,100	30,100	0	-30,100	-100%
CBC-0040-EF	10,000	10,000	0	-10,000	-100%
Subtotal, Other Sites	40,100	40,100	0	-40,100	-100%

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted	FY 2023 Request vs FY 2021 Enacted (%)
Paducah					
PA-0011	778	778	0	-778	-100%
PA-0011X	56,802	56,802	63,421	+6,619	+12%
Subtotal, Paducah	57,580	57,580	63,421	+5,841	+10%
Portsmouth					
PO-0011X	57,974	57,974	60,017	+2,043	+4%
Richland					
RL-0042	2,500	2,500	3,200	+700	+28%
West Valley Demonstration Project					
OH-WV-0040	79,003	79,003	66,335	-12,668	-16%
OH-WV-0013	9,110	9,110	23,547	+14,437	+158%
Subtotal, West Valley Demonstration Project	88,113	88,113	89,882	+1,769	+2%
Subtotal, Operating	322,200	322,200	326,249	+4,049	+1%
Uranium Enrichment Decontamination and Decommissioning Fund					
Operating					
Mission Support					
HQ-UR-0100	5,000	5,000	24,400	+19,400	+388%
Oak Ridge					
OR-0102	25,000	25,000	20,000	-5,000	-20%
OR-0040	134,701	134,701	92,946	-41,755	-31%
Subtotal, Oak Ridge	159,701	159,701	112,946	-46,755	-29%
Paducah					
PA-0103	2,099	2,099	2,782	+683	+33%
PA-0040	240,000	240,000	199,269	-40,731	-17%
Subtotal, Paducah	242,099	242,099	202,051	-40,048	-17%
Portsmouth					
PO-0104	3,368	3,368	2,500	-868	-26%
PO-0040	367,193	367,193	432,354	+65,161	+18%
PO-0103	500	500	130	-370	-74%
Subtotal, Portsmouth	371,061	371,061	434,984	+63,923	+17%
Subtotal, Operating	777,861	777,861	774,381	-3,480	+0%
Line Item Construction					
Portsmouth					
PO-0040	63,139	63,139	48,040	-15,099	-24%
Subtotal, Environmental Management	841,000	841,000	822,421	-18,579	-2%

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted	FY 2023 Request vs FY 2021 Enacted (%)
Subtotal, Environmental Cleanup	7,589,200	7,589,200	8,063,202	+474,002	+6%
Mercury Storage Receipts	-3,000	-3,000	-3,000	+0	+0%
D&D Fund Offset	0	0	-417,000	-417,000	-100%
Total, Environmental Cleanup	7,586,200	7,586,200	7,643,202	+57,002	+1%

Summary

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted	FY 2023 Request vs FY 2021 Enacted (%)
Defense Environmental Cleanup					
Operating	5,347,842	5,347,842	6,288,433	+940,591	+18%
Line Item Construction	1,078,158	1,078,158	626,099	-452,059	-42%
Subtotal, Defense Environmental Cleanup	6,426,000	6,426,000	6,914,532	+488,532	+8%
Defense EM Funded UE D&D Fund Contribution					
Operating	0	0	0	+0	+0%
Line Item Construction	0	0	0	+0	+0%
Non-Defense Environmental Cleanup					
Operating	322,200	322,200	326,249	+4,049	+1%
Line Item Construction	0	0	0	+0	+0%
Subtotal, Non-Defense Environmental Cleanup	322,200	322,200	326,249	+4,049	+1%
Uranium Enrichment Decontamination and Decommissioning Fund					
Operating	777,861	777,861	774,381	-3,480	+0%
Line Item Construction	63,139	63,139	48,040	-15,099	-24%
Subtotal, Uranium Enrichment Decontamination and Decommissioning Fund	841,000	841,000	822,421	-18,579	-2%
Decontamination and Decommissioning Fund Contribution					
Operating	0	0	0	+0	+0%
Line Item Construction	0	0	0	+0	+0%
Defense Uranium Enrichment Decontamination and Decommissioning					
Operating	0	0	0	+0	+0%
Line Item Construction	0	0	0	+0	+0%
Subtotal, Environmental Cleanup	7,589,200	7,589,200	8,063,202	+474,002	+6%

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted	FY 2023 Request vs FY 2021 Enacted (%)
Offsets	-3,000	-3,000	-420,000	-417,000	+13900%
Total, Environmental Cleanup	7,586,200	7,586,200	7,643,202	+57,002	+1%
Total Operating	6,447,903	6,447,903	7,389,063	+941,160	+15%
Total Line Item Construction	1,141,297	1,141,297	674,139	-467,158	-41%
Subtotal, Environmental Management	7,589,200	7,589,200	8,063,202	+474,002	+6%
Offsets	-3,000	-3,000	-420,000	-417,000	+13900%
Total, Environmental Management	7,586,200	7,586,200	7,643,202	+57,002	+1%

Environmental Management Federal Staffing

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted	FY 2023 Request vs FY 2021 Enacted (%)
Carlsbad	59	59	62	+3	+5%
Idaho	47	47	48	+1	+2%
Oak Ridge	68	68	81	+13	+19%
Portsmouth/Paducah Project Office	52	52	53	+1	+2%
Richland	230	230	239	+9	+4%
River Protection	117	117	130	+13	+11%
Savannah River	235	235	259	+24	+10%
Small Sites	22	22	24	+2	+9%
Nevada Site Office	13	13	15	+2	+15%
Los Alamos Site Office	35	35	39	+4	+11%
Subtotal, Field, Full-Time Equivalents	878	878	950	+72	+8%
Headquarters Operations	254	254	273	+19	+7%
Consolidated Business Center	143	143	152	+9	+6%
Total, Field, Full-Time Equivalents	1,275	1,275	1,375	+100	+8%

Environmental Management Project Schedule Range 50% to 80% Confidence Level (Single date indicates both 50% and 80% Confidence Levels are the same)	
Site	Completion Date
Energy Technology Engineering Center	2045
Separations Process Research Unit	2025
Lawrence Livermore National Laboratory	2031
Sandia National Laboratory	2031
Nevada Nuclear Security Site	2030
Moab	2029-2033
Waste Isolation Pilot Plant	2050
Los Alamos National Laboratory	2036
West Valley Demonstration Project	2043
Idaho National Laboratory	2049-2060
Portsmouth Gaseous Diffusion Plant	2039 – 2043
Oak Ridge	2047
Paducah Gaseous Diffusion Plant	2065 - 2070
Savannah River Site	2065
Hanford Site	2078-2091

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

Site	LCC Total Range	
Argonne National Laboratory-East	187	-
Ashtabula	138	-
Brookhaven National Laboratory	490	-
Columbus	172	-
D&D Fund Deposit	3,343	-
Energy Technology Engineering Center	717	-
Fernald	3,220	-
Hanford Site	125,660	- 134,653
Headquarters	2,620	- 2,667
Idaho National Laboratory	19,945	- 23,178
Inhalation Toxicology Laboratory	13	-
Kansas City Plant	30	-
Laboratory for Energy-Related Health Research	41	-
Lawrence Berkeley National Laboratory	133	-
Lawrence Livermore National Laboratory	675	- 720
Los Alamos National Laboratory	9,814	- 10,880
Miamisburg	671	-
Moab	1,112	- 1,121
Nevada National Security Site	2,341	- 2,465
Oak Ridge	25,454	- 25,595
Office of River Protection	236,377	- 421,100
Other	1,192	-
Paducah Gaseous Diffusion Plant	39,807	- 46,748
Pantex Plant	206	-
Portsmouth Gaseous Diffusion Plant	17,892	- 19,880
Program Direction	27,994	- 28,825
Rocky Flats Environmental Technology Site	6,573	-
Sandia National Laboratory	297	- 299
Savannah River Site	101,974	- 126,839
Separation Process Research Unit	342	-
Stanford Linear Accelerator Center	70	-
Technology Development and Deployment	3,481	- 3,544
Waste Isolation Pilot Plant	16,234	- 17,833
West Valley Demonstration Project	3,163	- 3,321
	-	-
Total EM Program	652,376	- 887,205

Environmental Management
Lifecycle Cost by Project Baseline Summary (PBS) (\$M)

PBS Name	Prior Cost	Lifecycle Cost Remaining (FY 2022 to FY 2091)		Lifecycle Total	
	(97-2021)	Low Range	High Range	Low Range	High Range
ACTIVE SITES					
Carlsbad					
CB-0020:					
	90	239	276	329	366
CB-0083:					
	54	410	473	464	527
CB-0100:					
	11	0	0	11	11
CB-0900:					
	7	0	0	7	7
CB-0080:					
	4,241	8,292	9,568	12,533	13,809
CB-0081:					
	489	584	674	1,072	1,162
CB-0082:					
	97	0	0	97	97
CB-0090:					
	570	862	994	1,431	1,564
CB-0101:					
	289	0	0	289	289
TOTAL	5,848	10,386	11,985	16,234	17,833
Idaho					
HQ-SNF-0012X:					
	60	0	0	60	60
HQ-SNF-0012X-ID:					
	19	0	0	19	19
HQ-SNF-0012Y:					
	67	0	0	67	67
ID-0011:					
	19	0	0	19	19
ID-0012B:					
	670	2,480	3,377	3,150	4,048
ID-0012B-N:					
	116	159	192	276	308
ID-0012C:					
	0	0	0	0	0
ID-0012C-N:					
	20	0	0	20	20
ID-0013B:					
	4,688	1,116	1,279	5,803	5,966
ID-0013B.NEW:					
	115	0	0	115	115
ID-0014B:					
	3,283	3,288	5,324	6,570	8,607
ID-0014B-T:					

PBS Name	Prior Cost	Lifecycle Cost Remaining (FY 2022 to FY 2091)		Lifecycle Total	
	(97-2021)	Low Range	High Range	Low Range	High Range
	71	0	0	71	71
ID-0014C:					
	0	0	0	0	0
ID-0030B:					
	1,743	641	688	2,385	2,431
ID-0030C:					
	0	0	0	0	0
ID-0040-EF:					
	3	0	0	3	3
ID-0040B:					
	698	0	0	698	698
ID-0040B.NEW:					
	91	0	0	91	91
ID-0040C:					
	0	0	0	0	0
ID-0050B:					
	123	0	0	123	123
ID-0050C:					
	0	0	0	0	0
ID-0100:					
	102	62	119	164	221
ID-0900:					
	310	0	0	310	310
TOTAL	12,198	7,747	10,979	19,945	23,178
Oak Ridge					
HQ-SW-0013X:					
	92	0	0	92	92
HQ-SW-0013X-OR:					
	144	0	0	144	144
HQ-SW-0013Y:					
	208	0	0	208	208
OR-0011D:					
	495	334	344	829	839
OR-0011Y:					
	52	0	0	52	52
OR-0011Z:					
	164	0	0	164	164
OR-0013A:					
	465	0	0	465	465
OR-0013B:					
	1,995	917	921	2,912	2,916
OR-0020:					
	366	338	341	704	707
OR-0030:					
	351	0	0	351	351
OR-0031:					
	60	0	0	60	60
OR-0040:					

PBS Name	Prior Cost	Lifecycle Cost Remaining (FY 2022 to FY 2091)		Lifecycle Total	
	(97-2021)	Low Range	High Range	Low Range	High Range
	4,381	351	372	4,732	4,753
OR-0041:					
	1,051	3,231	3,283	4,282	4,334
OR-0041-IFDP:					
	113	1,924	1,924	2,036	2,036
OR-0041.NEW:					
	157	0	0	157	157
OR-0042:					
	1,287	1,767	1,818	3,053	3,105
OR-0042-IFDP:					
	102	2,701	2,701	2,803	2,803
OR-0042.NEW:					
	58	0	0	58	58
OR-0043:					
	87	0	0	87	87
OR-0044-EF:					
	125	0	0	125	125
OR Excess Facilities D&D:					
	0	0	0	0	0
OR-0100:					
	161	151	151	311	311
OR-0101:					
	105	0	0	105	105
OR-0102:					
	366	636	636	1,002	1,002
OR-0103:					
	44	0	0	44	44
OR-0104:					
	21	0	0	21	21
OR-0900-D:					
	17	0	0	17	17
OR-0900-N:					
	619	0	0	619	619
OR-TD-0100:					
	18	0	0	18	18
OR-TDD-0100:					
	2	0	0	2	2
TOTAL	13,105	12,349	12,490	25,454	25,595
Paducah					
PA-0011:					
	59	6	6	65	65
PA-0011X:					
	999	7,283	8,173	8,283	9,172
PA-0013:					
	285	0	0	285	285
PA-0020:					
	181	1,126	1,168	1,308	1,350
PA-0040:					

PBS Name	Prior Cost	Lifecycle Cost Remaining (FY 2022 to FY 2091)		Lifecycle Total	
	(97-2021)	Low Range	High Range	Low Range	High Range
	2,946	26,641	32,645	29,587	35,590
PA-0100:					
	11	0	0	11	11
PA-0101:					
	-2	0	0	-2	-2
PA-0102:					
	42	0	0	42	42
PA-0103:					
	47	182	188	228	235
TOTAL	4,568	35,239	42,180	39,807	46,748
Portsmouth					
PO-0011:					
	107	0	0	107	107
PO-0011X:					
	984	2,990	3,080	3,974	4,064
PO-0013:					
	445	0	0	445	445
PO-0020:					
	278	364	520	642	798
PO-0040:					
	4,113	8,097	9,830	12,209	13,942
PO-0041:					
	69	0	0	69	69
PO-0101:					
	366	0	0	366	366
PO-0103:					
	14	6	8	21	22
PO-0104:					
	18	41	49	59	68
TOTAL	6,394	11,498	13,486	17,892	19,880
Richland					
HQ-SNF-0012X-RL:					
	3	0	0	3	3
RL-0011:					
	3,020	0	0	3,020	3,020
RL-0012:					
	3,088	0	0	3,088	3,088
RL-0013B:					
	1	0	0	1	1
RL-0013C:					
	3,895	20,343	21,234	24,238	25,129
RL-0020:					
	1,403	15,029	16,723	16,432	18,126
RL-0030:					
	2,888	11,678	12,338	14,566	15,226
RL-0040:					
	2,429	19,158	22,083	21,586	24,511

PBS Name	Prior Cost	Lifecycle Cost Remaining (FY 2022 to FY 2091)		Lifecycle Total	
	(97-2021)	Low Range	High Range	Low Range	High Range
RL-0041:					
	5,225	1,821	1,993	7,046	7,218
RL-0042:					
	336	885	1,051	1,221	1,387
RL-0043:					
	7	0	0	7	7
RL-0044:					
	2	0	0	2	2
RL-0080:					
	71	0	0	71	71
RL-0100:					
	393	1,091	1,177	1,484	1,570
RL-0201:					
	1,342	31,421	33,819	32,763	35,161
RL-0900:					
	133	0	0	133	133
TOTAL	24,235	101,425	110,418	125,660	134,653
River Protection					
HQ-HLW-0014X-RV:					
	0	0	0	0	0
ORP-0014:					
	11,978	193,982	377,439	205,959	389,416
ORP-0014A:					
	0	0	0	0	0
ORP-0014-T:					
	0	0	0	0	0
ORP-0060:					
	13,658	16,269	17,534	29,927	31,192
ORP-0061:					
	433	0	0	433	433
ORP-0070:					
	56	0	0	56	56
ORP-0100:					
	1	0	0	1	1
ORP-TD-0100:					
	0	0	0	0	0
ORP-TDD-0014:					
	0	0	0	0	0
TOTAL	26,126	210,250	394,973	236,377	421,100
Savannah River					
SR-0100:					
	301	1,014	1,260	1,315	1,561
SR-0101:					
	165	0	0	165	165
SR-0900:					
	198	0	0	198	198
HQ-HLW-0014X-SR:					

PBS Name	Prior Cost	Lifecycle Cost Remaining (FY 2022 to FY 2091)		Lifecycle Total	
	(97-2021)	Low Range	High Range	Low Range	High Range
	0	0	0	0	0
HQ-SNF-0012X-SR:					
	68	0	0	68	68
SR-0011A:					
	134	0	0	134	134
SR-0011B:					
	3,672	0	0	3,672	3,672
SR-0011C:					
	4,928	11,980	13,259	16,908	18,188
SR-0012:					
	680	0	0	680	680
SR-0013:					
	2,254	8,630	10,458	10,884	12,712
SR-0014B:					
	0	0	0	0	0
SR-0014C:					
	16,021	20,327	34,768	36,347	50,789
SR-0014C-T:					
	138	0	0	138	138
SR-0020:					
	2,997	9,285	11,651	12,282	14,648
SR-0030:					
	2,518	12,994	16,472	15,512	18,990
SR-0040:					
	494	0	0	494	494
SR-0040B:					
	1	0	0	1	1
SR-0041:					
	78	192	241	270	319
SR-0042:					
	62	2,844	4,022	2,906	4,084
TOTAL	34,708	67,266	92,131	101,974	126,839
Lawrence Livermore					
CBC-LLNL-0040:					
	17	93	125	110	143
HQ-SW-0013Y:					
	158	0	0	158	158
TOTAL	175	93	125	268	301
California Site Support					
VL-FOO-0013B-D:					
	16	4	4	20	20
TOTAL	16	4	4	20	20
Lawrence Livermore					
VL-LLNL-0013:					
	72	0	0	72	72
VL-LLNL-0030:					

PBS Name	Prior Cost	Lifecycle Cost Remaining (FY 2022 to FY 2091)		Lifecycle Total	
	(97-2021)	Low Range	High Range	Low Range	High Range
	136	0	0	136	136
VL-LLNL-0031:					
	150	49	61	199	211
TOTAL	358	49	61	407	419
Los Alamos					
VL-FAO-0101:					
	118	136	136	254	254
VL-LANL-0013:					
	1,535	2,083	2,561	3,618	4,096
VL-LANL-0030:					
	2,317	3,552	4,140	5,868	6,456
VL-LANL-0040-D:					
	53	0	0	53	53
VL-LANL-0040-N:					
	22	0	0	22	22
TOTAL	4,044	5,770	6,836	9,814	10,880
Nevada					
NV-0030:					
	88	0	0	88	88
VL-NV-0013:					
	108	0	0	108	108
VL-NV-0030:					
	1,276	203	269	1,480	1,545
VL-NV-0080:					
	291	238	285	529	576
VL-NV-0100:					
	91	45	57	137	148
TOTAL	1,855	487	610	2,341	2,465
Sandia					
VL-SN-0030:					
	271	27	29	297	299
TOTAL	271	27	29	297	299
Separations Process Research Unit					
VL-SPRU-0040:					
	252	91	91	342	342
TOTAL	252	91	91	342	342
West Valley					
OH-WV-0012:					
	32	0	0	32	32
OH-WV-0013:					
	425	-251	-222	174	203
OH-WV-0014:					
	0	0	0	0	0
OH-WV-0020:					

PBS Name	Prior Cost	Lifecycle Cost Remaining (FY 2022 to FY 2091)		Lifecycle Total	
	(97-2021)	Low Range	High Range	Low Range	High Range
	50	91	93	141	143
OH-WV-0040:					
	1,224	1,591	1,719	2,815	2,942
OH-WV-0100:					
	0	0	0	0	0
TOTAL	1,730	1,432	1,591	3,163	3,321
Energy Technology Engineering Center					
CBC-ETEC-0040:					
	374	341	341	715	715
VL-ETEC-0040:					
	2	0	0	2	2
TOTAL	376	341	341	717	717
Moab					
CBC-MOAB-0031:					
	703	409	417	1,112	1,121
TOTAL	703	409	417	1,112	1,121
Other Sites					
CBC-0040-EF:					
	8	0	0	8	8
CBC-0100-EM:					
	4	29	29	33	33
CBC-0100-FN:					
	69	0	0	69	69
CBC-0100-MD:					
	2	0	0	2	2
CBC-0100-RF:					
	42	3	3	45	45
CBC-ND-0100:					
	11	0	0	11	11
CBC-UM-0100:					
	0	0	0	0	0
OH-FN-0100:					
	0	12	12	12	12
TOTAL	136	43	43	180	180
Mission Support					
HQ-CDP-0100-N:					
	0	0	0	0	0
HQ-MS-0100:					
	887	1,153	1,199	2,040	2,086
HQ-MSF:					
	2	0	0	2	2
HQ-OPS-0900:					
	0	0	0	0	0
HQ-SS-0020:					
	0	0	0	0	0

PBS Name	Prior Cost	Lifecycle Cost Remaining (FY 2022 to FY 2091)		Lifecycle Total	
	(97-2021)	Low Range	High Range	Low Range	High Range
HQ-UR-0100:					
	506	67	67	573	573
HQ-TD-0100:					
	1,890	1,591	1,655	3,481	3,544
EM-HBCU-0100:					
	5	0	0	5	5
TOTAL	3,290	2,811	2,921	6,101	6,211
Program Direction					
HQ-PD-0100:					
	7,210	20,784	21,615	27,994	28,825
TOTAL	7,210	20,784	21,615	27,994	28,825
Lawrence Berkeley					
CBC-LBNL-0030:					
	35	0	0	35	35
CBC-LBNL-0040:					
	97	0	0	97	97
VL-LBNL-0030:					
	2	0	0	2	2
TOTAL	133	0	0	133	133
D&D Fund Deposit					
HQ-DD-0100:					
	3,343	0	0	3,343	3,343
TOTAL	3,343	0	0	3,343	3,343
COMPLETED SITES					
Argonne					
CH-ANLW-0030:					
	8	0	0	8	8
CH-ANLE-0030:					
	30	0	0	30	30
CH-ANLE-0040:					
	70	0	0	70	70
CH-ANLE-0040.NEW:					
	79	0	0	79	79
TOTAL	187	0	0	187	187
Ashtabula					
OH-AB-0030:					
	138	0	0	138	138
TOTAL	138	0	0	138	138
Brookhaven					
BRNL-0030:					
	262	0	0	262	262
BRNL-0040:					
	137	0	0	137	137

PBS Name	Prior Cost	Lifecycle Cost Remaining (FY 2022 to FY 2091)		Lifecycle Total	
	(97-2021)	Low Range	High Range	Low Range	High Range
BRNL-0041:					
	80	4	4	84	84
BRNL-0041.NEW:					
	3	0	0	3	3
BRNL-0100:					
	3	0	0	3	3
TOTAL	486	4	4	490	490
California Site Support					
VL-FOO-0100-D:					
	6	0	0	6	6
CBC-CA-0013B-N:					
	6	0	0	6	6
CBC-CA-0100-N:					
	3	0	0	3	3
VL-FOO-0013B-N:					
	0	0	0	0	0
VL-FOO-0100-N:					
	0	0	0	0	0
VL-FOO-0900-N:					
	21	0	0	21	21
TOTAL	36	0	0	36	36
Chicago Operations Office					
CH-OPS-0900:					
	99	0	0	99	99
TOTAL	99	0	0	99	99
Columbus					
OH-CL-0040:					
	172	0	0	172	172
TOTAL	172	0	0	172	172
Fernald					
OH-FN-0013:					
	1,627	0	0	1,627	1,627
OH-FN-0020:					
	16	0	0	16	16
OH-FN-0030:					
	1,338	0	0	1,338	1,338
OH-FN-0050:					
	226	0	0	226	226
OH-FN-0101:					
	14	0	0	14	14
TOTAL	3,220	0	0	3,220	3,220
General Atomics					
VL-GA-0012:					
	15	0	0	15	15

PBS Name	Prior Cost	Lifecycle Cost Remaining (FY 2022 to FY 2091)		Lifecycle Total	
	(97-2021)	Low Range	High Range	Low Range	High Range
TOTAL	15	0	0	15	15
Inhalation Toxicology Laboratory					
CBC-ITL-0030:					
	13	0	0	13	13
VL-ITL-0030:					
	0	0	0	0	0
TOTAL	13	0	0	13	13
Kansas City Plant					
VL-KCP-0030:					
	30	0	0	30	30
VL-KCP-0040:					
	0	0	0	0	0
TOTAL	30	0	0	30	30
Laboratory for Energy-Related Health Research					
LEHR-0040:					
	40	0	0	40	40
VL-LEHR-0040:					
	1	0	0	1	1
TOTAL	40	0	0	40	40
Miamisburg					
OH-MB-0013:					
	265	0	0	265	265
OH-MB-0020:					
	28	0	0	28	28
OH-MB-0030:					
	265	0	0	265	265
OH-MB-0031:					
	0	0	0	0	0
OH-MB-0031.NEW:					
	18	0	0	18	18
OH-MB-0040:					
	0	0	0	0	0
OH-MB-0100:					
	87	0	0	87	87
OH-MB-0101:					
	10	0	0	10	10
TOTAL	671	0	0	671	671
New Mexico Site Support					
VL-FAO-0100-D:					
	109	0	0	109	109
VL-FAO-0100-N:					
	15	0	0	15	15
VL-FAO-0900:					
	233	0	0	233	233

PBS Name	Prior Cost	Lifecycle Cost Remaining (FY 2022 to FY 2091)		Lifecycle Total	
	(97-2021)	Low Range	High Range	Low Range	High Range
TOTAL	357	0	0	357	357
NNSA Service Center					
VL-SV-0100:					
	6	0	0	6	6
TOTAL	6	0	0	6	6
Ohio Field Office					
OH-OPS-0900-D:					
	58	0	0	58	58
OH-OPS-0900-N:					
	397	0	0	397	397
TOTAL	455	0	0	455	455
Pantex					
VL-PX-0030:					
	191	0	0	191	191
VL-PX-0040:					
	15	0	0	15	15
TOTAL	206	0	0	206	206
Princeton					
CH-PPPL-0030:					
	0	0	0	0	0
TOTAL	0	0	0	0	0
Rocky Flats					
RF-0011:					
	470	0	0	470	470
RF-0013:					
	893	0	0	893	893
RF-0020:					
	300	0	0	300	300
RF-0030:					
	2,089	0	0	2,089	2,089
RF-0040:					
	1,921	0	0	1,921	1,921
RF-0041:					
	757	0	0	757	757
CBC-RF-0102:					
	3	0	0	3	3
RF-0100:					
	103	0	0	103	103
RF-0101:					
	37	0	0	37	37
TOTAL	6,573	0	0	6,573	6,573
SEFOR					
CBC-SEFOR-0040N:					

PBS Name	Prior Cost	Lifecycle Cost Remaining (FY 2022 to FY 2091)		Lifecycle Total	
	(97-2021)	Low Range	High Range	Low Range	High Range
	24	0	0	24	24
TOTAL	24	0	0	24	24
Stanford Linear Accelerator Center					
CBC-SLAC-0030:					
	69	0	0	69	69
VL-SLAC-0030:					
	1	0	0	1	1
TOTAL	70	0	0	70	70
Tuba City					
CBC-TUBA-0031:					
	1	0	0	1	1
TOTAL	1	0	0	1	1
GRAND TOTAL	163,873	488,504	723,332	652,376	887,205

Carlsbad

Overview

The Carlsbad Field Office supports cleanup of radioactive and chemical waste resulting from the Manhattan Project and Cold War activities. The Carlsbad Field Office is responsible for 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 defense 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 \$17,200,000 in FY 2023.

Current Status

As of FY 2022, the Waste Isolation Pilot Plant is receiving ~14 shipments/week while in late FY 2023, the Waste Isolation Pilot Plant expects to ramp up to ~17 shipments/week. Waste Isolation Pilot Plant operations are impacted by the capability of the current ventilation system to support waste emplacement and simultaneous mining activities. Currently, ventilation is provided via operation of the original Underground Ventilation System in High Efficiency Particulate Air filtered mode along with the Interim Ventilation System and Supplemental Ventilation System. The Waste Isolation Pilot Plant's three line-item capital asset projects, the Safety Significant Confinement Ventilation System (15-D-411), Utility Shaft (15-D-412)(formerly Exhaust Shaft) and Hoisting Capability Project (21-D-401) will provide the increased airflow and infrastructure capabilities necessary to continue safely and efficiently operating the Waste Isolation Pilot Plant facility for the long term. The new Safety Significant Confinement Ventilation System is necessary to operate at a consistently higher level of ground control, mining, and waste emplacement capability. Ongoing actions in FY 2023 to support waste emplacement operations include: sustainment of safety management program improvements; continued underground stabilization activities (e.g., geotechnical surveys, roof bolting; continued transuranic waste emplacement in Panel 8; collection and analysis of environmental samples; regular maintenance, repair and upgrade of surface and underground structures, systems, components, and equipment; mining operations; and ongoing construction activities on the new Safety Significant Confinement Ventilation System. In addition, construction of the new Utility Shaft will continue; and work on the Hoisting Capability will proceed to achieve Critical Decision 1, Alternative Selection and Cost Range.

Highlights of the FY 2023 Budget Request

The funding request supports disposal facility operations, regulatory and environmental compliance actions, the Central Characterization Project which perform transuranic waste characterization/certification activities to maintain progress toward transuranic waste removal milestones from generator sites, transuranic waste transportation, continued progress on repairing or replacing Waste Isolation Pilot Plant infrastructure, modernizing underground equipment to zero-emission battery-electric vehicles and the new Safety Significant Confinement Ventilation System (15-D-411) and Utility Shaft (15-D-412).

In FY 2023, the Waste Isolation Pilot Plant will work to obtain regulatory approval for mining of replacement panels and evaluation of alternatives for additional disposal panels and drifts, as well as work on the Compliance Recertification Application 2024. Waste Isolation Pilot Plant will also continue work on New Mexico Environment Department reviews, increasing the number of regulatorily approved shielded container assemblies designs available for disposal of remote-handled transuranic waste, and continuing preliminary activities to support additional hoisting capability for salt removal, material, and personnel evacuation. In FY 2023 the Carlsbad Field Office will procure new shielded container assemblies for disposal of remote-handled transuranic waste.

Within Project Baseline Summary Central Characterization Project (Carlsbad-0081), transuranic waste characterization program certifications and transportation certification activities are supported for Savannah River Site, Oak Ridge National Laboratory, Lawrence Livermore National Laboratory, Argonne National Laboratory, and Los Alamos National Laboratory in FY 2023. For Idaho National Laboratory, Central Characterization Project provides only transportation certification

activities. Idaho's transuranic waste characterization program certification (which excludes transportation certification activities) is planned within Idaho's budget request.

The project activities within Project Baseline Summary Critical Infrastructure Repair/Replacement Waste Isolation Pilot Plant (Carlsbad -0083) include General Plant Projects, Maintenance and Repair Projects, and Major Items of Equipment to address the Waste Isolation Pilot Plant's degraded and beyond design life infrastructure that is caused by harsh environmental conditions of salt dust, high heat, and high humidity (during the summer monsoonal seasons) combined with historical management practices that deferred routine maintenance and repair. Major repairs and replacements of facility structures, systems, and components are necessary to maintain life safety, assure nuclear safety, and ensure the capability to emplace waste at a production rate that supports EM's cleanup mission and the National Nuclear Security Administration's enduring national security mission.

Transportation activities within Project Baseline Summary Transportation-Waste Isolation Pilot Plant (Carlsbad-0090) include support of a core shipping capability for transuranic waste shipments to both the Waste Isolation Pilot Plant and inter-site shipments using, as necessary, Nuclear Regulatory Commission licensed Type B transportation containers, maintenance and support for transportation containers, Nuclear Regulatory Commission Certificate of Compliance maintenance for transportation containers, as well as maintenance of established shipping corridors and associated stakeholder support activities with state organizations and consultation with Tribal Nations. In FY 2023, the transportation capability will ramp up, throughout the fiscal year to support up to 17 waste shipments per week to the Waste Isolation Pilot Plant, with expected shipments from Idaho National Laboratory, Los Alamos National Laboratory, Savannah River Site, Oak Ridge National Laboratory, Lawrence Livermore National Laboratory, Argonne National Laboratory and potentially other sites. Carlsbad Field Office will procure new Nuclear Regulatory Commission-certified Type B highway shipping containers (HalfPACTs) for transporting the shielded container assemblies.

The FY 2023 request includes \$25,000,000 in Total Project Cost line-item funding for construction for the new Utility Shaft, formerly the Exhaust Shaft, (15-D-412) and \$59,073,000 for continued construction of Safety Significant Confinement Ventilation System (15-D-411). The Exhaust Shaft has been renamed the Utility Shaft, which provides the best description for the multiple capabilities the shaft could be utilized for including airflow, salt hoisting, material handling, transporting personnel and emergency egress. In addition, as design-engineering matured, it was determined that for usability and nuclear safety reasons, the new shaft would better serve as an intake shaft and that the existing air intake shaft would better be used as an exhaust shaft to provide for an unfiltered exhaust pathway for mining dust and supporting mine operations.

FY 2022 - 2023 Key Milestones/Outlook

- (FY 2022-FY 2023) Repair/replacement of critical infrastructure.
- (FY 2022-FY 2023) Submittal and discussions of revising groundwater detection monitoring program, consolidate Resource Conservation and Recovery Act operating record requirement and new shielded container variants with regulators.
- (FY 2022-FY 2023) Construction on the Safety Significant Confinement Ventilation System (15-D-411).
- (FY 2022-FY 2023) Shaft sinking of the Utility Shaft Project (15-D-412).

Regulatory Framework

The Waste Isolation Pilot Plant has five primary regulators: 1) the U.S. Environmental Protection Agency, which regulates radioactive (transuranic) constituents and certifies that the Waste Isolation Pilot Plant will comply with the long-term radioactive waste disposal regulations (40 Code of Federal Regulations Part 191, Subparts B and C); 2) the New Mexico Environment Department, which regulates the hazardous constituents of waste in accordance with the requirements in the Waste Isolation Pilot Plant Hazardous Waste Facility (Resource Conservation and Recovery Act Permit for the repository during the operational time frame; 3) the Nuclear Regulatory Commission, which certifies the design and capability of Type B radioactive material shipping containers; 4) the U.S. Department of Transportation, which regulates highway transportation and radioactive and hazardous material shipping containers; and 5) the U.S. Mine Safety and Health Administration, which is responsible for quarterly Waste Isolation Pilot Plant inspections.

Contractual Framework

Program planning and management at the Carlsbad Field Office 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 execute the cleanup mission.

The Waste Isolation Pilot Plant contract is currently a Management and Operating Contract. A new award is anticipated in late FY 2022 with transition ending late FY 2022. The contract will be a cost-plus award fee basis (with mostly performance-based incentives) with an original base performance period of October 1, 2022, to September 30, 2026, with six one-year option periods.

This Waste Isolation Pilot Plant Management and Operating contract covers all site operations at the Waste Isolation Pilot Plant and support of the National Transuranic Waste Program, including the receipt and handling of transuranic waste shipments, characterization of waste at generator sites, verification/certification of waste documentation, permitting and certification of the repository, and transportation engineering and certification.

The Carlsbad Field Office also manages contracts, cooperative agreements, work authorizations, and grants that provide management and scientific analysis, technical assistance, site integration, transportation and emergency management services, transportation tracking and communications support, and electric utilities. The transportation services prime contract an indefinite delivery/indefinite quantity contract has a base year period and four option periods. The contract is expected to be awarded mid-FY 2022 and run through May 2027. As transportation requirements become known during the term of the contract, the Contracting Officer will place fixed price per unit task orders with the contractor for the transportation of transuranic waste.

Strategic Management

The Department will work to reduce the footprint of transuranic waste at sites across the complex through transuranic waste streams disposal. The Carlsbad Field Office is key to the ultimate cleanup of transuranic waste across the DOE complex, as well as supporting other DOE mission programs.

Carlsbad

Funding (\$K)

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted	FY 2023 Request vs FY 2021 Enacted (%)
Defense Environmental Cleanup					
Waste Isolation Pilot Plant					
Waste Isolation Pilot Plant					
CB-0080 / Operate Waste Disposal Facility-WIPP					
Operating	262,802	262,802	279,210	+16,408	+6%
Construction					
15-D-411: Safety Significant Confinement Ventilation System, WIPP	35,000	35,000	59,073	+24,073	+69%
15-D-412: Utility Shaft	55,000	55,000	25,000	-30,000	-55%
21-D-401: Hoisting Capability Project	10,000	10,000	0	-10,000	-100%
	362,802	362,802	363,283	+481	+0%
CB-0081 / Central Characterization Project	21,850	21,850	26,245	+4,395	+20%
CB-0083 / Critical Infrastructure Repair/Replacement	12,000	12,000	21,250	+9,250	+77%
CB-0090 / Transportation-WIPP	16,608	16,608	45,238	+28,630	+172%
Subtotal, Waste Isolation Pilot Plant	413,260	413,260	456,016	+42,756	+10%
Safeguards and Security					
CB-0020 / Safeguards and Security	6,806	6,806	6,806	+0	+0%
Total, Defense Environmental Cleanup	420,066	420,066	462,822	+42,756	+10%

Carlsbad
Explanation of Major Changes (\$K)

	FY 2021 Enacted	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted
Defense Environmental Cleanup			
Waste Isolation Pilot Plant			
CB-0080 / Operate Waste Disposal Facility-WIPP			
• Increase in Waste Isolation Pilot Plant Operating to support ramping up to support increased shipments requiring additional shifts of personnel.			
• Increase in Safety Significant Confinement Ventilation System project to continue construction activities.			
• Reduction in Utility Shaft project based on residual impacts from the delay in receiving the Class 3 Permit Modification Request approval.			
• Hoisting Capability Project on hold until FY 2023.	362,802	363,283	+481
CB-0081 / Central Characterization Project			
• Increase reflects anticipated increase in support sites' transuranic waste characterization programs and transportation certification activities. Increase will support an increase of shipments from 14/week to 17/week.	21,850	26,245	+4,395
CB-0083 / Critical Infrastructure Repair/Replacement			
• Increase reflects continued infrastructure recapitalization projects as well as mine modernization activities such as Heating, ventilation, and air conditioning replacement, Motor Control Center replacements, etc.	12,000	21,250	+9,250
CB-0090 / Transportation-WIPP			
• Increase reflects transportation activities from multiple locations required for sustained operations at a rate of up to 17 shipments per week as well as support the procurement of additional Type-B over-the-highway HalfPact Shipping Containers and trailer refurbishments.	16,608	45,238	+28,630
Safeguards and Security			
CB-0020 / Safeguards and Security			
• No change.	6,806	6,806	+0
Total, Carlsbad	420,066	462,822	+42,756

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

Overview

This Project Baseline Summary can be found within the Defense Environmental Cleanup appropriation.

This Project Baseline Summary includes all activities necessary for the disposal of contact-handled and remote-handled transuranic waste at the Waste Isolation Pilot Plant. Key operations elements include: 1) operation of the disposal facility – including mining, waste handling, and the maintenance/repair of infrastructure to safely maintain the facility and operations in compliance with all Federal and state laws, regulations, and environmental requirements; and 2) environmental compliance – maintenance of compliance certification through monitoring and verifying the performance of the system’s sensitive parameters.

FY 2023 funding includes the following activities: surface and underground operations, including transuranic waste emplacement in existing approved disposal panels and mine stability (ground control); maintenance and repair of facilities and equipment; repair or improvement of New Mexico roads used for the transportation of DOE shipments of transuranic waste; environmental monitoring; emergency preparedness and management; quality assurance; nuclear safety measures, including Documented Safety Analysis maintenance; security, safety and health programs, including safety management program and oversight program enhancements such as fire protection systems; regulatory compliance; project planning and control; mining and panel closure activities, procurement, finance and accounting; information systems; and management and oversight and interagency programs.

The Waste Isolation Pilot Plant’s three line-item capital projects, the Safety Significant Confinement Ventilation System (15-D-411), Utility Shaft (15-D-412) and Hoisting Capability Project (21-D-401) are designed to provide the increased airflow and infrastructure capabilities necessary to operate the Waste Isolation Pilot Plant facility efficiently and effectively.

In FY 2023, the Waste Isolation Pilot Plant will also be working towards approval through the regulatory processes for mining of replacement panels and evaluation of alternatives for additional disposal panels and drifts, as well as work on the Compliance Recertification Application 2024 to allow for disposal up to the Waste Isolation Pilot Plant Land Withdrawal Act volume limits and for increasing the number of regulatory approved shielded container designs available for disposal of remote handled transuranic waste.

The request for this Project Baseline Summary supports direct maintenance and repair activities required in the course of daily operations.

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

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
\$362,802,000	\$363,283,000	+\$481,000

-
- Maintained 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 rights-of-way, project planning and control, procurement, finance and accounting, information services and oversight and interagency programs, etc.
 - Provided 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.
 - Supported routine site maintenance items and activities.
 - 15-D-411: Continued construction on Safety Significant Confinement Ventilation System
 - Completed 44 of 44 New Filter Building Safety Significant Slab concrete placed
 - 16 of 153 Safety Significant concrete wall placed
 - 30 of 36 precast walls and 1 precast roof panel placed
 - 15-D-412: Continued Utility Shaft (formerly Exhaust Shaft) until temporary authorization expired.
 - Completed the installation of the shaft liner to the bottom of the temporary collar
 - Installed the seven sections of the duct.
 - Completed Panel 8 outfitting.
- Perform activities for continued waste emplacement operations including sustainment of safety management program improvements, active mining, mine stabilization, and habitability activities in all underground areas, radiological contamination control activities, High Efficiency Particulate Air Filter change out, purchase of zero or low emission mining equipment and infrastructure improvements.
 - Maintain safety and personnel health programs, surface and underground operations, program administration, generator site interface, public affairs programs, interagency and cooperative agreements for independent oversight, environmental oversight, and rights-of-way.
 - Support 40 Code of Federal Regulations Part 191/194 compliance, site environmental compliance, Resource Conservation and Recovery Act permit Waste Isolation Pilot Plant Hazardous Waste Facility Permit compliance, quality assurance, and payments to regulatory agencies.
 - Support routine facility and equipment maintenance items and activities.
 - Continue progress toward completion of Safety Significant Confinement Ventilation System (15-D-411) and Utility Shaft (formerly Exhaust Shaft) (15-D-412) projects to support completion of the new permanent ventilation system.
 - Provide upgrades to existing hoist capabilities.
 - Continue emplacement in Panel 8.
 - Continue regulatory activities to support mining replacement and additional panels needed to continue the mission.
 - Procure bulk-ordered shielded container assemblies for shipment of remote-handled
- Increase in Waste Isolation Pilot Plant Operating to support ramping up to support increased shipments requiring additional shifts of personnel.
 - Increase in Safety Significant Confinement Ventilation System project to continue construction activities.
 - Reduction in Utility Shaft project based on residual impacts from the delay in receiving the Class 3 Permit Modification Request approval.
 - Hoisting Capability Project on hold until FY 2023.

transuranic waste to the Waste Isolation Pilot Plant.

Central Characterization Project (PBS: CB-0081)

Overview

This Project Baseline Summary can be found within the Defense Environmental Cleanup appropriation.

This project consists of Central Characterization Project activities, which are managed by DOE’s National Transuranic Program. The project consists of two primary areas of overall program scope. First, the National Transuranic Program-Central Characterization Project provides certifications of waste generator sites’ programs, systems, and processes utilized for characterization of transuranic waste to be disposed at the Waste Isolation Pilot Plant. Second, the National Transuranic Program-Central Characterization Project maintains the on-site resources at each generator site to certify all transuranic waste shipments both between DOE sites (inter-site) and directly to the Waste Isolation Pilot Plant. As part of the certification scope, the National Transuranic Program-Central Characterization Project maintains the resources to manage the DOE-wide transuranic waste shipping certification process required by the Waste Isolation Pilot Plant’s Hazardous Waste Facility Permit.

Day-to-day waste characterization activities such as acceptable knowledge, visual examination, real time radiography, nondestructive assay, dose to curie conversion and flammable gas analysis are planned within each respective site’s budget.

Central Characterization Project (PBS: CB-0081)

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
\$21,850,000	\$26,245,000	+\$4,395,000
<ul style="list-style-type: none"> • Provided acceptable knowledge and procedural support, mobile waste loading support at select generator sites and waste certification support required for characterization activities. • Supported generator site interface for the Central Characterization Project activities, Central Characterization Project administration, and Performance Demonstration Program for Resource Conservation and Recovery Act constituents. • Supported Central Characterization Program for legacy transuranic waste disposition at Idaho 	<ul style="list-style-type: none"> • Provide acceptable knowledge and procedural support, and mobile waste loading support at actively shipping generator sites. • 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. • Conduct Central Characterization Project certifications for transuranic waste 	<ul style="list-style-type: none"> • Increase reflects anticipated increase in support sites’ transuranic waste characterization programs and transportation certification activities. Increase will support an increase of shipments from 14/week to 17/week.

National Laboratory (transportation certification only, where Idaho National Laboratory funds characterization certification), and Oak Ridge National Laboratory.

- Continued corrective actions from Radiological Release Accident Investigation Board Report Phase II.

disposition and transportation at the Savannah River Site, Oak Ridge National Laboratory, Lawrence Livermore National Laboratory, Argonne National Laboratory, and Los Alamos National Laboratory. Provide transportation certification and characterization and certification at Idaho National Laboratory (Idaho National Laboratory funds waste certification).

Critical Infrastructure Repair/Replacement (PBS: CB-0083)

Overview

This Project Baseline Summary can be found within the Defense Environmental Cleanup appropriation.

This Project Baseline Summary was established to address the Waste Isolation Pilot Plant’s degraded and beyond design life infrastructure, which includes General Plant Projects and Major Items of Equipment that are needed for safety and regulatory compliance and to sustain mining and waste emplacement operations.

FY 2023 funding is requested for the projects in the table below.

Project Title	Total Project	Current Status	Mission Impact	PY Funding	FY 2023 Request	Outyears	Construction Design Estimate	Notes
Waste Handling Building Fire Suppression System Recapitalization	9,500	System is impaired. Compensatory measures are in place. Fire system is required by the Technical Safety Requirements to protect workers and waste. Procure subcontractor services to fabricate and install a new/refurbished fire suppression system in the Waste Handling Building. The DOE Operational Readiness Review team identified these deficiencies in 2016	Reduction in shipping and waste emplacement. Potential life safety issue. Potential for offsite release.	1,500	200		Complete	Design and Construction are being done in separate years

Project Title	Total Project	Current Status	Mission Impact	PY Funding	FY 2023 Request	Outyears	Construction Design Estimate	Notes
Contact Handled and Remote Handled Confinement Ventilation System Heating, Ventilation, and Air Conditioning Replacement	5,760	System is degraded but operable with compensatory measures. Procure subcontractor services to replace the Heating Ventilation and Air Conditioning Systems including High Efficiency Particulate Air Systems in both the Contact Handled and Remote Handled sides of the Waste Handling Building and in the adjacent TRUPACT Maintenance Facility.	Potential for offsite release.	0	5,760		800	Design and Construction are being done in separate years; design being done in FY 2022
Electrical Substation #2 Replacement Fabrication	1,080	Beyond design life Rusted and corroded housing with high potential for system failure. Procure subcontractor services to design, procure, and	Upon failure: Stop waste shipments and emplacement Egress from mine with no further entries	0	1,080		900	Design and Construction are being done in separate years

Project Title	Total Project	Current Status	Mission Impact	PY Funding	FY 2023 Request	Outyears	Construction Design Estimate	Notes
		install replacement substations. Priority order 1,3,6,2,4						
Electrical Substation #4 Replacement Fabrication	1,080	Beyond design life Rusted and corroded housing with high potential for system failure. Procure subcontractor services to design, procure, and install replacement substations. Priority order 1,3,6,2,4	Upon failure: Stop waste shipments and emplacement Egress from mine with no further entries	0	1,080		900	Design and Construction are being done in separate years
Electrical Substation #6 Replacement Fabrication	1,080	Beyond design life Rusted and corroded housing with high potential for system failure. Procure subcontractor services to design, procure, and install replacement substations. Priority order 1,3,6,2,4	Upon failure: Stop waste shipments and emplacement Egress from mine with no further entries	0	1,080		900	Design and Construction are being done in separate years

Project Title	Total Project	Current Status	Mission Impact	PY Funding	FY 2023 Request	Outyears	Construction Design Estimate	Notes
Replace Property Protection Area Fence	1,560	This perimeter fence and vehicle trap at the Waste Isolation Pilot Plant site entrance is degraded and needs to be expanded due to new Capital Asset Projects construction. Procure subcontractor services to replace the WIPP Property Protection Area fence and Vehicle Trap.	Interruptions in site operations due to security breaches	0	1,560			
Replace and Upgrade Security Vehicle Trap	300	This perimeter fence and vehicle trap at the WIPP site entrance is degraded and needs to be expanded due to new Capital Asset Projects construction. Procure subcontractor services to replace the WIPP Property Protection Area	Interruptions in site operations due to security breaches	0	300			

Project Title	Total Project	Current Status	Mission Impact	PY Funding	FY 2023 Request	Outyears	Construction Design Estimate	Notes
		fence and Vehicle Trap.						
Data Management System for Real-Time Surface & Underground Monitoring	1,440	Need for modernization. Procure subcontractor services to install data management system for real-time monitoring on site	Accountability issues	0	1,440			
TRUPACT Maintenance Facility Heating Ventilation and Air Conditioning Systems Replacement	600	System is degraded but operable with compensatory measures. Procure subcontractor services to replace the Heating Ventilation and Air Conditioning Systems including High Efficiency Particulate Air Systems in both the Contact Handled and Remote Handled sides of the Waste Handling Building and in the adjacent	Potential for offsite release.	0	600		included in Contact Handled / Remote Handled Heating Ventilation and Air Conditioning Systems (line 4)	Design and Construction are being done in separate years

Project Title	Total Project	Current Status	Mission Impact	PY Funding	FY 2023 Request	Outyears	Construction Design Estimate	Notes
		TRUPACT Maintenance Facility.						
Motor Control Center replacements	1,500	Motor Control Centers are beyond design life and are experiencing frequent corrective maintenance actions. Design and deploy new Automatic Center of Gravity Lift Fixtures.	There are several units however most are beyond design life. Failure of the equipment will result in a stop to TRUPACT unloading at WIPP. These units are also used at the generator sites and failure of the Automatic Center of Gravity Lift Fixtures will result in inability to load TRUPACTS.	0	1,500		50	
Design and Install Automatic Center of Gravity Lift Fixtures	2,400	Automatic Center of Gravity Lift Fixtures are beyond design life and spare parts are unavailable for certain components. Design and deploy	There are several units however most are beyond design life. Failure of the equipment will result in a stop to TRUPACT	0	2,400		300	Design and Construction are being done in separate years; design being done in FY 2022

Project Title	Total Project	Current Status	Mission Impact	PY Funding	FY 2023 Request	Outyears	Construction Design Estimate	Notes
		new Automatic Center of Gravity Lift Fixtures	unloading at WIPP. These units are also used at the generator sites and failure of the Automatic Center of Gravity Lift Fixtures will result in inability to load TRUPACTs.					
UG Electrical Infrastructure Ensure adequate power for Battery Electric Vehicles, move power from back to rib to decrease stress on back	1,800	The Waste Isolation Pilot Plant Underground equipment is primarily internal combustion but recent initiatives have begun the conversion to electric vehicles for mining applications with waste handling equipment application expected to follow. The current electrical system is aged. Both capability for where charging drops should be		0	200	1,600	200	Design and Construction are being done in separate years

Project Title	Total Project	Current Status	Mission Impact	PY Funding	FY 2023 Request	Outyears	Construction Design Estimate	Notes
		installed as well as capacity to support a large volume of electric vehicles is inadequate for the envisioned application.						
FY 2023 Total					\$17,200			

Critical Infrastructure Repair/Replacement (PBS: CB-0083)

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
\$12,000,000	\$21,250,000	+\$9,250,000
<ul style="list-style-type: none"> Repaired, replaced, and modernized the Waste Isolation Pilot Plant’s degraded facility structures, systems, and components. 	<ul style="list-style-type: none"> Repair, replace, and modernize the Waste Isolation Pilot Plant’s degraded facility structures, systems, and components. 	<ul style="list-style-type: none"> Increase reflects continued infrastructure recapitalization projects as well as mine modernization activities such as Heating, ventilation, and air conditioning replacement, Motor Control Center replacements, etc.

Transportation-WIPP (PBS: CB-0090)

Overview

This Project Baseline Summary 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, and transport in Nuclear Regulatory Commission licensed containers 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.

FY 2023 funding supports waste shipment capabilities and coordination between generator sites and waste shipment capabilities to the Waste Isolation Pilot Plant, as well as transportation corridor grants with stakeholders.

Transportation-WIPP (PBS: CB-0090)

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
\$16,608,000	\$45,238,000	+\$28,630,000
<ul style="list-style-type: none"> • Provided transportation capabilities through the carrier contracts. • Supported shipping corridor readiness, including training and associated stakeholder and regulatory grants, including Nuclear Regulatory Commission fees. • Maintained package certification and associated required maintenance for packages used: TRUPACT II's, Half PACTS, TRUPACT III's, and RH-72B's. 	<ul style="list-style-type: none"> • Provide transportation activities from multiple locations required for sustained operations at a rate of up to 17 shipments per week. • Maintain package certification and associated required maintenance for packages used: TRUPACT II's, Half PACTS, TRUPACT III's, and Remote-Handled-72B's. • Procurement of additional Type-B over-the-highway HalfPact Shipping Containers. 	<ul style="list-style-type: none"> • Increase reflects transportation activities from multiple locations required for sustained operations at a rate of up to 17 shipments per week as well as support the procurement of additional Type-B over-the-highway HalfPact Shipping Containers and trailer refurbishments.

Safeguards and Security (PBS: CB-0020)

Overview

This Project Baseline Summary can be found within the Defense Environmental Cleanup appropriation.

The scope of the Waste Isolation Pilot Plant Security Program includes, but is not limited to, planning, administering, and executing a program that protects government assets and ensures the security of disposed sensitive wastes.

The Cyber Security Program at the Carlsbad Field Office protects government information and technology systems to support both disposal operations at the Waste Isolation Pilot Plant and transuranic waste characterization, packaging, certification, and transportation activities within the National Transuranic Waste Program.

Safeguards and Security (PBS: CB-0020)

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
\$6,806,000	\$6,806,000	+\$0
<ul style="list-style-type: none"> • Provide security coverage at the Waste Isolation Pilot Plant. • Provide cyber security to ensure DOE information resources are identified and protected. 	<ul style="list-style-type: none"> • Provide security coverage at the Waste Isolation Pilot Plant. • Provide cyber security to ensure DOE information resources are identified and protected. 	<ul style="list-style-type: none"> • No change.

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

	Total	Prior Years	FY 2021 Enacted	FY 2021 Actuals	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted
Capital Operating Expenses Summary (including (Major Items of Equipment (MIE))							
Capital Equipment > \$500K (including MIE)	0	0	0		0		
Minor Construction (<\$25M)	31,554	836	6,759	82	6,759	17,200	+10,441
Total, Capital Operating Expenses	31,554	836	6,759	82	6,759	17,200	+10,441
Minor Construction (Total Estimated Cost (TEC) <\$25M)							
<u>Carlsbad (Direct Funded)</u>							
Fire Water Loop Phase 3 (Spurs to facilities)	5,094	836	2,129	68	2,129	0	-2,129
Underground Salt Pocket Design	5,000	0	2,500	11	2,500	0	-2,500
Safety Significant Fire Suppression System (Waste Handling Building – 411 Fire System)	4,460	0	2,130	3	2,130	200	-1,930
Contact Handled (CH) and Remote Handled (RH) Confinement Ventilation System HVAC Replacement	5,760	0	0	0	0	5,760	+5,760
Electrical Substation #2 Replacement Fabrication	1,080	0	0	0	0	1,080	+1,080
Electrical Substation #4 Replacement Fabrication	1,080	0	0	0	0	1,080	+1,080
Electrical Substation #6 Replacement Fabrication	1,080	0	0	0	0	1,080	+1,080
Replace Property Protection Area Fence	1,560	0	0	0	0	1,560	+1,560
Replace and Upgrade Security Vehicle Trap	300	0	0	0	0	300	+300
Data Management System for Real-Time Surface & Underground Monitoring	1,440	0	0	0	0	1,440	+1,440
Motor Control Center Replacements	1,500	0	0	0	0	1,500	+1,500
Design and Install Automatic Center of Gravity Lift Fixture	2,400	0	0	0	0	2,400	+2,400
TRUPACT Maintenance Facility HVAC Replacement	600	0	0	0	0	600	+600
Extend the Underground Compressed Air System to the West	200	0	0	0	0	200	+200
Total, Carlsbad	31,554	836	6,759	82	6,759	17,200	+10,441

Environmental Management/
Carlsbad

FY 2023 Congressional Budget Justification

Total	Prior Years	FY 2021 Enacted	FY 2021 Actuals	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted
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Total, Capital Summary

31,554	836	6,759	82	6,759	17,200	+10,441
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**Carlsbad
Construction Projects Summary (\$K)**

	Total	Prior Years	FY 2021 Enacted	FY 2021 Actuals	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted
15-D-411, Safety Significant Confinement Ventilation System (WIPP) (CB-0080)							
Total Estimate Cost (TEC)	TBD	266,016	35,000	68,699	35,000	50,300	+15,300
Other Project Costs (OPC)	TBD	14,200	0	2,773	0	8,700	+8,700
Total Project Cost (TPC) 15-D-411	TBD^a	280,216	35,000	71,472	35,000	59,000	+24,000
15-D-412, Utility Shaft, formerly Exhaust Shaft (WIPP) (CB-0080)							
Total Estimate Cost (TEC)	TBD	106,600	53,312	55,421	53,312	23,173	-30,139
Other Project Costs (OPC)	TBD	4,000	1,488	648	1,488	1,827	+339
Total Project Cost (TPC) 15-D-412	TBD^b	110,600	54,800	56,069	54,800	25,000	-29,800
21-D-401, Hoisting Capability Project							
Total Estimate Cost (TEC)	TBD	0	10,000	0	10,000	0	-10,000
Other Project Costs (OPC)	0	0	0	0	0	0	0
Total Project Cost (TPC) 21-D-401	TBD	0	10,000	0	10,000	0	-10,000

^a A Baseline Change Proposal is under review.

^b A Baseline Change Proposal is under review.

**15-D-411, Safety Significant Confinement Ventilation System (CB-0080)
Waste Isolation Pilot Plant, Carlsbad, New Mexico
Project is for Design and Construction**

1. Summary, Significant Changes, and Schedule and Cost History

Summary

The combined construction total estimated cost and other project costs in FY 2023 Request for the Safety Significant Confinement Ventilation System is \$59,000,000: \$50,300,000 for construction total estimated cost and \$8,700,000 for other project costs.

This project will design and construct a new ventilation system for the Waste Isolation Pilot Plant underground repository. This project provides the entire surface and subsurface equipment and infrastructure for the underground ventilation system. All major equipment (Ventilation Fans, High-Efficiency Particulate Air Filter Housings, and Salt Reduction Units) have been procured and are either on site ready to be installed or in near final fabrication and testing phases. The Salt Reduction Building structure has been completed and installation of equipment systems is underway, and the New Filter Building is under construction.

A Level 3 Certified Federal Project Director is assigned to the Project and in the process of obtaining the Level 4 certification.

The original baseline is at Critical Decision 2/3 was approved on May 10, 2018, with a Total Project Cost of \$287,785,000 and Critical Decision 4 on November 30, 2022.

Significant Changes

This Construction Project Data Sheet is an update of the FY 2022 Construction Project Data Sheet and does not include a new start for the budget year.

In FY 2020, the contractor for the Safety Significant Confinement Ventilation System project indicated a potential cost increase to the Total Project Cost of approximately \$30M as a result of engineering changes notices. A Department-commissioned constructability review and the required annual Project Peer Review conducted, confirmed a breach in the Total Project Cost and Critical Decision 4 date. The contractor submitted a Baseline Change Proposal in December 2020 and required Department reviews ensued in February 2021.

Critical Milestone History

(Fiscal quarter or date)

	CD-0	Conceptual Design Complete	CD-1	CD-3A	CD-2	Final Design Complete	CD-3	D&D Complete	CD-4
FY 2016	10/22/2014	3QFY 2015	3QFY 2015	4QFY 2016	1QFY 2016	4QFY 2016	TBD	N/A	TBD
FY 2017	10/22/2014	3QFY 2015	1QFY 2016	4QFY 2016	2QFY 2018	2QFY 2018	TBD	N/A	TBD
FY 2018	10/22/2014	12/10/2015	12/23/2015	4QFY 2017	2QFY 2018	2QFY 2018	TBD	N/A	TBD
FY 2019	10/22/2014	12/10/2015	12/23/2015	4QFY 2017	5/10/2018	2QFY 2018	TBD	N/A	TBD
FY 2020	10/22/2014	12/10/2015	12/23/2015	10/6/2017	5/10/2018	5/10/2018	5/10/2018	11/30/2022	11/30/2022
FY 2021	10/22/2014	12/10/2015	12/23/2015	10/6/2017	5/10/2018	5/10/2018	5/10/2018	11/30/2022	11/30/2022
FY 2022	10/22/2014	12/10/2015	12/23/2015	10/6/2017	5/10/2018	5/10/2018	5/10/2018	TBD	TBD
FY 2023	10/22/2014	12/10/2015	12/23/2015	10/6/2017	5/10/2018	5/10/2018	5/10/2018	N/A	TBD

CD-0—Approve Mission Need

Conceptual Design Complete - Actual date the conceptual design was completed

**Environmental Management/
Carlsbad/15-D-411 Safety Significant
Confinement Ventilation System,
WIPP**

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 5)

CD-4 - Approve Start of Operations or Project Completion

CD-3A – Site Preparation, and Long Lead Procurement

Project Cost History

(Dollars in Thousands)

	TEC, Design	TEC, Construction	TEC, Total	OPC Except D&D	OPC, D&D	OPC, Total	TPC
FY 2016	TBD	TBD	TBD	TBD	N/A	TBD	TBD
FY 2017	TBD	TBD	TBD	TBD	N/A	TBD	TBD
FY 2018	TBD	TBD	TBD	TBD	N/A	TBD	TBD
FY 2019	TBD	TBD	TBD	TBD	N/A	TBD	TBD
FY 2020	16,860	244,456	261,316	22,064	4,405	26,469	287,785
FY 2021	16,860	244,456	261,316	22,064	4,405	26,469	287,785
FY 2022	TBD	TBD	TBD	TBD	N/A	TBD	TBD
FY 2023	TBD	TBD	TBD	TBD	N/A	TBD	TBD

2. Project Scope and Justification

Scope

Design and construct a new ventilation system for the Waste Isolation Pilot Plant underground repository to replace the 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, diesel generator, exhaust stack, exhaust filter buildings, filter banks, and site support utilities. This project provides the entire surface infrastructure and equipment for the underground ventilation system. The new underground ventilation system will support additional personnel and equipment underground and will allow mining dust to exit the Waste Isolation Pilot Plant underground in a filtered or unfiltered exhaust pathway. Together, these outcomes provide the capability for simultaneous underground activities, such as mining and waste emplacement, which significantly increases operational efficiency.

Justification

In February 2014, the Waste Isolation Pilot Plant experienced two separate and unrelated events: a vehicle fire underground and a radiological release. As a result, the nation's only geologic repository suspended operations, leading to impacts to ongoing transuranic waste disposition efforts across the DOE complex, and impacting enforceable regulatory commitments. In addition, the radiological release 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, and 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 habitability standards for the worker and meet surface environmental protection needs will delay

Environmental Management/

Carlsbad/15-D-411 Safety Significant

Confinement Ventilation System,

WIPP

FY 2023 Congressional Budget Justification

achieving Waste Isolation Pilot Plant normal operations and compromise the EM cleanup mission and the National Nuclear Security Administration’s national security mission. The underground ventilation system is paramount to providing safe underground working conditions.

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*.

Key Performance Parameters

The threshold key performance parameters represent the acceptable performance that the project must achieve. Achievement of the Threshold Key Performance Parameters will be a prerequisite for approval of Critical Decision 4, Project Completion.

Performance Measure	Threshold
Airflow Capacity	Provide ventilation (540,000 cubic feet per minute measured at the exhaust shaft collar on the surface) for concurrent mining, maintenance, and waste emplacement operations in either filtered or unfiltered mode of operation.
Maintainability	Provide a ventilation system that can maintain continuous operations (540,000 cubic feet per minute measured at the exhaust shaft collar on the surface) while allowing maintenance and filter medium replacement with isolation dampers on 22 High-Efficiency Particulate Air filter units with 1 High-Efficiency Particulate Air unit in standby and 1 High-Efficiency Particulate Air filter unit in maintenance mode.
Response Time	Provide a safety significant pressure boundary with safety significant isolation dampers that will close within 75 seconds of initiation of an underground continuous air monitoring detection of a radioactive contamination event that will provide a ventilation system that will allow operations to be continued or re-established with a High-Efficiency Particulate Air filtered ventilation mode of operation.

3. Project Cost and Schedule

Financial Schedule

	(Dollars in Thousands)		
	Budget Authority (Appropriations)	Obligations	Costs
Total Estimated Cost (TEC)			
Design			
FY 2015 ^a	12,000	12,000	0
FY 2016	4,860	4,860	5,208
FY 2017	0	0	11,652
Total, Design	16,860	16,860	16,860
Construction			
FY 2016	18,358	18,358	0
FY 2017	2,532	2,532	0
FY 2018	86,000	86,000	12,403
FY 2019	84,212	84,212	64,846
FY 2020	58,054	58,054	36,756
FY 2021	35,000	35,000	71,979

FY 2022	58,000	58,000	121,738
FY 2023	50,300	50,300	68,699
Outyears	TBD	TBD	TBD
Total, Construction	TBD	TBD	TBD

TEC

FY 2015	12,000	12,000	0
FY 2016	23,218	23,218	5,208
FY 2017	2,532	2,532	11,652
FY 2018	86,000	86,000	12,403
FY 2019	84,212	84,212	64,846
FY 2020	58,054	58,054	36,756
FY 2021	35,000	35,000	71,979
FY 2022	58,000	58,000	121,738
FY 2023	50,300	50,300	68,699
Outyears	TBD	TBD	TBD
Total, TEC	TBD	TBD	TBD

Other Project Costs

OPC (except D&D)

FY 2015	7,000	7,000	1,232
FY 2016	0	0	782
FY 2017	2,000	2,000	1,178
FY 2018	2,700	2,700	600
FY 2019	2,500	2,500	820
FY 2020	0	0	2
FY 2021	0	0	2,773
FY 2022	7,000	7,000	6,638
FY 2023	8,700	8,700	14,253
Outyears	TBD	TBD	TBD
Total, OPC (except D&D)	TBD	TBD	TBD

OPC D&D

FY 2021	0	0	0
FY 2022	0	0	0
Outyears	0	0	0
Total OPC D&D	0	0	0

Total OPC with D&D

FY 2015	7,000	7,000	1,232
FY 2016	0	0	782
FY 2017	2,000	2,000	1,178
FY 2018	2,700	2,700	600
FY 2019	2,500	2,500	820

FY 2020	0	0	2
FY 2021	0	0	2,773
FY 2022	7,000	7,000	6,638
FY 2023	8,700	8,700	14,253
TBD	TBD	TBD	TBD
Total OPC	TBD	TBD	TBD
Total Project Costs			
FY 2015	19,000	19,000	1,232
FY 2016	23,218	23,218	5,990
FY 2017	4,532	4,532	12,830
FY 2018	88,700	88,700	13,003
FY 2019	86,712	86,712	65,666
FY 2020	58,054	58,054	36,758
FY 2021	35,000	35,000	74,752
FY 2022	65,000	65,000	128,376
FY 2023	59,000	59,000	82,952
Outyears	TBD	TBD	TBD
Total, TPC	TBD	TBD	TBD

^a The FY 2015 Omnibus Appropriations Bill appropriated \$12,000,000 in construction funding for this project. **Note that Congress had already provided funding that exceeded the Baseline TPC.**

Details of Project Cost Estimate

	(Dollars in Thousands)		
	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design			
Design	16,860	16,860	16,860
Contingency	0	0	0
Total, Design	16,860	16,860	16,860
Construction			
Site Work	2,585	2,585	2,585
Long-lead Equipment	22,909	22,909	22,909
Construction	TBD	180,240	180,240
Contingency	TBD	38,722	38,722
Total, Construction	TBD	244,456	244,456
Total, TEC	TBD	261,316	261,316
Contingency, TEC	TBD	38,722	38,722
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning	TBD	628	628
Conceptual Design	TBD	800	800

Reviews	TBD	2,600	2,600
Contingency	TBD	2,446	2,446
Other OPC	TBD	15,590	15,590
Total, OPC except D&D	TBD	22,064	22,064
OPC, D&D	TBD		
D&D	TBD	4,405	4,405
Contingency	TBD	0	0
Total, OPC D&D	TBD	4,405	4,405
Total, OPC	TBD	26,469	26,469
Contingency	TBD	2,446	2,446
Total, TPC	TBD	287,785	287,785
Total, Contingency	TBD	41,168	41,168

Schedule of Appropriation Requests

(Dollars in Thousands)

Request		Prior Years	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	Outyears	Total
FY 2016	TEC	35,218						TBD	TBD
	OPC	5,000						TBD	TBD
	TPC	40,218						TBD	TBD
FY 2017	TEC	37,570						TBD	TBD
	OPC	5,000						TBD	TBD
	TPC	42,570						TBD	TBD
FY 2018	TEC	83,750						TBD	TBD
	OPC	10,500						TBD	TBD
	TPC	94,250						TBD	TBD
FY 2019	TEC	83,750	84,212					TBD	TBD
	OPC	10,500	5,000					TBD	TBD
	TPC	94,250	89,212					TBD	TBD
FY 2020	TEC	123,750	84,212	53,354				0	261,316
	OPC	10,500	3,500	4,700				0	26,469
	TPC	134,250	87,712	58,054				0	287,785
FY 2021	TEC	123,750	84,212	53,354	0			0	261,316
	OPC	10,500	3,500	4,700	7,769			0	26,469
	TPC	134,250	87,712	58,054	7,769			0	287,785
FY 2022	TEC	123,750	84,212	53,354	27,231	50,000		TBD	TBD
	OPC	10,500	3,500	4,700	7,769	5,000		TBD	TBD
	TPC	134,250	87,712	58,054	35,000	55,000		TBD	TBD
FY2023	TEC	123,750	84,212	58,054	35,000	58,000	50,300	TBD	TBD
	OPC	11,700	2,500	0	0	7,000	8,700	TBD	TBD
	TPC	135,450	86,712	58,054	35,000	65,000	59,000	TBD	TBD

4. Related Operations and Maintenance Funding Requirements

Start of Operation or Beneficial Occupancy (fiscal quarter or date)	TBD
Expected Useful Life (number of years)	TBD
Expected Future Start of 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	3,647	TBD	105,763
Utilities	TBD	64	TBD	1,856
<u>Maintenance & Repair</u>	TBD	287	TBD	8,323
Total	TBD	3,998	TBD	115,942

5. D&D Information

The decontamination and decommissioning removal of the Interim Ventilation System was recommended during the May 2020 Project Peer Review, is not necessary for the start-up of the new system, and portions of the mine ventilation control system are collocated with the Interim Ventilation System control system and must remain operable.

The new area being constructed in this project is replacing existing facilities.

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

6. Acquisition Approach

The current Waste Isolation Pilot Plant Management and Operating contract ends in FY 2022. A new award is expected in May 2022 with transition to begin shortly after. As with the current Management and Operating contractor, the new contractor, (to be determined), will perform the acquisition for this project, overseen by the Carlsbad Field Office. The Management and Operating contractor will be responsible for awarding and managing all subcontracts related to the project. The various acquisition and project delivery methods to include potential benefits of using a single or multiple contracts to procure materials, equipment, construction, commissioning and other project scope elements, were determined in prior Critical Decisions. At this time, all major procurements have been awarded by the Management and Operating contractor. The Management and Operating Contractor annual performance and evaluation measurement plan will include project performance metrics (award criterion and performance based incentives) on which it will be evaluated.

**15-D-412, Utility Shaft (formerly Exhaust Shaft) (CB-0080)
Waste Isolation Pilot Plant, Carlsbad, New Mexico
Project is for Design and Construction**

1. Summary, Significant Changes, and Schedule and Cost History

Summary

The combined construction Total Estimated Cost and other project costs in the FY 2023 Request for the Utility Shaft (formerly Exhaust Shaft) is \$25,000,000: \$23,173,000 for construction Total Estimated Cost and \$1,827,000 Other Project Costs. FY 2023 funds will be utilized on the shaft sinking contract and the installation of air handling equipment.

This project will sink a new 2,150 foot vertical shaft and two new horizontal drifts to the Waste Isolation Pilot Plant repository underground to support a new underground ventilation system. A Critical Decision 3A approval, signed December 19, 2018, authorized the construction of aboveground infrastructure along with procurement of a Hybrid bolter and Electric Miner. The Critical Decision 2/3 was signed June 11, 2019. The construction of the shaft is contingent upon a Class 3 permit modification request, which was submitted in August 2019 to the New Mexico Environment Department. The first Temporary Authorization was received on April 24, 2020, which allowed the shafts and drifts subcontractor to start shaft sinking on April 27, 2020. The Temporary Authorization allowed for construction of the shaft to proceed for 180 days through October 24, 2020. A request for the reissuance of the Temporary Authorization for an additional 180 days was denied by the New Mexico Environment Department on November 18, 2020, which temporarily halted shaft sinking construction activities until the Class 3 permit modification request process concluded. Minimal work was allowed to maintain the integrity of the shaft at the excavated depth and preventative maintenance on equipment. Work on the Air Intake Shaft Exhaust Shaft sub-project continued. The Class 3 permit modification request was approved by the New Mexico Environment Department on October 27, 2021, with an effective date of November 27, 2021.

The most recent approved DOE Order 413.3B critical decision is Critical Decision 2/3, *Approve Project Performance Baseline/Approve Start of Construction*, which was approved on June 11, 2019, with a Performance Baseline Total Project Cost of \$196,985,000 Critical Decision 4, *Approve Project Completion*, is project for Q1 FY 2024 (at an 85% Confidence Level). The project achieved Critical Decision 3A, *Approve Long-Lead Procurement, and Site Preparations*, in the first quarter of FY 2019.

A Level 3 Certified Federal Project Director is assigned to the project.

Significant Changes

This Construction Project Data Sheet is an update of the FY 2022 Construction Project Data Sheet and does not include a new start for the budget year.

As a result of the New Mexico Environmental Department denial of the reissuance of the Temporary Authorization, in which COVID-19 was a significant factor cited, it is expected that the Total Project Cost and the Critical Decision 4 established for this project will be breached. A Baseline Change Proposal, based solely impacts from the Temporary Authorization denial due to COVID-19, is in the early stages of preliminary review.

Critical Milestone History

(fiscal quarter or date)

	CD-0	Conceptual Design Complete	CD-1	CD-3A	CD-2	Final Design Complete	CD-3	D&D Complete	CD-4
FY 2016	10/22/2014	3QFY2015	3QFY2015		1QFY2016	4QFY2016	TBD	N/A	TBD
FY 2017	10/22/2014	4QFY2015	1QFY2016		1QFY2018	1QFY2018	TBD	N/A	TBD
FY 2018	10/22/2014	12/10/2015	12/23/2015		2QFY2018	2QFY2018	TBD	N/A	TBD
FY 2019	10/22/2014	12/10/2015	12/23/2015		6/11/2019	2QFY2018	TBD	N/A	TBD
FY 2020	10/22/2014	12/10/2015	12/23/2015	1QFY 2019	6/11/2019	3QFY2019	3QFY2019	N/A	TBD

FY 2021	10/22/2014	12/10/2015	12/23/2015	1QFY 2019	6/11/2019	6/11/2019	6/11/2019	N/A	12/31/2023
FY 2022	10/22/2014	12/10/2015	12/23/2015	12/19/2018	6/11/2019	6/11/2019	6/11/2019	N/A	TBD
FY 2023	10/22/2014	12/10/2015	12/23/2015	12/19/2018	6/11/2019	6/11/2019	6/11/2019	N/A	TBD ^a

^a Baseline Change Proposal is under review.

CD-0—Approve Mission Need

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-3A – Approve Long-lead Procurements and Site Preparation

CD-3 – Approve Start of Construction

Decontamination and Decommissioning Complete - Completion of Decontamination and Decommissioning work (see Section 5)

CD-4 – Approve Start of Operations or Project Completion

Project Cost History

(Dollars in Thousands)

	TEC, Design	TEC, Construction	TEC, Total	OPC Except D&D	OPC, D&D	OPC, Total	TPC
FY 2016	TBD	TBD	TBD	TBD	N/A	TBD	TBD
FY 2017	TBD	TBD	TBD	TBD	N/A	TBD	TBD
FY 2018	TBD	TBD	TBD	TBD	N/A	TBD	TBD
FY 2019	14,033	TBD	TBD	TBD	N/A	TBD	TBD
FY 2020	7,034	TBD	TBD	TBD	N/A	TBD	TBD
FY 2021	7,034	182,086	189,120	7,865	N/A	7,865	196,985
FY 2022	7,034	TBD	TBD	TBD	N/A	TBD	TBD
FY 2023 ^a	TBD	TBD	TBD	TBD	N/A	TBD	TBD

^a A Baseline Change Proposal is under review.

2. Project Scope and Justification

Scope

Design and construct a new utility shaft to provide for additional airflow to the underground. This capability, when established, will enable potential future capabilities including: salt hoists, waste emplacement, material handling, transporting personnel, and emergency egress.

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 suspended operations, leading to impacts to ongoing transuranic waste disposition efforts across the DOE complex, and 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 habitability standards for the worker and meet surface environmental protection needs will delay resumption of Waste Isolation Pilot Plant normal operations and compromise the EM cleanup mission and the National Nuclear Security Administration’s national security mission. The underground ventilation system is paramount to providing safe underground working conditions.

This 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*.

Key Performance Parameters

The Threshold Key Performance Parameters represent the acceptable performance that the project must achieve. Achievement of the Threshold Key Performance Parameters will be a prerequisite for approval of Critical Decision 4, Project Completion.

Performance Measure	Threshold
Exhaust air flow volume	Provide an unfiltered exhaust pathway for mining dust at 150,000 cubic feet per minute ventilation flow rate through the new exhaust stack at 0.35 inches water gauge.
Intake air flow volume	Provide a minimum of 520,000 cubic feet per minute of intake ventilation flow at 4.5 inches water gauge, for each individual fan to the new air intake shaft (Shaft Number 5) for the underground repository.

3. Project Cost and Schedule

Financial Schedule

(Dollars in Thousands)

	Budget Authority (Appropriations)	Obligations	Costs
Total Estimated Cost (TEC)			
Design			
FY 2015 ^a	4,000	4,000	0
FY 2016	3,034	3,034	207
FY 2017	0	0	5,848
FY 2018	0	0	979
Total, Design	7,034	7,034	7,034
Construction			
FY 2016	4,466	4,466	0
FY 2017	30,000	30,000	0
FY 2018	19,600	19,600	0
FY 2019	1,000	1,000	22,681
FY 2020	44,500	44,500	45,489
FY 2021	53,521	53,512	55,421
FY 2022	23,173	23,173	53,495
FY 2023	23,173	23,173	TBD
Outyears ^b	TBD	TBD	TBD
Total, Construction	TBD	TBD	TBD

Total Estimated Cost (TEC)			
FY 2015	4,000	4,000	0
FY 2016	7,500	7,500	207
FY 2017	30,000	30,000	5,848
FY 2018	19,600	19,600	979
FY 2019	1,000	1,000	22,681
FY 2020	44,500	44,500	45,489
FY 2021	53,512	53,512	55,421
FY 2022	23,173	23,173	53,495
FY 2023	23,173	23,173	TBD
Outyears ^b	TBD	TBD	TBD
Total, TEC ^b	TBD	TBD	TBD

Other Project Cost (OPC)			
FY 2014	0	0	0
FY 2015	0	0	0
FY 2016	0	0	0
FY 2017	1,500	1,500	66
FY 2018	1,900	1,900	1,563
FY 2019	600	600	2,367
FY 2020	0	0	1,271
FY 2021	1,488	1,488	648
FY 2022	1,827	1,827	900
FY 2023	1,827	1,827	200
Outyears ^b	0	0	850
Total, OPC ^b	TBD	TBD	TBD

Total Project Costs			
FY 2014	0	0	0
FY 2015	4,000	4,000	0
FY 2016	7,500	7,500	207
FY 2017	31,500	31,500	5,914
FY 2018	21,500	21,500	2,542
FY 2019	1,600	1,600	25,048
FY 2020	44,500	44,500	46,760
FY 2021	55,000	55,000	56,069
FY 2022	25,000	25,000	54,395
FY 2023	25,000	25,000	TBD
Outyears ^b	TBD	TBD	TBD
Total, TPC ^b	TBD	TBD	TBD

^a The FY 2015 Omnibus Appropriations Bill appropriated \$4,000,000 in construction funding for this project.

^b A Baseline Change Proposal is under review.

Details of Project Cost Estimate

(Dollars in Thousands)

	Current Total Estimate ^a	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design			
Design	7,034	7,034	7,034
Contingency	0	0	0
Total, Design	7,034	7,034	7,034
Construction			
Site Work	30,935	30,935	30,935
Long-lead Equipment	5,974	5,974	5,974
Construction	TBD	113,302	113,302
Contingency	TBD	31,875	31,875
Total, Construction	TBD	182,086	182,086
Total, TEC	TBD	189,120	189,120
Contingency, TEC	TBD	31,875	31,875
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning	0	0	0
Conceptual Design	0	0	0
Independent Reviews & Estimates	TBD	1,488	1,488
Contingency	TBD	2,868	2,868
Other OPC	TBD	3,509	3,509
Total, OPC except D&D	TBD	7,865	7,865
Total, OPC	TBD	7,865	7,865
Contingency, OPC	TBD	2,868	2,868
Total, TPC	TBD	196,985	196,985
Total, Contingency	TBD	34,743	34,743

^a A Baseline Change Proposal is under review.

Schedule of Appropriation Requests

(Dollars in Thousands)

Request		Prior Years	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	Outyears ^a	Total ^b
FY 2016	TEC	11,500							TBD
	OPC	2,000							TBD
	TPC	13,500							TBD
FY 2017	TEC	14,033							TBD
	OPC	2,000							TBD
	TPC	16,033							TBD
FY 2018	TEC	61,100							TBD
	OPC	5,400							TBD
	TPC	66,500							TBD

Request		Prior Years	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	Outyears ^a	Total ^b
FY 2019	TEC	61,100	1,000						TBD
	OPC	5,400	638						TBD
	TPC	66,500	1,638						TBD
FY 2020	TEC	61,100	1,000	44,500					TBD
	OPC	5,400	638	0					TBD
	TPC	66,500	1,638	44,500					TBD
FY 2021	TEC	61,100	1,000	44,500	50,000			0	189,120
	OPC	5,400	638	0	0			0	7,865
	TPC	66,500	1,638	44,500	50,000			0	196,985
FY 2022	TEC	61,100	1,000	44,500	55,000	23,173		TBD	TBD
	OPC	5,400	638	0	0	1,827		TBD	7,865
	TPC	66,500	1,638	44,500	55,000	25,000		TBD	TBD
FY 2023	TEC	61,100	1,000	44,500	55,000	23,173	23,173	TBD	TBD
	OPC	3,400	600	0	0	1,827	1,827	TBD	TBD
	TPC	64,500	1,600	44,500	55,000	25,000	25,000	TBD	TBD

^{a,b} A Baseline Change Proposal is under review.

4. Related Operations and Maintenance Funding Requirements

Start of Operation or Beneficial Occupancy (fiscal quarter or date)	TBD ^a
Expected Useful Life (number of years)	32
Expected Future Start of decontamination and decommissioning of this capital asset (fiscal quarter)	FY 2056

^a Start of Operation will be updated upon approval of Baseline Change Proposal.

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 ^b	471	TBD ^b	15,083
Utilities	TBD ^b	348	TBD ^b	11,128
<u>Maintenance & Repair</u>	TBD ^b	305	TBD ^b	9,765
Total	TBD^b	1,124	TBD^b	35,976

5. Decontamination and Decommissioning Information

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

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

6. Acquisition Approach

The Waste Isolation Pilot Plant Management and Operating Contractor, (to be determined), will perform the acquisition for this project, overseen by the Carlsbad Field Office. The Management and Operating Contractor will be responsible for awarding and managing all subcontracts related to the project. The various acquisition and project delivery methods to include potential benefits of using a single or multiple contracts to procure materials, equipment, construction, commissioning and other project scope elements, were determined in prior Critical Decisions. The Management and Operating Contractor's annual performance and evaluation measurement plan will include project performance metrics (award criterion and performance based incentives) on which it will be evaluated.

**21-D-401, Hoisting Capability Project (CB-0080)
Waste Isolation Pilot Plant, Carlsbad, New Mexico
Project is for Design and Construction**

1. Summary, Significant Changes, and Schedule and Cost History

Summary

The combined construction Total Estimated Cost and other project costs in FY 2023 Request for the Hoisting Capability is \$0: \$0 for construction and \$0 other project costs.

The most recent Department of Energy (DOE) Order 413.3B, *Program and Project Management for the Acquisition of Capital Assets*, approved Critical Decision is Critical Decision 0, *Approve Mission Need*, which was approved on February 7, 2020, with a Rough-Order of Magnitude cost range between \$88,000,000 and \$200,000,000 with a Critical Decision 4, *Project Completion*, in FY 2025. The project was placed on hold status on October 8, 2021, and is planning to resume work towards Critical Decision 1 in FY 2023.

A Certified Federal Project Director is assigned to the Project.

Significant Changes

This Construction Project Data Sheet is an update of the FY 2021 Construction Project Data Sheet and does not include a new start for the budget year. An FY 2022 Construction Project Data Sheet was not submitted due to the project being on hold.

This project will provide safe, efficient, and reliable hoisting for mined salt, equipment, personnel, and provide backup capability for waste hoist operations (excluding waste transport) to allow the facility to continue to operate more efficiently and safely to meet the transuranic waste disposal mission.

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 2021	02/7/2020	TBD	TBD	TBD	TBD	TBD	N/A	TBD
FY 2023	02/7/2020	TBD	TBD	TBD	TBD	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 Project Performance Baseline

Final Design Complete - Estimated date the project design will be completed

CD-3A – Approve Long-lead Procurements and Site Preparation

CD-3 -Approve Start of Construction

D&D Complete - Completion of D&D work (see Section 5)

**Environmental Management/
Carlsbad/21-D-401
Hoisting Capability Project**

CD-4 - Approve Start of Operations or Project Closeout

Project Cost History

(Dollars in Thousands)

	TEC, Design	TEC, Construction	TEC, Total	OPC Except D&D	OPC, D&D	OPC, Total	TPC
FY 2021	TBD	TBD	TBD	TBD	N/A	TBD	TBD
FY 2023	TBD	TBD	TBD	TBD	N/A	TBD	TBD

2. Project Scope and Justification

Scope

Design and construct a new hoisting capability to provide for multiple capabilities including: salt hoists, equipment, personnel, and provide backup capability for waste hoist operations (excluding waste transport).

Justification

Conceptual planning for additional disposal panels is underway. These additional panels along with accompanying main connecting transport and infrastructure tunnels (drifts) are required to be mined at Waste Isolation Pilot Plant to achieve the completion of the Transuranic waste disposal mission according to the Waste Isolation Pilot Plant Land Withdrawal Act volumetric limits.

Within the next few years, the current salt hoist will need a significant overhaul which could take almost a year to complete. This would impact mine operations as salt mining will be curtailed until the overhaul is complete. Also, the increased mining required for the additional panels and drifts is expected to challenge the existing WIPP hoisting systems, particularly the Salt Handling Shaft which was constructed in 1983. In addition, the proposed direction and location of the new drifts and panels is a significant distance to the west of the current repository that creates a need for an additional emergency egress from the underground repository. Specifically, the distance of the new drifts and panels from the existing hoisting systems can challenge the Mine Safety and Health Administration requirements to be at an emergency egress point for evacuation within another 30 minutes (total one hour from time of event to all personnel evacuated).

The hoisting capability project would increase the existing salt hoisting capability and material/personnel hoist capability for “just-in-time” mining at Waste Isolation Pilot Plant where excavation, outfitting, and regulatory certification are completed a few months before actual transuranic waste disposal commences.

Failure to address hoisting capabilities would slow mining operations and ultimately waste emplacements. Addressing hoisting capabilities is also essential for mine safety and egress for personnel.

This 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*.

Key Performance Parameters

The Threshold Key Performance Parameters, represent the acceptable performance that the project must achieve. Achievement of the Threshold Key Performance Parameters will be a prerequisite for approval of Critical Decision 4, Project Completion. The Objective Key Performance Parameters represent the desired project performance and will be defined at Critical Decision 2.

Performance Measure	Threshold	Objective
TBD	TBD	TBD

3. Project Cost and Schedule

Financial Schedule

(Dollars in Thousands)

Budget Authority (Appropriations)	Obligations	Costs
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Total Estimated Cost (TEC)

Design

FY 2021	10,000	0	0
FY 2022	0	0	0
FY 2023	0	0	0
Outyears	0	TBD	TBD
Total, Design	10,000	TBD	TBD

Construction

FY 2021	0	0	0
FY 2022	0	0	0
FY 2023	0	0	0
Outyears	TBD	TBD	TBD
Total, Construction	TBD	TBD	TBD

Total Estimated Cost (TEC)

FY 2021	10,000	0	0
FY 2022	0	0	0
FY 2023	0	0	0
Outyears	TBD	TBD	TBD
Total, TEC	TBD	TBD	TBD

Other Project Cost (OPC)

FY 2021	0	0	0
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FY 2022	0	0	0
FY 2023	0	0	0
Outyears	TBD	TBD	TBD
Total, OPC	TBD	TBD	TBD

Total Project Costs

FY 2021	10,000	0	0
FY 2022	0	0	0
FY 2023	0	0	0
Outyears	TBD	TBD	TBD
Total, TPC	TBD	TBD	TBD

Details of Project Cost Estimate

(Dollars in Thousands)

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

Design

Design	10,000	N/A	TBD
Contingency	TBD	N/A	TBD
Total, Design	10,000	N/A	TBD

Construction

Site Work	TBD	N/A	TBD
Long-lead Equipment	TBD	N/A	TBD
Construction	TBD	N/A	TBD
Contingency	TBD	N/A	TBD
Total, Construction	TBD	N/A	TBD

Total, TEC	TBD	N/A	TBD
Contingency, TEC	TBD	N/A	TBD

Other Project Cost (OPC)

OPC except D&D			
Conceptual Planning	TBD	N/A	TBD
Conceptual Design	TBD	N/A	TBD
Independent Reviews & Estimates	TBD	N/A	TBD
Contingency	TBD	N/A	TBD
Other OPC	TBD	N/A	TBD
Total, OPC except D&D	TBD	N/A	TBD
<hr/>			
Total, OPC	TBD	N/A	TBD
Contingency, OPC	TBD	N/A	TBD
<hr/>			
Total, TPC	TBD	N/A	TBD
Total, Contingency	TBD	N/A	TBD

Schedule of Appropriation Requests

(Dollars in Thousands)

Request		FY 2021	FY 2022	FY 2023	Outyears	Total
FY 2021	TEC	10,000				TBD
	OPC	0				TBD
	TPC	10,000				TBD
FY 2022	TEC	10,000	0			TBD
	OPC	0	0			TBD
	TPC	10,000	0			TBD
FY 2023	TEC	10,000	0	0	TBD	TBD
	OPC	0	0	0	TBD	TBD
	TPC	10,000	0	0	TBD	TBD

4. Related Operations and Maintenance Funding Requirements

Start of Operation or Beneficial Occupancy (fiscal quarter or date)	TBD
Expected Useful Life (number of years)	TBD
Expected Future Start of 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

5. Decontamination and Decommissioning Information

This project will design and construct a new hoisting capability for the Waste Isolation Pilot Plant repository. There is no cost estimated for decontamination and decommissioning in this construction project.

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

6. Acquisition Approach

Various alternatives will need to be considered before an acquisition approach is solidified. Prior to Critical Decision 1, an Acquisition Strategy will be developed in order to evaluate and make informed decisions on the proper acquisition approach.

A potential approach that may be considered, is to utilize the Waste Isolation Pilot Plant Management and Operating Contractor to perform the acquisition for the project. The Management and Operating Contractor would be responsible for awarding and managing all subcontracts related to the project. The Acquisition Strategy will evaluate various acquisition and project delivery methods prior to achieving Critical Decision 1 and potential benefits of using single or multiple contracts to procure materials, equipment, construction, commissioning and other project scope elements.

Idaho

Overview

The Idaho Site supports the Department's cleanup activities to address the environmental legacy that resulted from decades of nuclear weapons production and government-sponsored nuclear energy research. 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 nuclear fuel and high-level radioactive waste from Idaho.

The Idaho Cleanup Project has achieved significant risk reduction in exhuming and processing radioactive waste for off-site disposition; deactivating and decommissioning excess facilities, remediating contaminated soils, and transferring spent nuclear fuel from wet to dry storage at the Idaho Nuclear Technology and Engineering Center. Near-term remaining work includes addressing remaining liquid tank waste; processing of stored legacy remote-handled and contact-handled transuranic waste, Radioactive Waste Management Complex Resource Conservation and Recovery Act closure and initiation of demolition and dismantlement, treatment of sodium bearing waste, continuing progress for capping the Subsurface Disposal Area, and placement of all nuclear materials in safe storage ready for disposal.

Longer-term work scope will include completion of packaging, certification and shipping of transuranic waste to the Waste Isolation Pilot Plant; calcine waste disposition; demolition and dismantlement of remaining excess facilities; completing Comprehensive Environmental Response, Compensation and Liability Act Record of Decision cleanup requirements, including Test Area North groundwater remediation and closure of the tank farm; installing final caps; maintaining long-term stewardship functions; and making legacy spent nuclear fuel road ready for final dispositioning.

Direct maintenance and repair at the Idaho Site is estimated to be \$26,642,000 in FY 2023.

Highlights of the FY 2023 Budget Request

The funding request continues progress in characterizing, packaging and shipping stored contact-handled and remote-handled transuranic waste. The request also continues processing, characterizing, packaging and shipping mixed low-level radioactive waste and remote-handled mixed low-level radioactive waste to off-site disposal facilities. The funding request completes treatment of contact handled sludge waste and continues the deactivation and decommissioning activities at the Radioactive Waste Management Complex as part of Resource Conservation & Recovery Act closure activities. The request begins dismantlement and demolition activities and continues work toward the capping of the Subsurface Disposal Area.

The funding request continues hot operation of the Integrated Waste Treatment Unit to treat the sodium-bearing tank waste. Final plant modifications are underway in preparation for radiological operations in FY 2022.

This request supports the beginning of construction for the Idaho Comprehensive Environmental Response, Compensation, and Liability Act Disposal Facility Landfill Disposal Cell and Evaporation Pond Project.

This request also supports spent nuclear fuel activities such as continued progress to meet the Idaho Settlement Agreement milestone of moving all spent nuclear fuel out of wet storage by 2023. This includes, transferring the final fuel type out of Chemical Processing Plant Building-666 and continue design and engineering work for an interim spent fuel staging project.

The request supports progress toward Critical Decision 1 for the Calcine Disposition Project. The Calcine Disposition Project manages calcined high-level waste stored at the Idaho Nuclear Technology and Engineering Center and prepares it for final disposition.

This request continues stakeholder outreach and Tribal consultation on the Justice40 Initiative.

FY 2022 - 2023 Key Milestones/Outlook

The following are the Idaho Cleanup Projects' regulatory milestones:

- (September 2022) Sodium Bearing Waste Treatment Facility-Commence Operations and fill one canister.
- (September 2022) Complete treatment of Idaho Settlement Agreement (Original Volume) Transuranic Contaminated Waste (sludge).
- (September 2022) Certify 25 percent of remaining Contact-Handled Transuranic Waste.
- (December 2022) Sodium Bearing Waste Treatment Facility Complete 100th canister (September 2022) Certify 25 percent of remaining Contact-Handled Transuranic Waste.
- (December 2022) Allocate to and make from the State of Idaho 55 percent (three year running average) of all transuranic waste shipments received at Waste Isolation Pilot Plant.
- (2022) Ship any transuranic retrieved from the Subsurface Disposal Area after December 31, 2017 within 365 days of the date of retrieval.
- (June 2023) Ship Idaho Settlement Agreement (Original Volume) Transuranic Contaminated Waste Reclassified as Mixed Low-Level Waste (sludge waste).
- (September 2023) Sodium Bearing Waste Treatment Facility Complete 15 percent treatment (128,095 gal).
- (December 2023) Allocate to and make from the State of Idaho 55 percent (three year running average) of all transuranic waste shipments received at Waste Isolation Pilot Plant.
- (2023) Ship any transuranic retrieved from the Subsurface Disposal Area after December 31, 2017 within 365 days of the date of retrieval.

Regulatory Framework

There are two primary regulators of the Idaho National Laboratory 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 Installations containing Three Mile Island fuel debris and some Fort St. Vrain spent nuclear fuel. Six primary compliance agreements, amendments and consent orders executed between 1991 and 2019 govern cleanup work at the Idaho National Laboratory Site. Those six agreements encompass the majority of the cleanup requirements and commitments. The six primary agreements are:

1. Federal Facility Agreement and Consent Order (1991) – DOE/ Environmental Protection Agency / Department
2. of Environmental Quality
3. Notice of Non-Compliance Consent Order (1992) – DOE/Department of Environmental Quality
4. Idaho Settlement Agreement (1995) – DOE/State of Idaho/United States Navy
5. Colorado Agreement (1996) – DOE/State of Colorado
6. Site Treatment Plan – Prepared by the Idaho National Laboratory Site/Enforceable by State of Idaho
7. Section 3116 of the Ronald W. Reagan National Defense Authorization Act of FY 2005 (Public Law 108-375)

Contractual Framework

As of January 1, 2022, the Idaho Cleanup Project is being managed by the Idaho Environmental Coalition, LLC. The program planning and contract management at the Idaho Cleanup Project will be conducted primarily under a new end state Indefinite-Delivery/Indefinite-Quantity Contract under which Cost-Reimbursement and/or Fixed-Priced task orders will be issued. The end state contract will have a ten (10) year ordering period with the potential to issue a not-to-exceed five (5) year task order prior to the end of the contract ordering period. The estimated value of the new end state contract is \$6.4 billion.

In addition, physical security services at Fort St. Vrain in Colorado are managed by Protection Strategies Incorporated under a new Time and Materials contract and a service-disabled veteran owned small business set-aside with a period of performance of 5 years and an estimated value of \$25 million.

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 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 the Waste Isolation Pilot Plant and shipping assets (containers, tractors, trailers and drivers, and shipping schedules), for legacy transuranic waste.
- Start-up challenges and associated delays in treating liquid sodium bearing tank waste at the first-of-a-kind Integrated Waste Treatment Unit.
- Safe and compliant storage of high-level radioactive waste (calcine) and spent nuclear fuel.
- Off-site disposition of the high-level radioactive waste (calcine) and spent nuclear fuel.
- Development and documentation of the technical and legal basis to disposition treated Sodium Bearing Waste.
- Availability of adequate space in the Idaho Comprehensive Disposal Facility to support demolition and dismantlement scope.

Idaho

Funding (\$K)

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted	FY 2023 Request vs FY 2021 Enacted (%)
Defense Environmental Cleanup					
Idaho National Laboratory					
Idaho Cleanup and Waste Disposition					
ID-0012B-D / SNF Stabilization and Disposition-2012 (Defense)					
Operating	29,393	29,393	37,245	+7,852	+27%
Construction					
22-D-403: Idaho Spent Nuclear Fuel Staging Facility, ID (ID-0012B-D)	0	0	8,000	+8,000	+100%
	29,393	29,393	45,245	+15,852	+54%
ID-0013 / Solid Waste Stabilization and Disposition	181,186	181,186	107,576	-73,610	-41%
ID-0014B / Radioactive Liquid Tank Waste Stabilization and Disposition-2012					
Operating	181,500	181,500	117,150	-64,350	-35%
Construction					
23-D-402: Idaho Calcine Construction (ID-0012B-D)	0	0	10,000	+10,000	+100%
	181,500	181,500	127,150	-54,350	-30%
ID-0030B / Soil and Water Remediation-2012					
Operating	37,921	37,921	39,248	+1,327	+4%
Construction					
22-D-404: Additional ICDF Landfill Disposal Cell and Evaporation Ponds Project (ID-0030B)	0	0	8,000	+8,000	+100%
	37,921	37,921	47,248	+9,327	+25%
ID-0040 / Idaho Demolition and Dismantlement	0	0	49,439	+49,439	+100%
Subtotal, Idaho Cleanup and Waste Disposition	430,000	430,000	376,658	-53,342	-12%
Idaho Community and Regulatory Support					
ID-0100 / Idaho Community and Regulatory Support	3,500	3,500	2,705	-795	-23%
Total, Idaho National Laboratory	433,500	433,500	379,363	-54,137	-12%

Non-Defense Environmental Cleanup

Small Sites

Idaho National Laboratory

**Environmental Management/
Idaho**

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted	FY 2023 Request vs FY 2021 Enacted (%)
ID-0012B-N / SNF Stabilization and Disposition-2012 (Non-Defense)	11,000	11,000	11,220	+220	+2%
Total, Idaho	444,500	444,500	390,583	-53,917	-12%

Idaho
Explanation of Major Changes (\$K)

FY 2021 Enacted	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted
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Defense Environmental Cleanup

Idaho National Laboratory

Idaho Cleanup and Waste Disposition

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

- The increase reflects funding requested to support continued design efforts for a Spent Nuclear Fuel Staging Facility. In addition, the increase ensures progress toward achievement of the December 31, 2023, wet to dry Spent Nuclear Fuel milestone.

29,393 45,245 +15,852

ID-0013 / Solid Waste Stabilization and Disposition

- The decrease reflects a reduction in Radioactive Waste Management Complex infrastructure support and Resource Conservation and Recovery Act closure as waste processing progresses and facilities transition from Resource Conservation and Recovery Act closure to demolition and dismantlement activities (PBS ID-0040).

181,186 107,576 -73,610

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

- Decrease reflects the transition of the Integrated Waste Treatment Unit outage scope to hot operations and completion of projects to ensure infrastructure related facilities long term viability. Within the overall decrease, there is an increase related to post Critical Decision-0 activities and activities to support Critical Decision-1 for the Calcine Disposition project.

181,500 127,150 -54,350

ID-0030B / Soil and Water Remediation-2012

- The net increase reflects a decrease related to exhumation completion and a transition of Resource Conservation and Recovery Act closure and Comprehensive Environmental Response, Compensation and Liability Act activities to dismantlement and demolition of the exhumation facilities and associated utilities. This is offset with an increase in scope to begin activities for the Subsurface Disposal Area Cap construction.

37,921 47,248 +9,327

ID-0040 / Idaho Demolition and Dismantlement

- The increase reflects the scope transition from Resource Conservation and Recovery Act closure of multiple facilities at the Radioactive Waste Management Complex to dismantlement and demolition of those facilities (PBS ID-0013/ID-0030B to PBS ID-0040).

0 49,439 +49,439

Idaho Community and Regulatory Support

ID-0100 / Idaho Community and Regulatory Support

- No significant change.

3,500 2,705 -795

**Environmental Management/
Idaho**

FY 2021 Enacted	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted
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Non-Defense Environmental Cleanup

Small Sites

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

- No significant change.

Total, Idaho	444,500	390,583	-53,917
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SNF Stabilization and Disposition-2012 (Defense)

Overview

This Project Baseline Summary 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 nuclear fuel at the Idaho Site and in Colorado. The EM plan includes the receipt of approximately 28 metric tons of spent nuclear fuel from off-site locations, including Foreign and Domestic Research Reactor spent nuclear fuel, from FY 1998 through disposition.

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

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
\$29,393,000	\$45,245,000	+\$15,852,000
<ul style="list-style-type: none"> • Maintained all dry spent (used) nuclear fuel storage facilities. • Maintained the Chemical Processing Plant building-666 and 603 with accompanying spent (used) nuclear fuel. • Supported the transfer of spent fuels to various locations on site. The major fuel transfer activities include the following: <ul style="list-style-type: none"> o Retrieve Experimental Breeder Reactor II fuel from wet storage for transfer to the Materials and Fuels Complex. o Retrieve Advanced Test Reactor fuel from wet storage for placement into dry storage. 	<ul style="list-style-type: none"> • Maintain all dry spent nuclear fuel storage facilities with accompanying spent nuclear fuel in a safe and secure state. • Maintain the wet storage facility Chemical Processing Plant building-666 and dry storage facility Chemical Processing Plant Building-603, with accompanying spent nuclear fuel in a safe and secure state. • Retrieve Experimental Breeder Reactor II fuel from wet storage for transfer to the Materials and Fuels Complex. • Receive and store up to 15 shipments of Advanced Test Reactor spent nuclear fuel. • Plan for receipt of foreign and domestic research reactor spent nuclear fuel from off-site. 	<ul style="list-style-type: none"> • The increase reflects funding requested to support continued design efforts for a Spent Nuclear Fuel Staging Facility. In addition, the increase ensures progress toward achievement of the December 31, 2023, wet to dry Spent Nuclear Fuel milestone.

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- o Maintained readiness to receive and store up to 15 shipments of Advanced Test Reactor spent nuclear fuel.
 - o Planned for receipt of foreign and domestic research reactor spent nuclear fuel from off-site.
 - o Continued preparation activities to transfer spent fuel at Chemical Processing Plant 749 from 1st generation vaults to second generation vaults due to hydrogen generation to support stable, long-term storage.
 - Continue to perform transfer of spent fuel at Chemical Processing Plant 749 from 1st generation vaults to second generation vaults due to hydrogen generation to support stable, long-term storage.
 - Begin engineering and conceptual design work and obtain Critical Decision 1 approval for Idaho Spent Nuclear Fuel Staging Facility.
 - Begin re-evaluation of Critical Decision-0 documentation and to determine path forward for Critical Decision-1 for the Idaho Spent Fuel Packaging Facility Project.

Solid Waste Stabilization and Disposition

Overview

This Project Baseline Summary can be found within the Defense Environmental Cleanup appropriation.

This waste treatment and disposal activity dispositions stored transuranic waste, low-level radioactive waste, Resource Conservation and Recovery Act hazardous waste, and mixed low-level radioactive waste in compliance with the Idaho Settlement Agreement requirements; closes on-site low-level radioactive 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.

Treatment, certification, and shipping of transuranic waste for disposal at the Waste Isolation Pilot Plant, and disposal and shipment of mixed low-level radioactive waste for disposal will continue. The inventory of certified transuranic waste will be safely and compliantly stored at the Idaho Site pending shipment to the Waste Isolation Pilot Plant.

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

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
\$181,186,000	\$107,576,000	-\$73,610,000
<ul style="list-style-type: none"> • Provided for site-wide environmental compliance and oversight. • Retrieved mixed low-level waste/low-level waste from the transuranic waste storage area. • Maintained and operated 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. 	<ul style="list-style-type: none"> • Provide for site-wide environmental compliance and oversight. • 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. 	<ul style="list-style-type: none"> • The decrease reflects a reduction in Radioactive Waste Management Complex infrastructure support and Resource Conservation and Recovery Act closure as waste processing progresses and facilities transition from Resource Conservation and Recovery Act closure to demolition and dismantlement activities (PBS ID-0040).

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- Met requirements of the Idaho Settlement Agreement and Site Treatment Plan by repackaging and characterizing remote-handled transuranic waste at the Idaho Nuclear Technology and Engineering Center and contact-handled transuranic waste at the Advanced Mixed Waste Treatment Project in preparation for shipment to the Waste Isolation Pilot Plant.
 - Processed approximately 4,500 cubic meters of contact-handled transuranic waste to prepare it for disposal at offsite facilities.
 - Completed treatment of sodium contaminated remote-handled legacy transuranic waste.
 - Maintained capabilities to receive, repackage, and characterize contact-handled transuranic waste from other DOE sites and ship offsite within a one-year timeframe.
 - Treated and disposed mixed low-level and low-level waste offsite.
 - Provided for increased storage of processed and certified transuranic waste pending the resumption of operations at and shipments to the Waste Isolation Pilot Plant.
 - Characterized, packaged, certified, temporarily stored, and initiated shipments of transuranic waste to the Waste Isolation Pilot Plant.
 - Continue certifying and shipping transuranic waste to the Waste Isolation Pilot Plant.
 - Treat and dispose mixed low-level radioactive waste and low-level radioactive waste offsite.
 - Provide for storage of processed and certified transuranic waste pending shipment to the Waste Isolation Pilot Plant.
 - Continue Resource Conservation & Recovery Act closure of the Advanced Mixed Waste Treatment Plant.
 - Characterize, package, and certify Remote Handled transuranic waste using a Carlsbad Field Office certified program.

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

Overview

This Project Baseline Summary 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 calcined high-level radioactive waste 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 for these areas.

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

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
\$181,500,000	\$127,150,000	-\$54,350,000
<ul style="list-style-type: none"> Continued development of the regulatory path forward for disposal of the sodium bearing waste treatment product. Maintained tank farm and systems necessary for safe delivery of sodium bearing waste until treatment is complete. Provided infrastructure support to Idaho Nuclear Technology and Engineering Center including utilities, maintenance and operations for the process waste system, support laboratories, and existing process facilities. Continued safe storage and management of calcine. Completed Outage J activities for the Integrated Waste Treatment Unit and continued progress toward simulant run and commissioning activities. 	<ul style="list-style-type: none"> Develop and further the regulatory path forward for disposal of the sodium bearing waste treatment product. Continue Integrated Waste Treatment Unit hot operations. Maintain tank farm and systems necessary for safe delivery of sodium bearing waste until treatment and tank closure is complete. Provide infrastructure support to Idaho Nuclear Technology and Engineering Center including utilities, maintenance and operations for the process waste system, support laboratories, existing process facilities, and support cyber security improvements. Provide engineering support for the retrieval and transfer of calcine. Continue with post Critical Decision – 0 and pre Critical Decision 1 activities for the Calcine Disposition Project. 	<ul style="list-style-type: none"> Decrease reflects the transition of the Integrated Waste Treatment Unit outage scope to hot operations and completion of projects to ensure infrastructure related facilities long term viability. Within the overall decrease, there is an increase related to post Critical Decision-0 activities and activities to support Critical Decision-1 for the Calcine Disposition project.

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

Overview

This Project Baseline Summary 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. 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 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
\$37,921,000	\$47,248,000	+\$9,327,000
<ul style="list-style-type: none"> • Provided 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. • Continued 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. • Maintained 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). • Implemented the Comprehensive Environmental Response, Compensation, and Liability Act Record of Decision for the Waste 	<ul style="list-style-type: none"> • Provide risk reduction through implementation of the Comprehensive Environmental Response, Compensation, and Liability Act Record of Decision for buried transuranic waste at the Radioactive Waste Management Complex subsurface disposal area. • Disposition of transuranic buried waste. • Maintain the remedies at Test Reactor Area; Central Facilities Area; Power Burst Facility/Auxiliary Reactor Area; and Experimental Breeder Reactor/BORAX. • Implement the Comprehensive Environmental Response, Compensation, and Liability Act Record of Decision for Idaho Nuclear Technology and Engineering Center tank farm soils and groundwater. • Implement the Comprehensive Environmental Response, Compensation, and Liability Act Record of Decision for TAN Groundwater. • Implement the Comprehensive Environmental Response, Compensation, and Liability Act 	<ul style="list-style-type: none"> • The net increase reflects a decrease related to exhumation completion and a transition of Resource Conservation and Recovery Act closure and Comprehensive Environmental Response, Compensation and Liability Act activities to dismantlement and demolition of the exhumation facilities and associated utilities. This is offset with an increase in scope to begin activities for the Subsurface Disposal Area Cap construction.

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- | | |
|---|---|
| <p>Area Group 3 (Operable Unit 3-14) (Idaho Nuclear Technology and Engineering Center) tank farm soils and groundwater.</p> <ul style="list-style-type: none">• Implemented the Comprehensive Environmental Response, Compensation, and Liability Act Record of Decision for Waste Area Group 1 (Operable Unit 1-07B) TAN Groundwater.• Implemented 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.• Implemented the Comprehensive Environmental Response, Compensation, and Liability Act Record of Decision for Waste Area Group 10 (Operable Unit 10-04) unexploded ordinance.• Maintained Radioactive Waste Management Complex infrastructure.• Maintained Idaho Comprehensive Environmental Response, Compensation, and Liability Act Disposal Facility operations.• Provided for site-wide environmental compliance. | <p>Record of Decision for site wide ground water, miscellaneous sites, and future sites.</p> <ul style="list-style-type: none">• Implement the Comprehensive Environmental Response, Compensation, and Liability Act Record of Decision for unexploded ordinance.• Maintain Radioactive Waste Management Complex infrastructure.• Maintain Idaho Comprehensive Environmental Response, Compensation, and Liability Act Disposal Facility operations.• Perform ground water monitoring and subsurface investigation with analysis of contaminants and transport mechanisms affecting the Snake River Aquifer.• Continue Resource Conservation and Recovery Act closure activities for Buried Waste Exhumation Facilities and transition to demolition and dismantlement activities.• Complete final design and initiate construction of the new Comprehensive Environmental Response, Compensation, and Liability Act disposal cell.• Continue activities in support of the design and construction of the Subsurface Disposal Area cap at Radioactive Waste Management Complex. |
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Idaho Community and Regulatory Support

Overview

This Project Baseline Summary 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 execution of requirement in the Federal Facility Agreement Consent Order and Environmental Oversight and Monitoring support; 2) the Idaho Site Citizens Advisory Board is chartered by the DOE as an EM Site-Specific Advisory Board; and 3) Shoshone-Bannock Tribe Agreement in Principal.

DOE acknowledges its trust responsibility to consult and work cooperatively with the Shoshone-Bannock Tribes, to exercise statutory and legal authorities to protect Tribal lands, assets, resources, and treaty rights, and will strive to fulfill this responsibility through the Agreement in Principal, DOE American Indian and Alaska Native Tribal Government Policy and other American Indian program initiatives.

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

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
\$3,500,000	\$2,705,000	-\$795,000
<ul style="list-style-type: none"> • Continued 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. • Provided grant to the State of Idaho Department of Environmental Quality. 	<ul style="list-style-type: none"> • Provide for site-wide environmental compliance and oversight including the Shoshone-Bannock Tribe Agreement in Principal. • Provide grant to the State of Idaho Department of Environmental Quality. • Provide for Citizens Advisory Board requirements. 	<ul style="list-style-type: none"> • No significant change.

Idaho Demolition and Dismantlement (PBS: ID-0040)

Overview

This Project Baseline Summary can be found within the Defense Environmental Cleanup appropriation.

The objective of this Project Baseline Summary is to perform demolition and dismantlement scope across the Idaho Site to progress toward site closure. The near-term focus of this PBS will be the closure and eventual capping of the Radioactive Waste Management Complex where buried waste exhumations are performed along with transuranic and mixed/low level waste processing for disposal. Demolition and dismantlement of excess facilities includes planning and engineering, deactivation of utilities, asbestos and other hazardous material abatement, equipment dismantlement and disposal, structure demolition, and waste disposition and related remedial actions.

Idaho Demolition and Dismantlement (PBS: ID-0040)

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
\$0	\$49,439,000	+\$49,439,000
<ul style="list-style-type: none"> No Activities 	Support decontamination and decommissioning planning activities and begin demolition and dismantlement on the following Radioactive Waste Management Complex facilities: <ul style="list-style-type: none"> Accelerated Retrieval Projects and related ancillary facilities. Transuranic Storage Area/Retrieval Enclosure and related ancillary facilities. Advanced Mixed Wasted Treatment Plant facility and related ancillary facilities. 	<ul style="list-style-type: none"> The increase reflects the scope transition from Resource Conservation and Recovery Act closure of multiple facilities at the Radioactive Waste Management Complex to dismantlement and demolition of those facilities (PBS ID-0013/ID-0030B to PBS ID-0040).

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

Overview

This Project Baseline Summary 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 Installations in accordance with license basis documents. This includes the management of spent nuclear fuel presently stored at Fort St. Vrain in Colorado and the Three Mile Island Independent Spent Fuel Storage Installation on the Idaho Site, 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 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
\$11,000,000	\$11,220,000	+\$220,000
<ul style="list-style-type: none"> • Provided 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. • Provided security for Fort St. Vrain Spent (Used) Nuclear Fuel. • Continued to operate and monitor Fort St. Vrain and Three Mile Island-2 Spent (Used) Nuclear Fuel. • Implemented Nuclear Regulatory Commission license renewal for Three Mile Island-2. • Completed facility license upgrades for Fort St. Vrain Spent (Used) Nuclear Fuel. • Initiate construction of improved personnel support facility. 	<ul style="list-style-type: none"> • 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 nuclear fuel facility. • Continue to monitor Fort St. Vrain and Three Mile Island-2 Spent nuclear fuel. • Operate and maintain systems to meet Nuclear Regulatory Commission license conditions. • Provide support to construct personnel facilities on site at Fort St Vrain. 	<ul style="list-style-type: none"> • No significant change.

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

Total	Prior Years	FY 2021 Enacted	FY 2021 Actuals	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted
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Capital Operating Expenses Summary (including (Major Items of Equipment (MIE))

Capital Equipment > \$500K (including MIE)	0	0	0	0	0	+0
Minor Construction (<\$25M)	5,526	0	2,250	836	2,250	-1,124
Total, Capital Operating Expenses	5,526	0	2,250	836	2,250	-1,224

Minor Construction (Total Estimated Cost (TEC) <\$25M)

Idaho (Direct Funded)

Shipping Capability for RH TRU Waste using Shielded Container Assemblies	1,026	0	0	0	0	+1,026
NRC Licensed SNF Storage	4,500	0	2,250	836	2,250	-2,250
Total, Idaho	5,526	0	2,250	836	2,250	-1,224
Total, Capital Summary	5,526	0	2,250	836	2,250	-1,224

Idaho
Construction Projects Summary (\$K)

	Total	Prior Years	FY 2021 Enacted	FY 2021 Actuals	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted
22-D-403 Idaho Spent Nuclear Fuel Staging Facility							
Total Estimate Cost (TEC)	TBD	0	0	0	0	7,000	+7,000
Other Project Costs (OPC)	TBD	0	0	0	0	1,000	+1,000
Total Project Cost (TPC) 22-D-403	TBD	0	0	0	0	8,000	+8,000
22-D-404 Additional ICDF Landfill Disposal Cell and Evaporation Ponds Project							
Total Estimate Cost (TEC)	TBD	0	0	0	0	5,000	+5,000
Other Project Costs (OPC)	TBD	0	0	0	0	3,000	+3,000
Total Project Cost (TPC) 22-D-404	TBD	0	0	0	0	8,000	+8,000
23-D-402 Calcine Construction							
Total Estimate Cost (TEC)	TBD	0	0	0	0	0	0
Other Project Costs (OPC)	TBD	0	0	0	0	10,000	+10,000
Total Project Cost (TPC) 23-D-402	TBD	0	0	0	0	10,000	+10,000

**22-D-403, Idaho Spent Nuclear Fuel Staging Facility
Idaho National Laboratory, Idaho Falls, Idaho
Project is for Design and Construction**

1. Summary, Significant Changes, and Schedule and Cost History

Summary

The FY 2023 Request for the Idaho Spent Nuclear Fuel Staging Facility is \$8,000,000: \$7,000,000 for design/Total Estimate Cost and \$1,000,000 other project costs. Funding in FY 2023 based on a design/build contract model which includes the design portion and project level of effort (federal and contractor project support staff).

The most recent Department of Energy (DOE) Order 413.3B, *Program and Project Management for the Acquisition of Capital Assets*, approved Critical Decision was on May 21, 2021 for Critical Decision 0, *Approve Mission Need*, with a Rough-Order of Magnitude cost range between \$119,000,000 and \$205,000,000 with a Comprehensive Environmental Response, Compensation and Liability Act 4, *Project Completion*, range between fiscal year (FY) 2025 and 2026. Critical Decision 0 was approved May 21, 2021.

A certified Federal Project Director has not yet been assigned to the Project.

Significant Changes

This Construction Project Data Sheet is an update of the FY 2022 Construction Project Data Sheet and does not represent a new start for the budget year. This project will build 100,000 square feet of storage (including the appropriate security measures) in order to close the spent nuclear fuel staging facility mission gap.

Critical Milestone History

(fiscal quarter or date)

Fiscal Year (FY)	CD-0	Conceptual Design Complete	CD-1	CD-2	Final Design Complete	CD-3	CD-4	D&D Complete
FY 2022	5/21/2021	FY 2022	TBD	TBD	TBD	TBD	TBD	TBD
FY 2023	5/21/2021	FY 2022	FY 2023	FY 2023	FY 2023	TBD	TBD	TBD

CD-0—Approve Mission Need

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-3A – Approve Long-lead Procurements and Site Preparation

CD-3 -Approve Start of Construction

**Environmental Management/
Idaho/22-D-403 Idaho Spent Nuclear
Fuel Staging Facility,
Idaho Falls, ID**

CD-4 - Approve Start of Operations or Project Completion

D&D Complete -Completion of Demolition and Dismantlement work (see Section 5)

Project Cost History

(Dollars in Thousands)

Fiscal Year (FY)	TEC Design	TEC Construction	TEC Total	OPC Except D&D	OPC, D&D	OPC Total	TPC
FY 2022	TBD	TBD	TBD	TBD	N/A	TBD	TBD
FY 2023	7,000	TBD	TBD	TBD	N/A	TBD	TBD

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

2. Project Scope and Justification

Scope

Provide the capability to support near-term and long-term spent nuclear fuel packaging efforts, and storage at the Idaho National Laboratory Site. Approximately 100,000 square feet of storage space will be required to store the estimated 200 multi-canister overpacks that will be generated from the packaging efforts.

Justification

The Department of Energy’s (DOE) Spent Nuclear Fuel Program located at the Idaho National Laboratory Site needs the capability to safely, compliantly, and efficiently store packaged Spent Nuclear Fuel. Storage is needed to support near-term and long-term Spent Nuclear Fuel packaging efforts. Storage at the Idaho National Laboratory Site will be required until the packaged Spent Nuclear Fuel is shipped out of Idaho. Storage space will be required to store the estimated 200 multi-canister overpacks that will be generated from the packaging efforts.

This 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.

Key Performance Parameters

The Threshold Key Performance Parameters represent the acceptable performance that the project must achieve. Achievement of the Threshold Key Performance Parameters will be a prerequisite for approval of Critical Decision 4, Project Completion. The Objective Key Performance Parameters represent the desired project performance and will be defined at Critical Decision 2.

Performance Measure	Threshold	Objective
Capability to efficiently store packaged Spent Nuclear Fuel at the Idaho National Laboratory	Have Capability to store up to 200 multi-canister overpacks	Efficiently store packaged Spent Nuclear Fuel at the Idaho National Laboratory

3. Project Cost and Schedule

Financial Schedule

(Dollars in Thousands)

	Budget Authority (Appropriations)	Obligations	Costs
Total Estimated Cost (TEC)			
Design			
FY 2022	0	0	0
FY 2023	7,000	7,000	7,000
Total, Design	7,000	7,000	7,000
Construction			
FY 2022	0	0	0
FY 2023	0	0	0
Outyears	TBD	TBD	TBD
Total, Construction	TBD	TBD	TBD
Total Estimated Cost (TEC)			
FY 2022	0	0	0
FY 2023	7,000	7,000	7,000
Outyears	TBD	TBD	TBD
Total, TEC	TBD	TBD	TBD
Other Project Cost (OPC)			
FY 2022	3,000	3,000	3,000
FY 2023	1,000	1,000	1,000
Outyears	TBD	TBD	TBD
Total, OPC	TBD	TBD	TBD
Total Project Costs			
FY 2022	3,000	3,000	3,000
FY 2023	8,000	8,000	8,000
Outyears	TBD	TBD	TBD
Total, TPC	TBD	TBD	TBD

Details of Project Cost Estimate

(Dollars in Thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design			
Design	5,000	N/A	N/A
Contingency	2,000	N/A	N/A
Total, Design	7,000	N/A	N/A
Construction			
Site Work	TBD	N/A	N/A
Long-lead Equipment	N/A	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
<i>Contingency, TEC</i>	TBD	N/A	N/A
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning	N/A	N/A	N/A
Conceptual Design	TBD	N/A	N/A
Independent Reviews & Estimates	N/A	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
<i>Contingency, OPC</i>	TBD	N/A	N/A
Total, TPC	TBD	N/A	N/A
<i>Total, Contingency</i>	TBD	N/A	N/A

Schedule of Appropriation Requests

(Dollars in Thousands)

Request		FY 2022	FY 2023	Outyears	Total
FY 2022	TEC	0	TBD	TBD	TBD
	OPC	3,000	TBD	TBD	TBD
	TPC	3,000	TBD	TBD	TBD
FY 2023	TEC	0	7,000	TBD	TBD
	OPC	3,000	1,000	TBD	TBD
	TPC	3,000	8,000	TBD	TBD

4. Related Operations and Maintenance Funding Requirements

Start of Operation or Beneficial Occupancy (fiscal quarter or date)	TBD
Expected Useful Life (number of years)	TBD
Expected Future Start of 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	0	0	0	0
Utilities	0	0	0	0
<u>Maintenance & Repair</u>	TBD	0	TBD	0
Total	TBD	0	TBD	0

5 Demolition and Dismantlement Information

Demolition and dismantlement of the facilities currently holding the spent nuclear fuel after this mission is completed will be a separate effort and is not included in the current mission needs. There is no cost estimated for demolition and dismantlement in this construction project.

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

6. Acquisition Approach

The acquisition approach is to use the indefinite delivery/indefinite quantity end state contracting model with new Idaho Cleanup Project contractor (contract in place January 2022).

22-D-404, Additional ICDF Landfill Disposal Cell and Evaporation Ponds Project
Idaho National Laboratory, Idaho Falls, Idaho
Project is for Design and Construction

1. Summary, Significant Changes, and Schedule and Cost History

Summary

The FY 2023 Request for the Idaho Comprehensive Environmental Response, Compensation, and Liability Act Disposal Facility Integrated Disposal Facility Cell Expansion is \$8,000,000: \$5,000,000 for design/TEC, and \$3,000,000 for other project costs. Funding in FY 2023 is based on a Design/Build contract model which includes a portion of the design and a portion of other project costs.

The most recent Department of Energy (DOE) Order 413.3B, *Program and Project Management for the Acquisition of Capital Assets*, approved Critical Decision for this project is Critical Decision 0, *Approve Mission Need*, with a Rough-Order of Magnitude cost range between \$17,000,000 and \$38,000,000 with a Critical Decision 4, *Project Completion*, in fiscal year (FY) 2025. Critical Decision 0 was approved on April 6, 2021.

A Certified Federal Project Director is not assigned to the Project.

Significant Changes

This Construction Project Data Sheet is an update of the FY 2022 Construction Project Data Sheet and does not represent a new start for the budget year.

This project will provide for the construction of an additional disposal cell and evaporation ponds to accommodate continued disposal of Comprehensive Environmental Response, Compensation, and Liability Act generated Environmental Remediation and demolition and dismantlement wastes in accordance with a Comprehensive Environmental Response, Compensation, and Liability Act Record of Decision and the Action Memorandum for General Decommissioning Activities Under the Idaho Cleanup Project. . This additional disposal capacity is required to accommodate the remaining estimated volume of Comprehensive Environmental Response, Compensation, and Liability Act and Demolition and Dismantlement waste that will be generated between 2023 and 2050 from Idaho Cleanup Project activities as well as Naval Reactor Facility activities. Accompanying evaporation ponds are required to accept the leachate that is generated from the landfills.

Critical Milestone History

(fiscal quarter or date)

Fiscal Year (FY)	CD-0	Conceptual Design Complete	CD-1	CD-2	Final Design Complete	CD-3	CD-4	Construction Complete
FY 2022	April 6, 2021	FY 2022	FY 2022	TBD	TBD	TBD	TBD	TBD
FY 2023	April 6, 2021	FY 2022	FY 2022	TBD	TBD	TBD	TBD	TBD

CD-0—Approve Mission Need

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-3A – Approve Long-lead Procurements and Site Preparation

CD-3 -Approve Start of Construction

CD-4 - Approve Start of Operations or Project Completion

D&D Complete -Completion of Demolition and Dismantlement work (see Section 5)

Project Cost History

(Dollars in Thousands)

Fiscal Year (FY)	TEC Design	TEC Construction	TEC Total	OPC Except construction	OPC D&D	OPC Total	TPC
FY 2022	TBD	TBD	TBD	TBD	N/A	TBD	TBD
FY 2023	4,000	TBD	TBD	TBD	N/A	TBD	TBD

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

2. Project Scope and Justification

Scope

Provide the capability to dispose of Comprehensive Environmental Response, Compensation, and Liability Act generated waste from Environmental Remediation and other demolition and dismantlement activities on the Idaho National Laboratory by expansion of the current Idaho Comprehensive Environmental Response, Compensation, and Liability Act disposal facility. This project will include construction of an additional disposal cell and evaporation ponds.

Justification

The mission need to construct an onsite disposal facility is established by a Comprehensive Environmental Response, Compensation, and Liability Act Record of Decision. The standard Comprehensive Environmental Response, Compensation, and Liability Act process was followed to determine the optimal cleanup decision. Onsite disposal and construction of the Idaho Comprehensive Environmental Response, Compensation, and Liability Act Disposal Facility was the selected remedy to reduce risk to human health and the environment posed by contaminated soils and debris. A summary-level description of the selected remedy from the OU 3-13 Record of Decision (DOE ID 1999) is as follows:

To implement onsite disposal of Waste Area Group 3 and other Comprehensive Environmental Response, Compensation, and Liability Act -generated wastes at the Idaho National Engineering and Environmental Laboratory [now Idaho National

**Environmental Management/
Idaho/22-D-404 ICDF Landfill
Disposal Facility, Idaho Falls, ID**

Laboratory], construction and operation of an engineered disposal facility is proposed. The Idaho Comprehensive Environmental Response, Compensation, and Liability Act Disposal Facility will be an engineered facility meeting Resource Conservation and Recovery Act Subtitle C design and construction requirements, which are the same regulations required for commercial disposal facilities.

Key Performance Parameters

The Threshold key performance parameters represent the acceptable performance that the project must achieve. Achievement of the Threshold key performance parameters will be a prerequisite for approval of Critical Decision 4, Project Completion. The Objective key performance parameters represent the desired project performance and will be defined at Critical Decision 2.

Performance Measure	Threshold	Objective
Construction completion approval by regulators	Idaho Comprehensive Environmental Response, Compensation and Liability Act Disposal cell expansion construction by FY2025	Provide for the continued disposal of Comprehensive Environmental Response, Compensation, and Liability Act generated waste from Environmental Remediation and other demolition and dismantlement activities on the Idaho National Laboratory Site

3. Project Cost and Schedule

Financial Schedule

(Dollars in Thousands)

	Budget Authority (Appropriations)	Obligations	Costs
Total Estimated Cost (TEC)			
Design			
FY 2022	3,000	3,000	3,000
FY 2023	1,000	1,000	1,000
	4,000	4,000	4,000
Construction			
FY 2022	0	0	0
FY 2023	4,000	4,000	4,000
Outyears	0	0	0
Total, Construction	24,000	24,000	24,000
Total Estimated Cost (TEC)			
FY 2022	3,000	3,000	3,000
FY 2023	5,000	5,000	5,000
Outyears	TBD	TBD	TBD

Total, TEC	TBD	TBD	TBD
Other Project Cost (OPC)			
FY 2022	2,000	2,000	2,000
FY 2023	3,000	3,000	3,000
Outyears	TBD	TBD	TBD
Total, OPC	TBD	TBD	TBD
Total Project Costs			
FY 2022	5,000	5,000	5,000
FY 2023	8,000	8,000	8,000
Outyears	TBD	TBD	TBD
Total, TPC	TBD	TBD	TBD

Details of Project Cost Estimate

(Dollars in Thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design			
Design	3,000	N/A	N/A
Contingency	1,000	N/A	N/A
Total, Design	4,000	N/A	N/A
Construction			
Site Work	N/A	N/A	N/A
Long-lead Equipment	TBD	N/A	N/A
Construction	TBD	N/A	N/A
Contingency	TBD	N/A	N/A
Total, Construction	TBD	N/A	N/A
Total, TEC	TBD	N/A	N/A
Contingency, TEC	TBD	N/A	N/A
Other Project Cost (OPC)	TBD		
OPC except D&D	TBD		
Conceptual Planning	TBD	N/A	N/A
Conceptual Design	TBD	N/A	N/A
Independent Reviews & Estimates	N/A	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
Contingency, OPC	TBD	N/A	N/A

Total, TPC	TBD	N/A	N/A
Total, Contingency	TBD	N/A	N/A

Schedule of Appropriation Requests

(Dollars in Thousands)

Request		FY 2022	FY 2023	Outyears	Total
FY 2022	TEC	3,000	0	TBD	TBD
	OPC	2,000	0	TBD	TBD
	TPC	5,000	0	TBD	TBD
FY 2023	TEC	3,000	5,000	TBD	TBD
	OPC	2,000	3,000	TBD	TBD
	TPC	5,000	8,000	TBD	TBD

4. Related Operations and Maintenance Funding Requirements

Start of Operation or Beneficial Occupancy (fiscal quarter or date)	TBD
Expected Useful Life (number of years)	TBD
Expected Future Start of 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	N/A	TBD	N/A
Utilities	TBD	N/A	TBD	N/A
<u>Maintenance & Repair</u>	TBD	N/A	TBD	N/A
Total	TBD	N/A	TBD	N/A

5. Demolition and Dismantlement Information

This project will provide the for continued disposal of Comprehensive Environmental Response, Compensation, and Liability Act generated waste from Environmental Remediation and other demolition and dismantlement activities on the Idaho National Laboratory site at the Idaho Comprehensive Environmental Response, Compensation, and Liability Act Disposal Facility. This disposal capacity is required to accommodate the remaining estimated volume of Comprehensive Environmental Response, Compensation, and Liability Act and demolition and dismantlement waste that will be generated between 2023 and 2050 from Idaho Cleanup Project activities as well as Naval Reactor Facility activities.

The location of this construction project is an environmental closure site and, consequently, is exempt from the “one-for-one” requirement.

6. Acquisition Approach

The acquisition approach is to use the indefinite delivery/indefinite quantity end state contracting model with new Idaho Cleanup Project contractor (contract in place January 2022).

**23-D-402: Idaho Calcine Construction
Idaho National Laboratory, Idaho Falls, Idaho
Project is for Design and Construction**

1. Summary, Significant Changes, and Schedule and Cost History

Summary

The FY 2023 Request for the Idaho Calcine Disposition Project is \$10,000,000: \$0 for construction and \$10,000,000 other project costs. Funding in FY 2023 includes the design portion and project level of effort to progress Critical Decision 0 documentation.

The most recent Department of Energy (DOE) Order 413.3B, *Program and Project Management for the Acquisition of Capital Assets*, approved Critical Decision is Critical Decision 0, *Approve Mission Need*, with a Rough-Order of Magnitude cost range between \$1,100,000,000 - \$1,610,000,000 with a Critical Decision 4, *Project Completion*, in fiscal year (FY) 2036. Critical Decision 0 was approved on June 29, 2007.

A Certified Federal Project Director is not assigned to the Project.

Significant Changes

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

On June 29, 2007 EM was granted Critical Decision 0, Approval of Mission Need, to determine and implement the treatment and disposition of calcine. Since that time, key assumptions and constraints have changed regarding meeting the Idaho Settlement Agreement milestone date to have calcine waste treated by December 31, 2035, including the timing for the availability of Integrated Waste Treatment Unit, storage requirements for waste packages, and expected rates of retrieval of calcine waste from the bin sets.

Critical Milestone History

(fiscal quarter or date)

	CD-0	Conceptual Design Complete	CD-1	CD-2	Final Design Complete	CD-3	CD-4	D&D Complete
FY 2023	FY 2007	TBD	TBD	TBD	TBD	TBD	TBD	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 Project Performance Baseline

Final Design Complete - Estimated date the project design will be completed

CD-3A – Approve Long-lead Procurements and Site Preparation

CD-3 -Approve Start of Construction

**Environmental Management/
Idaho/23-D-402 Idaho Calcine
Construction, Idaho Falls, ID**

FY 2023 Congressional Budget Justification

CD-4 - Approve Start of Operations or Project Closeout
D&D Complete -Completion of D&D work (see Section 5)

Project Cost History

(Dollars in Thousands)

	TEC, Design	TEC, Construction	TEC, Total	OPC Except D&D	OPC, D&D	OPC, Total	TPC
FY 2023	TBD	TBD	TBD	TBD	N/A	TBD	TBD

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

2. Project Scope and Justification

Scope

The mission of the Calcine Disposition Project is to manage, store, treat (if required), and dispose of 4,400 cubic meters of U.S. Department of Energy (DOE) high-level waste calcine stored in stainless steel bins on the Idaho National Laboratory Site.

Justification

As a result of past spent nuclear fuel reprocessing activities at the Idaho Nuclear Technology Engineering Center on the Idaho National Laboratory Site, approximately 4400 cubic meters (155,000 cubic feet or 1.2 million gallons) of granular-solid high level waste calcine was generated and is stored in six bin sets which overlie the Snake River Plain Aquifer, designated by the Environmental Protection Agency as a Sole Source Aquifer. The Idaho Settlement Agreement requires that the Department of Energy put calcine in a form suitable for shipment from Idaho by a target date of December 31, 2035. Interim milestones required a National Environmental Policy Act Record of Decision by December 31, 2009, to identify the methods that will be used to dispose of calcine including treatment (if necessary) and submission of a Resource Conservation and Recovery Act Part B permit application for the selected treatment by December 1, 2012. As a result, Environmental Management (EM) identified a need to establish the Calcine Disposition Project to determine and implement the final disposition of calcine including characterization, retrieval, treatment (if necessary), packaging, loading, onsite interim storage pending shipment out of Idaho.

In December 2009, DOE issued the Calcine Treatment Record of Decision which identified hot isostatic pressing as the preferred treatment process. In preparation for the Calcine Disposition Project Critical Decision 1, DOE conducted two Analyses of Alternatives (2016 and 2020). The respective teams were asked to evaluate the potential treatment technologies, consider risks associated with technology readiness, and evaluate any newly available disposal pathways. The most recent Analysis of Alternatives noted vitrification as the best processing option. The latest Analysis of Alternatives also identified packaging for direct disposal as the lowest cost and

technical risk option. As such the Calcine Disposition Project has continued with calcine retrieval maturation while moving forward with initiating a National Environmental Policy Act Supplement Analysis to support a revised Record of Decision for vitrification or direct disposal.

This 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*.

Key Performance Parameters

The Threshold KPPs, represent the acceptable performance that the project must achieve. Achievement of the Threshold KPPs will be a prerequisite for approval of Critical Decision 4, Project Completion. The Objective Key Performance Parameters represent the desired project performance and will be defined at Critical Decision 2.

Performance Measure	Threshold	Objective
TBD	TBD	TBD

3. Project Cost and Schedule

Financial Schedule

(Dollars in Thousands)

	Budget Authority (Appropriations)	Obligations	Costs
Total Estimated Cost (TEC)			
Design			
FY 2023	0	0	0
Outyears	TBD	TBD	TBD
Total, Design	TBD	TBD	TBD
Construction			
FY 2023	0	0	0
Outyears	TBD	TBD	TBD
Total, Construction	TBD	TBD	TBD
Total Estimated Cost (TEC)			
FY 2023	0	0	0
Outyears	TBD	TBD	TBD
Total, TEC	TBD	TBD	TBD
Other Project Cost (OPC)			
FY 2023	10,000	10,000	10,000

Outyears	TBD	TBD	TBD
Total, OPC	TBD	TBD	TBD
Total Project Costs			
FY 2023	10,000	10,000	10,000
Outyears	TBD	TBD	TBD
Total, TPC	TBD	TBD	TBD

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	TBD
Contingency	TBD	N/A	TBD
Total, Design	TBD	N/A	TBD
Construction			
Site Work	TBD	N/A	TBD
Long-lead Equipment	TBD	N/A	TBD
Construction	TBD	N/A	TBD
Contingency	TBD	N/A	TBD
Total, Construction	TBD	N/A	TBD
Total, TEC	TBD	N/A	TBD
Contingency, TEC	TBD	N/A	TBD
Other Project Cost (OPC)	TBD		
OPC except D&D	TBD		
Conceptual Planning	TBD	N/A	TBD
Conceptual Design	TBD	N/A	TBD
Independent Reviews & Contingency	TBD	N/A	TBD
Other OPC	TBD	N/A	TBD
Total, OPC except D&D	TBD	N/A	TBD
Total, OPC	TBD	N/A	TBD
Contingency, OPC	TBD	N/A	TBD
Total, TPC	TBD	N/A	TBD
Total, Contingency	TBD	N/A	TBD

Schedule of Appropriation Requests

**Environmental Management/
Idaho/23-D-402 Idaho Calcine
Construction, Idaho Falls, ID**

FY 2023 Congressional Budget Justification

(Dollars in Thousands)

Request		FY 2023	Outyears	Total
FY 2023	TEC	0	TBD	TBD
	OPC	10,000	TBD	TBD
	TPC	10,000	TBD	TBD

4. Related Operations and Maintenance Funding Requirements

Start of Operation or Beneficial Occupancy (fiscal quarter or date)	TBD
Expected Useful Life (number of years)	TBD
Expected Future Start of 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	N/A	TBD	N/A
Utilities	TBD	N/A	TBD	N/A
<u>Maintenance & Repair</u>	TBD	N/A	TBD	N/A
Total	TBD	N/A	TBD	N/A

5. Deactivation and Demolition Information

Deactivation and demolition of the facilities currently holding the calcine after this mission is completed will be a separate effort and is not included in the current mission needs. There is no cost estimated for decontamination and decommissioning in this construction project.

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

6. Acquisition Approach

The acquisition approach is to use the Indefinite Delivery/Indefinite Quantity end-state contracting model with the new Idaho Cleanup Project contractor (contract in place as of January 2022).

Oak Ridge

Overview

The Oak Ridge Office of Environmental Management supports the Department's effort to clean up the Manhattan Project and Cold War legacies on the Oak Ridge Reservation.

The Oak Ridge Office of Environmental Management manages scope within three portfolios tied to sites located within the Oak Ridge Reservation. Approximately 500,000 people live within a 30-mile radius of the Oak Ridge Reservation. The local cleanup program conducts extensive sampling and modeling to understand and track conditions, and it performs remediation projects and implements control measures to prevent the transport of contaminants off-site from past federal operations.

- The East Tennessee Technology Park site managed by the Office of Environmental Management occupies approximately 2,200 acres adjacent to the Clinch River. The Office of Environmental Management is addressing this area in compliance with the Comprehensive, Environmental, Response, Compensation and Liability Act. The site was a former gaseous diffusion plant that was shut down in 1987. Facility demolition activities are complete, marking the first time an entire uranium enrichment complex has been successfully removed in the world. Crews are currently addressing remaining soil and groundwater contamination. The site is being transitioned into a multi-use industrial park.
- The Oak Ridge National Laboratory managed by the Office of Science covers 3,300 acres and conducts multi-program energy and basic research. Historically, it supported both defense production operations and civilian energy research. Manhattan Project and Cold War era legacies co-exist with modernized laboratory facilities.
- The Y-12 National Security Complex, managed by the National Nuclear Security Administration, spans 811 acres. It began as a uranium processing facility, but now it refurbishes nuclear weapon components and serves as the nation's storehouse for uranium-235 and carries out other national security activities. Manhattan Project and Cold War era legacies co-exist with revitalized national security facilities. The Environmental Management Waste Management Facility (a Comprehensive, Environmental, Response, Compensation and Liability Act disposal facility supporting cleanup of all three sites) is adjacent to the site.

The Office of Environmental Management addresses the scope required to remediate the Manhattan Project and Cold War nuclear weapons production legacy while protecting workers, public health, and the environment. The priorities and sequencing of scope are done in accordance with the regulatory framework and milestones contained within the Oak Ridge Federal Facility Agreement, the Site Treatment Plan, and a Polychlorinated Biphenyl Federal Facilities Compliance Agreement with the United States Environmental Protection Agency and/or the State of Tennessee.

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.

Direct maintenance and repairs at Oak Ridge is estimated to be \$64,882,279 (\$60,049,364 for Oak Ridge National Laboratory and Y-12 and \$4,832,915 for East Tennessee Technology Park) in FY 2023.

Highlights of the FY 2023 Budget Request

The following represents the most significant activities for the Oak Ridge Office of Environmental Management:

- Maintaining Oak Ridge Office of Environmental Management facilities in a safe, compliant, and secure manner.
- Operating Oak Ridge Office of Environmental Management waste treatment and disposal facilities, including an on-site Comprehensive Environmental Response, Compensation, and Liability Act disposal facility and sanitary landfills adjacent to the Y-12 National Security Complex, and wastewater and gaseous waste treatment operations at Oak Ridge National Laboratory.
- Continuing cleanup of high-risk excess facilities at Oak Ridge National Laboratory and Y-12 National Security Complex.
- Continuing down-blending of uranium-233 material at Oak Ridge National Laboratory.
- Remediating building slabs, soil, and groundwater at the East Tennessee Technology Park.

- Continue processing and shipping transuranic debris waste to the Waste Isolation Pilot Plant.
- Designing and constructing a second On-Site Waste Disposal Facility, to support cleanup at the Y-12 National Security Complex and Oak Ridge National Laboratory.
- Developing mercury-related technology to support characterization, remediation, monitoring, and modeling of mercury contamination.

The FY 2023 request includes funding for one-line item construction project:

On-Site Waste Disposal Facility (\$35,000,000).

The purpose of the second On-Site Waste Disposal Facility project is to provide waste disposal capacity for demolition debris and soils from Y-12 National Security Complex and Oak Ridge National Laboratory cleanup projects once the existing disposal facility has reached capacity. This second facility will enable EM to avoid costly transportation operations and allows the program to address high-risk contaminated facilities. The request includes funding for design and other project costs.

FY 2022 and FY 2023 Key Milestones/Outlook

- (June 2022) Complete Sludge Test Area Construction.
- (September 2022) Complete demolition of Building 3026-D Facility.
- (September 2022) Complete remediation of following areas at ETPP, Exposure Units 11, 17, 20, 21, 22, 25.
- (September 2023) Complete remediation of following areas at ETPP, Exposure Units 19, 35, 42.
- (September 2023) Complete remediation of the Biology Complex area, Exposure Unit 5, at Y12.

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 on January 1, 1992. The document establishes a procedure framework and schedule for developing, implementing, and monitoring appropriate site response actions under the Comprehensive Environmental Response, Compensation, and Liability Act.
- The Oak Ridge Reservation Compliance Order was signed on September 26, 1995, by DOE and the Tennessee Department of Environment and Conservation. The document enforces 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

Oak Ridge has multiple contracts with large and small businesses to accomplish the effective and safe execution of cleanup of the Oak Ridge Reservation. The major contracts for performing/supporting environmental management cleanup at Oak Ridge include:

- The United Cleanup Oak Ridge LLC contract
 - o Scope - Environmental cleanup on the Oak Ridge Reservation including decontamination and demolition, remediation, waste treatment and disposal operations, and other environmental cleanup support activities.
 - o Period of Performance – October 26, 2021 to October 26, 2031
 - o Contract Value - \$8.3B

- o Type – Indefinite-Delivery/Indefinite-Quantity contract with cost reimbursable and/or fixed price task orders. Cost reimbursable task orders can include no fee, cost plus incentive fee, cost plus award fee and cost-plus fixed fee task orders. Task orders will define objective performance criteria for completion of End States. The term end state is defined as the specific situation, including accomplishment of completion criteria, for an environmental cleanup activity within and/or at the end of a task order period of performance, consistent with the Environmental Management End-state contract model.
- The North Wind Solutions contract
 - o Scope - Processing of Environmental Management legacy transuranic debris waste at the Transuranic Waste Processing Center.
 - o Period of Performance - 10/19/2015-10/27/22 will transition in Fiscal Year 2023 to the United Cleanup Oak Ridge LLC contract.
 - o Contract Value - \$295M.
 - o Type – The contract was awarded as a hybrid contract which consists of fixed priced contract line-item numbers for maintenance, cost reimbursable for processing and fixed unit rates for movement of containers; however, the Oak Ridge Office of Environmental Management converted the remaining options to firm-fixed price contract line-item numbers based upon the remaining work and availability of historical information.
- The Isotek Systems LLC contract
 - o Scope - Complete the disposition of Uranium-233 material stored in Building 3019 at Oak Ridge National Laboratory. The contractor has completed the direct disposition campaign and is preparing for processing the remainder of the inventory.
 - o Period of Performance - Ends December 2024
 - o Contract Value - \$811M
 - o Type - The contract, originally awarded as a cost-reimbursement type, was converted to a firm-fixed price beginning with the direct disposition campaign. It is currently processing the low-dose portion of the remaining inventory in gloveboxes, and it is scheduled to begin processing the high-dose portion of the remaining inventory in hot cells in 2022.
 - o The conversion to firm-fixed price has been a successful model for this contract and is expected to continue for the remaining options.
- The APTIM/North Wind contract
 - o Scope – Construction of the Outfall 200 Mercury Treatment Facility located at the Y-12 National Security Complex.
 - o Period of Performance – December 6, 2018 to December 5, 2022
 - o Contract Value - \$105M
 - o Type – Firm-fixed price
- Characterization, Sampling, and Demolition Blanket Purchase Agreements
 - o Scope – Tasks are competed among small business Blanket Purchase Agreements holders for characterization, sampling, and small-scale demolition across the Oak Ridge Reservation.
 - o Period of Performance- May 2019 to April 2024
 - o Contract Value - \$24.9M
 - o Type – All tasks will be awarded as firm-fixed price task orders.

Strategic Management

The near-term Oak Ridge Environmental Management priorities are: (1) complete closure and continue reindustrialization of the East Tennessee Technology Park; (2) cleanup of the excess contaminated facilities at the Oak Ridge National Laboratory and the Y-12 National Security Complex; (3) process and disposition the remaining uranium-233 inventory; (4) process and ship the remaining transuranic debris waste to the Waste Isolation Pilot Plant; (5) construct the Outfall 200 Mercury Treatment Facility at the Y-12 National Security Complex; (6) construct a new on-site Comprehensive Environmental Response, Compensation, and Liability Act disposal facility; (7) test the critical technologies and design the facility that will treat transuranic sludges stored in tanks at Oak Ridge National Laboratory and (8) continue the groundwater monitoring program for the reservation.

A key component to cleanup success in Oak Ridge is the continued partnering with regulatory agencies and stakeholders. The Oak Ridge Federal Facility Agreement and the Site Treatment Plan are agreements between DOE, the Tennessee Department of Environment and Conservation, and/or the United States Environmental Protection Agency that govern

cleanup of the ORR. 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 a regular basis with the Oak Ridge 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 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted	FY 2023 Requested vs FY 2021 Enacted (%)
Defense Environmental Cleanup					
Oak Ridge					
OR Cleanup and Disposition					
OR-0013B / Solid Waste Stabilization and Disposition-2012	112,471	112,471	62,000	-50,471	-45%
OR Nuclear Facility D&D					
OR-0041 / Nuclear Facility D&D-Y-12					
Operating	135,732	135,732	141,718	+5,986	+4%
Construction					
14-D-403: Outfall 200 Mercury Treatment Facility, OR (OR-0041)	20,500	20,500	0	-20,500	-100%
17-D-401: On-Site Disposal Facility	22,380	22,380	35,000	+12,620	+56%
	178,612	178,612	176,718	-1,894	-1%
OR-0042 / Nuclear Facility D&D-Oak Ridge National Laboratory	118,400	118,400	192,503	+74,103	+63%
Subtotal, OR Nuclear Facility D&D	297,012	297,012	369,221	+72,209	+24%
OR Reservation Community and Regulatory Support					
OR-0100 / Oak Ridge Reservation Community & Regulatory Support (Defense)	5,900	5,900	5,300	-600	-10%
OR Technology Development and Deployment					
OR-TD-0100 / Technology Development Activities - Oak Ridge	5,000	5,000	3,000	-2,000	-40%
U233 Disposition Program					
OR-0011D / U233 Disposition Program	55,000	55,000	47,628	-7,372	-13%
Total, Oak Ridge	475,383	475,383	487,149	+11,766	+2%
Safeguards and Security					
OR-0020 / Safeguards and Security	9,260	9,260	12,000	+2,740	+30%
Environmental Management/ Oak Ridge					

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted	FY 2023 Requested vs FY 2021 Enacted (%)
Total, Defense Environmental Cleanup	484,643	484,643	499,149	+14,506	+3%
Uranium Enrichment Decontamination and Decommissioning Fund					
Oak Ridge					
Oak Ridge					
OR-0040 / Nuclear Facility D&D-East Tennessee Technology Park (D&D Fund)	134,701	134,701	92,946	-41,755	-31%
Pension and Community and Regulatory Support					
Oak Ridge					
OR-0102 / East Tennessee Technology Park Contract/Post-Closure Liabilities/Administration	25,000	25,000	20,000	-5,000	-20%
Total, Uranium Enrichment Decontamination and Decommissioning Fund	159,701	159,701	112,946	-46,755	-29%
Total, Oak Ridge	644,344	644,344	612,095	-32,249	-5%

Oak Ridge
Explanation of Major Changes (\$K)

FY 2021 Enacted	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted
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Defense Environmental Cleanup

Oak Ridge

OR Cleanup and Disposition

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

- Decrease reflects progress on processing transuranic debris waste and testing and maturation of critical technologies for Sludge Processing facility.

112,471	62,000	-50,471
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OR Nuclear Facility D&D

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

- Decrease reflects reduced funding for Mercury Treatment Facility as the work completes offset by increase in On Site Disposal Facility.

178,612	176,718	-1,894
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OR-0042 / Nuclear Facility D&D-Oak Ridge National Laboratory

- Increase reflects funds requested to cleanup high-risk excess contaminated facilities in the Central Campus of Oak Ridge National Laboratory that includes hot cells and reactors.

118,400	192,503	+74,103
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OR Reservation Community and Regulatory Support

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

- No significant change.

5,900	5,300	-600
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OR Technology Development and Deployment

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

- Decrease reflects planned technology development activities.

5,000	3,000	-2,000
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U233 Disposition Program

OR-0011D / U233 Disposition Program

- Decrease reflects completion of build out of Building 2026.

55,000	47,628	-7,372
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Safeguards and Security

OR-0020 / Safeguards and Security

- Increase supports emerging cyber requirements and to maintain security posture.

9,260	12,000	+2,740
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Uranium Enrichment Decontamination and Decommissioning Fund

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

- Decrease reflects ramp-down of cleanup activities at East Tennessee Technology Park. 134,701 92,946 -41,755

Pension and Community and Regulatory Support

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

- Decrease reflects latest actuarial projections. 25,000 20,000 -5,000

Total, Oak Ridge	644,344	612,095	-32,249
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Solid Waste Stabilization and Disposition (PBS: OR-0013B)

Overview

This PBS is within the Defense Environmental Cleanup appropriation.

This PBS funds the storage and disposition of the Oak Ridge Reservation transuranic debris and sludges and low-level waste.

Contact-handled transuranic debris processing began in FY 2006 and remote-handled transuranic debris processing began in FY 2008 at the Transuranic Waste Processing Center. All processed transuranic debris will be safely stored at Oak Ridge until off-site shipments to the Waste Isolation Pilot Plant are complete. Waste characterization and certification activities conducted by the National TRU Program Central Characterization project are included in this PBS.

This PBS includes one line item construction project. A Sludge Processing Facility will be designed and constructed to process legacy transuranic sludge currently being stored in tanks at the Oak Ridge National Laboratory. Testing of the critical technologies this project will use is underway to mature and inform the final design of the facility.

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

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
\$112,471,000	\$62,000,000	-\$50,471,000
<ul style="list-style-type: none"> Maintained regulatory and safety basis documents and permits and operate waste storage facilities at the Oak Ridge National Laboratory. Operated the Transuranic Waste Processing Center to process transuranic debris waste and ship processed waste to the Waste Isolation Pilot Plant. Continued testing of sludge processing facility critical technologies. Managed mixed low-level radioactive waste in compliance with regulations. Conducted transition activities for the OREM cleanup follow-on contract. 	<ul style="list-style-type: none"> Maintain regulatory and safety basis documents and permits and operate waste storage facilities at the Oak Ridge National Laboratory. Operate the Transuranic Waste Processing Center to process transuranic debris waste and ship processed waste to the Waste Isolation Pilot Plant. Manage mixed low-level radioactive waste in compliance with regulations. Continue testing of sludge processing facility critical technologies. 	<ul style="list-style-type: none"> Decrease reflects progress on processing transuranic debris waste and testing and maturation of critical technologies for Sludge Processing facility.

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

Overview

This PBS is within the Defense Environmental Cleanup appropriation.

This PBS funds the OREM operations and cleanup activities at the Y-12 National Security Complex. Y-12 is the source of mercury contamination in the Upper East Fork Poplar Creek that flows through the City of Oak Ridge. OREM performs the following work at Y-12: surveillance and maintenance of current EM owned excess facilities awaiting decontamination and decommissioning; operations of a CERCLA disposal facility for cleanup debris; operations of landfills for disposition of sanitary waste; 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; and deactivation and demolition of excess contaminated facilities.

This PBS also includes two line item construction projects that will provide the infrastructure for the cost effective cleanup of Y-12. The Outfall 200 Mercury Treatment Facility will 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 On Site Waste Disposal Facility will provide on-site waste disposal capacity for demolition debris and remediation waste from the cleanup of ORNL and Y-12.

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

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
\$178,612,000	\$176,718,000	-\$1,894,000
<ul style="list-style-type: none"> Continued routine surveillance and maintenance for EM-owned excess contaminated facilities at Y-12. Operated the Environmental Management Waste Management Facility and other Oak Ridge Reservation landfills. Continued implementing Oak Ridge Reservation groundwater strategy. Continued construction of the Outfall Mercury Treatment Facility. Continued Y-12 cleanup of high priority excess facilities. 	<ul style="list-style-type: none"> Continue routine surveillance and maintenance for EM-owned excess contaminated facilities at Y-12. Operate the Environmental Management Waste Management Facility and other Oak Ridge Reservation landfills. Continue implementing Oak Ridge Reservation groundwater strategy. Continue Outfall Mercury Treatment Facility construction using prior year funding. Continue Y-12 cleanup of high priority excess facilities. 	<ul style="list-style-type: none"> Decrease reflects reduced funding for Mercury Treatment Facility as the work completes offset by increase in On Site Disposal Facility.

-
- Design and construction of the Environmental Management Disposal Facility needed to support cleanup of Oak Ridge National Laboratory and Y-12.

- Design and construction of the Environmental Management Disposal Facility needed to support cleanup of Oak Ridge National Laboratory and 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 following Oak Ridge Environmental Management operations and cleanup activities at the Oak Ridge National Laboratory; operation of liquid, gaseous, and process waste treatment systems that support Office of Environmental Management and Office of Science missions; surveillance and maintenance of EM owned facilities awaiting future decontamination and decommissioning; groundwater and surface water monitoring; and deactivation and demolition of excess contaminated facilities.

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

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
\$118,400,000	\$192,503,000	+\$74,103,000
<ul style="list-style-type: none"> • Monitored groundwater and surface water in accordance with the Melton Valley and Bethel Valley Records of Decision. • Maintained liquid, gaseous and process waste operations systems in support of the missions of the Offices of Environmental Management and Science. • Continued Oak Ridge National Laboratory cleanup of high priority excess facilities. • Performed 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 in a safe and compliant manner. • Conducted infrastructure upgrades to the Liquid and Gaseous Waste Operations 	<ul style="list-style-type: none"> • Monitor groundwater and surface water in accordance with the Melton Valley and Bethel Valley Records of Decision. • Maintain liquid, gaseous and process waste operations systems in support of the missions of the Offices of Environmental Management and Science. • Continue Oak Ridge National Laboratory cleanup of high priority excess facilities. • 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 in a safe and compliant manner. • Conduct infrastructure upgrades to the Liquid and Gaseous Waste Operations 	<ul style="list-style-type: none"> • Increase reflects funds requested to cleanup high-risk excess contaminated facilities in the Central Campus of Oak Ridge National Laboratory that includes hot cells and reactors.

facilities to ensure mission critical activities continue at Oak Ridge Environmental Management and the Oak Ridge National Laboratory.

- Performed enhanced surveillance and maintenance activities at the Molten Salt Reactor Experiment Facility to address issues with safety systems.

facilities to ensure mission critical activities continue at Oak Ridge Environmental Management and the Oak Ridge National Laboratory.

- Perform enhanced surveillance and maintenance activities at the Molten Salt Reactor Experiment Facility to address issues with safety systems.

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

Overview

This PBS is within the Defense Environmental Cleanup appropriation.

This PBS funds the Environmental Surveillance Oversight and Federal Facility Agreement grants with the state of Tennessee and the activities of the Oak Ridge Site Specific Advisory Board. The Environmental Surveillance Oversight 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 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
\$5,900,000	\$5,300,000	-\$600,000
<ul style="list-style-type: none"> Continued support to the State of Tennessee for conducting annual oversight, monitoring, and reporting. This includes: annual reports to the public; independent monitoring program of all environmental media; off reservation monitoring program of wells owned by private citizens adjacent to DOE land; establishment of background levels; oversight of DOE facility surveillance walkthroughs; Federal Facility Agreement support activities; and emergency management exercises. Continued activities by the Site Specific Advisory Board sponsored by DOE-EM to assist in public participation activities and outreach assistance. 	<ul style="list-style-type: none"> Continue support to the State of Tennessee for conducting annual oversight, monitoring, and reporting. This includes annual reports to the public; independent monitoring program of all environmental media; off reservation monitoring program of wells owned by private citizens adjacent to DOE land; establishment of background levels; oversight of DOE facility surveillance walkthroughs; Federal Facility Agreement support activities; and emergency management exercises. Continue activities by the Site Specific Advisory Board sponsored by DOE-EM to assist in public participation activities and outreach assistance. 	<ul style="list-style-type: none"> No significant change.

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

Overview

This PBS is within the Defense Environmental Cleanup appropriation.

This PBS funds technology development and deployment activities that focus 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. These activities 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 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 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
\$5,000,000	\$3,000,000	-\$2,000,000
<ul style="list-style-type: none"> • Continued planned mercury technology development activities, to include focus areas related to understanding soil and groundwater source control, water chemistry and sediment manipulation, and ecological manipulation. 	<ul style="list-style-type: none"> • Continue planned mercury technology development activities, to include focus areas related to understanding soil and groundwater source control, water chemistry and sediment manipulation, and ecological manipulation. 	<ul style="list-style-type: none"> • Decrease reflects planned technology development activities.

U233 Disposition Program (PBS: OR-0011D)

Overview

This PBS is within the Defense Environmental Cleanup appropriation.

This PBS funds the storage, processing and disposition of the inventory of uranium-233 stored in Building 3019 at the Oak Ridge National Laboratory. Uranium-233 is a special nuclear material that 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. The direct disposition campaign disposed of approximately half of the inventory (Consolidated Edison Uranium Solidification Project). The processing campaign that is underway will down blend and dispose of the remaining inventory. Disposition of the remaining 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.

U233 Disposition Program (PBS: OR-0011D)

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
\$55,000,000	\$47,628,000	-\$7,372,000
<ul style="list-style-type: none"> Continued required surveillance and maintenance and other activities at Building 3019 and Building 2026 to maintain a safe and secure condition. Continued glove box processing of oxides to extract thorium for medical applications. Completed build out of Building 2026 and begin hot cell processing to downblend remaining U-233 material. 	<ul style="list-style-type: none"> Continue required surveillance and maintenance and other activities at Building 3019 and Building 2026 to maintain a safe and secure condition. Continue Uranium-233 down blending operations in the Building 2026 hot cells. 	<ul style="list-style-type: none"> Decrease reflects completion of build out of Building 2026.

Safeguards and Security (PBS: OR-0020)

Overview

This PBS is within the Defense Environmental Cleanup appropriation

This PBS funds the safeguard and security services required to support the site’s cleanup program, the implementation of Homeland Security Presidential Directive-12 requirements, and the Cyber Security Program activities to maintain information and technology systems in compliance with DOE requirements including vulnerability management, continuous diagnostic and mitigation implementation, cyber security awareness, and user training.

Safeguards and Security (PBS: OR-0020)

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
\$9,260,000	\$12,000,000	+\$2,740,000
<ul style="list-style-type: none"> Provide safeguard and security services for the following major facilities: Classified Burial Grounds, Environmental Management Waste Management Facility, Transuranic Waste Processing Facility, and the overall East Tennessee Technology Park will be applied in the areas of: protection program management, emergency response, Physical Security, information protection, Protective Force, Personnel Security, Cyber Security and Nuclear Material Control and Accountability. Site security services will be applied using a graded, risk-based management approach supporting site cleanup mission priorities and protecting government equipment, materials, information, and the site workforce. 	<ul style="list-style-type: none"> Provide safeguard and security services for the following major facilities: Classified Burial Grounds, Environmental Management Waste Management Facility, Transuranic Waste Processing Facility, and the overall East Tennessee Technology Park will be applied in the areas of: protection program management, emergency response, Physical Security, information protection, Protective Force, Personnel Security, Cyber Security and Nuclear Material Control and Accountability. Site security services will be applied using a graded, risk-based management approach supporting site cleanup mission priorities and protecting government equipment, materials, information, and the site workforce. 	<ul style="list-style-type: none"> Increase supports emerging cyber requirements and to maintain security posture.

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

Overview

This PBS is within the UED&D Fund appropriation.

This PBS funds the cleanup and closure of the East Tennessee Technology Park. The five large gaseous diffusion plants and their supporting facilities and other site structures not needed to complete cleanup of the site have been demolished. The remaining scope to close the site includes slab removals, soil and groundwater remediation and closure activities.

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 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
\$134,701,000	\$92,946,000	-\$41,755,000
<ul style="list-style-type: none"> Maintained East Tennessee Technology Park in a safe and secure condition. Conducted activities at the East Tennessee Technology Park to provide infrastructure and support to cleanup projects. Conducted characterization and slab and soil remediation of the main plant area, Zone 2 and other activities required to close the site. 	<ul style="list-style-type: none"> Maintain East Tennessee Technology Park in a safe and secure condition. Conduct activities at the East Tennessee Technology Park to provide infrastructure and support to cleanup projects. Conduct characterization and slab and soil remediation and other activities required to close the site. 	<ul style="list-style-type: none"> Decrease reflects ramp-down of cleanup activities at East Tennessee Technology Park.

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

Overview

This PBS is within the UED&D Fund appropriation.

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 the Oak Ridge enrichment facility programs.

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

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
\$25,000,000	\$20,000,000	-\$5,000,000
<ul style="list-style-type: none"> Continued funding of contractor liabilities associated with post-retirement life, medical benefits and pensions. 	<ul style="list-style-type: none"> Continue funding of contractor liabilities associated with post-retirement life, medical benefits and pensions. 	<ul style="list-style-type: none"> Decrease reflects latest actuarial projections.

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

Total	Prior Years	FY 2021 Enacted	FY 2021 Actuals	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted
Capital Operating Expenses Summary (including (Major Items of Equipment (MIE))						
Capital Equipment > \$500K (including MIE)	0	0	0	0	0	+0
Minor Construction (<\$25M)	25,410	6,627	5,740	7,625	7,303	+1,563
Total, Capital Operating Expenses	25,410	6,627	5,740	7,625	7,303	+1,563
Minor Construction (Total Estimated Cost (TEC) <\$25M)						
<u>Oak Ridge (Direct Funded)</u>						
Bailey DCS System Upgrade	16,607	5,127	5,740	7,236	5,740	-5,740
Building 3608 Above Ground Pipe Replacement	8,803	1,500	0	389	0	+7,303
Total, Oak Ridge	25,410	6,627	5,740	7,625	7,303	+1,563
Total, Capital Summary	25,410	6,627	5,740	7,625	7,303	+1,563

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

Total	Prior Years	FY 2021 Enacted	FY 2021 Actuals	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted
17-D-401, On Site Disposal Facility (OR-0041)						
Total Estimate Cost (TEC)	TBD	25,979	22,314	2,350	22,314	34,222 +11,908
Other Project Costs (OPC)	TBD	22,555	66	74	66	778 +712
Total Project Cost (TPC) 17-D-401	TBD	48,534	22,380	2,424	22,380	35,000 12,620

* Congress appropriated line item funds for TPC beginning in FY 2017.

Oak Ridge
17-D-401
On Site Waste Disposal Facility
Y-12 National Security Complex, Oak Ridge Tennessee
Project is for Design and Construction

1. Summary and Significant Changes, and Schedule and Cost History

Summary

The FY 2023 Request for the On-Site Waste Disposal Facility is \$35,000,000 of Total Project Cost funding.

The most recent DOE O 413.3B approved Critical Decision is Critical Decision-1, provided on August 23, 2018, for Phase 1 of 3 construction phases planned for this line item project. The current approved Critical Decision-1 cost range is \$175,000,000-\$375,000,000 for the Phase 1 scope. The Phase 1 scope includes completion of final design for all three construction phases, early site preparation activities, and Phase 1 construction. Phase 1 construction will be initiated following approval of a combined Critical Decision-2/3, Approve Performance Baseline/Approve Start of Construction.

Phases 2 and 3 will have their own combined Critical Decision-1/2/3 prior to each subsequent phase of construction.

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.

The scope of this project is to plan, design, construct, and start up an engineered Comprehensive Environmental Response, Compensation and Liability Act waste disposal facility including all necessary site development, infrastructure improvements, and support facilities. The On-Site Waste Disposal Facility will be constructed on or in the vicinity of the Y-12 National Security Complex in Oak Ridge, TN. The facility will accept disposal of low-level and mixed low-level wastes generated through the cleanup of legacy facilities on the Oak Ridge Reservation. The On-Site Waste Disposal Facility is expected to provide a disposal capacity of up to 2,200,000 cubic yards when all three construction phases are completed.

Significant Changes

This FY 2023 Data Sheet is an update to the FY 2022 Construction Project Data Sheet for the On-Site Waste Disposal Facility and does not include a new start for the budget year.

During FY 2021, ongoing regulatory discussions as well as implementation of the Radiological Dispute Resolution Agreement on the Comprehensive Environmental Response, Compensation and Liability Act Record of Decision for construction of the On-Site Waste Disposal Facility are expected to delay subsequent critical milestones by approximately six months. The estimated cost for CD-3A, Long-Lead Procurement/Early Site Preparation is now planned to be funded as Total Estimated Cost-Design.

Critical Milestone History

Request	Fiscal Year or Date							
	CD-0	Conceptual Design Complete	CD-1	Final Design Complete	CD-3A	CD-2/3	D&D Complete	CD-4
FY 2018								
Phase 1	5/26/2016	4Q FY2017	4Q FY2018	TBD	N/A	TBD	N/A	TBD
FY 2019								
Phase 1	5/26/2016	4Q FY2017	4Q FY2018	TBD	N/A	TBD	N/A	TBD

**Environmental Management/
Oak Ridge/17-D-401 On Site Waste
Disposal Facility Y-12 National Security
Complex, Oak Ridge Tennessee**

FY 2020								
Phase 1	5/26/2016	1/12/2018	8/23/2018	4Q FY2020	TBD	TBD	N/A	TBD
FY 2021								
Phase 1	5/26/2016	1/12/2018	8/23/2018	1Q FY2022	TBD	TBD	N/A	TBD
FY 2022								
Phase 1	5/26/2016	1/12/2018	8/23/2018	3Q FY2025	3Q FY2022	TBD	N/A	TBD
FY 2023								
Phase 1	5/26/20216	1/12/2018	8/23/2018	TBD	1Q FY2023	TBD	N/A	TBD

CD-0 – Approve Mission Need

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 complete

CD-3A – Long-Lead Procurements/Early Site Preparation

CD-3 – Approve Start of Construction

D&D Complete – Completion of D&D work

CD-4 – Approve Start of Operations or Project Completion

Project Cost History

(Dollars in Thousands)

Request	TEC, Design	TEC, Construction	TEC, Total	OPC, Except D&D	OPC, D&D	OPC, Total	TPC
FY 2018	21,396	TBD	TBD	TBD	TBD	TBD	TBD
Phase 1	21,936	TBD	TBD	TBD	TBD	TBD	TBD
FY 2019	21,396	TBD	TBD	TBD	TBD	TBD	TBD
Phase 1	21,936	TBD	TBD	TBD	TBD	TBD	TBD
FY 2020	26,396	TBD	TBD	TBD	TBD	TBD	TBD
Phase 1	26,396	TBD	TBD	TBD	TBD	TBD	TBD
FY 2021	26,396	TBD	TBD	TBD	TBD	TBD	TBD
Phase 1	26,396	TBD	TBD	TBD	TBD	TBD	TBD
FY 2022	47,888	TBD	TBD	TBD	TBD	TBD	TBD
Phase 1	47,888	TBD	TBD	TBD	TBD	TBD	TBD
FY 2023	TBD	TBD	TBD	TBD	N/A	TBD	TBD
Phase 1	TBD	TBD	TBD	TBD	N/A	TBD	TBD

2. Project Scope and Justification

Scope

The purpose of this line item is to provide safe, cost effective, long-term disposal of low-level radioactive waste and mixed low-level radioactive waste generated by Comprehensive Environmental Response, Compensation, and Liability Act cleanup projects at the Oak Ridge Reservation. The scope includes planning, design and construction of an engineered Comprehensive Environmental Response, Compensation, and Liability Act waste disposal facility including all necessary site development, infrastructure improvements, and support facilities, but does not include operations nor the final closure of the facility. The On-Site Waste Disposal Facility is expected to provide a disposal capacity of approximately 2,200,000 cubic yards with a 47-acre footprint. Components of the landfill include: bottom liner system, leachate collection/drainage/transfer systems, underdrain system, french drains and buttressing, and interim caps.

The On-Site Waste Disposal Facility is to be constructed in the three following phases.

Phase 1: This phase will consist of the full and final design of the entire disposal facility footprint that will consist of multiple disposal cells. The final cap will be conceptually designed but is not part of this project. The construction in Phase I will include two cells (approximately one-third capacity) along with all support facilities construction (e.g., water treatment system) and site preparation of entire footprint to support transition to operations.

Phase 2: This phase will consist of construction of one cell (approximately one-third capacity) after a full review of the final design and any necessary updates.

Phase 3: This phase will consist of construction of remaining cell (s) (final one-third capacity) after a full review of the final design and any necessary updates.

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. The number of cells may change during preliminary design but the disposal capacity of up to 2.2 million cubic yards will remain the same.

Justification

The projected waste volumes from the remaining Comprehensive Environmental Response, Compensation, and Liability Act cleanup of Y-12 and ORNL will exceed the capacity of the existing on-site disposal facility, the Environmental Management Waste Management Facility. The scope of this line item is to construct a new on-site disposal facility, the On-Site Waste Disposal Facility, to provide the required additional waste disposal capacity.

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*.

Key Performance Parameters (KPPs)

The Threshold Key Performance Parameters, represent the acceptable performance that the project must achieve. Achievement of the Threshold Key Performance Parameters will be a prerequisite for approval of Critical Decision -4, Project Completion. The Objective Key Performance Parameters represent the desired project performance.

Performance Measure	Threshold	Objective
Design an ORR disposal facility with an air space capacity of up to 2.2 million cubic yards and required infrastructure for the disposal of OREM-generated CERCLA waste in support of cleanup activities conducted under the FFA.	Not available at CD-1.	Not available at CD-1.
Construct and deliver to operations the initial set of disposal cells to provide a minimum of one-third (approximately 700,000 cubic yards) of the total capacity, and all supporting infrastructure as needed for waste disposal.	Not available at CD-1.	Not available at CD-1.

**Environmental Management/
Oak Ridge/17-D-401 On Site Waste
Disposal Facility Y-12 National Security
Complex, Oak Ridge Tennessee**

Performance Measure	Threshold	Objective
Provide the necessary systems and infrastructure for the collection, storage, and treatment of landfill wastewater to ensure compliance with applicable or relevant and appropriate requirements (ARARs).	Not available at CD-1.	Not available at CD-1.

3. Project Cost and Schedule

Phase 1 Financial Schedule

		(Dollars in Thousands)		
		Appropriations	Obligations	Costs
Total Estimated Cost (TEC)				
Design				
FY 2017		6,000	0	0
FY 2018		10,000	16,000	812
FY 2019		9,979	302	10,153
FY 2020		0	9,539	3,782
FY 2021		22,314		2,350
FY 2022		12,073	34,525	5,105
FY 2023		34,222	34,222	39,580
Outyears		TBD	TBD	TBD
Total, Design		TBD	TBD	TBD
Construction ^a				
FY 2017	Phase 1	N/A	N/A	0
FY 2018	Phase 1	N/A	N/A	0
FY 2019	Phase 1	N/A	N/A	0
FY 2020	Phase 1	N/A	N/A	0
FY 2021	Phase 1	N/A	N/A	0
FY 2022	Phase 1	0	0	0
FY 2023	Phase 1	0	0	0
Outyears	Phase 1	TBD	TBD	TBD
Total, Construction		TBD	TBD	TBD
TEC ^a				
FY 2017	Phase 1	6,000	0	0
FY 2018	Phase 1	10,000	16,000	812
FY 2019	Phase 1	9,979	302	10,153
FY 2020	Phase 1	0	9,539	3,782
FY 2021	Phase 1	22,314		2,350
FY 2022	Phase 1	12,073	34,525	5,105
FY 2023	Phase 1	34,222	34,222	39,580
Outyears	Phase 1	TBD	TBD	TBD
Total TEC		TBD	TBD	TBD
OPC except D&D ^a				
FY 2011	Phase 1	1,063	1,063	343
FY 2012	Phase 1	214	214	737
FY 2013	Phase 1	627	627	591
FY 2014	Phase 1	2,332	2,332	2,140

**Environmental Management/
Oak Ridge/17-D-401 On Site Waste
Disposal Facility Y-12 National Security
Complex, Oak Ridge Tennessee**

FY 2023 Congressional Budget Justification

		(Dollars in Thousands)		
		Appropriations	Obligations	Costs
FY 2015	Phase 1	3,978	3,978	3,320
FY 2016	Phase 1	7,050	7,050	4,266
FY 2017	Phase 1	1,973	1,973	4,439
FY 2018	Phase 1	5,297	5,297	6,462
FY 2019	Phase 1	21	21	156
FY 2020	Phase 1	0	0	28
FY 2021	Phase 1	66	0	73
FY 2022	Phase 1	427	493	493
FY 2023	Phase 1	778	778	778
Outyears	Phase 1	TBD	TBD	TBD
Total, OPC except D&D		TBD	TBD	TBD
OPC ^a				
FY 2011	Phase 1	1,063	1,063	343
FY 2012	Phase 1	214	214	737
FY 2013	Phase 1	627	627	591
FY 2014	Phase 1	2,332	2,332	2,140
FY 2015	Phase 1	3,978	3,978	3,320
FY 2016	Phase 1	7,050	7,050	4,266
FY 2017	Phase 1	1,973	1,973	4,439
FY 2018	Phase 1	5,297	5,297	6,462
FY 2019	Phase 1	21	21	156
FY 2020	Phase 1	0	0	28
FY 2021	Phase 1	66	0	73
FY 2022	Phase 1	427	493	493
FY 2023	Phase 1	778	778	778
Outyears	Phase 1	TBD	TBD	TBD
Total, OPC		TBD	TBD	TBD
Total Project Cost				
(TPC) ^a				
FY 2011	Phase 1	1,063	1,063	343
FY 2012	Phase 1	214	214	737
FY 2013	Phase 1	627	627	591
FY 2014	Phase 1	2,332	2,332	2,140
FY 2015	Phase 1	3,978	3,978	3,320
FY 2016	Phase 1	7,050	7,050	4,266
FY 2017	Phase 1	7,973	1,973	4,439
FY 2018	Phase 1	15,297	21,297	7,274
FY 2019	Phase 1	10,000	323	10,309
FY 2020	Phase 1	0	9,539	3,810
FY 2021	Phase 1	22,380	0	2,423
FY 2022	Phase 1	12,500	35,018	5,598
FY 2023	Phase 1	35,000	35,000	40,358
Outyears	Phase 1	TBD	TBD	TBD
		TBD	TBD	TBD

^a Note: Congress appropriated line item funds for TPC beginning in FY 2017. Congress also appropriated OPC funds through FY 2018 until CD-1 was approved.

Details of Phase 1 Project Cost Estimate

	(Dollars in Thousands)		
	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design	TBD	47,888	
Construction			
Phase 1	<u>TBD</u>	<u>TBD</u>	N/A ^a
Total Construction	TBD	TBD	N/A ^a
Total Estimated Cost (TEC)	TBD	TBD	N/A ^a
Other Project Cost (OPC)			
Phase 1	<u>TBD</u>	<u>TBD</u>	N/A ^a
Total, OPC	TBD	TBD	N/A ^a
Total, TPC	TBD	TBD	N/A ^a

^a This project has not received CD-2 at this time; therefore, a validated performance baseline has not been established.

Schedule of Phase 1 Appropriation Requests

Request		Prior Years	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	Out years	Total
FY 2018	TEC	6,000	1,000						TBD	TBD
	OPC	17,237	4,000						TBD	TBD
	TPC	23,237	5,000						TBD	TBD
FY 2019	TEC	6,000	10,000	4,690					TBD	TBD
	OPC	17,237	5,297	310					TBD	TBD
	TPC	23,237	15,297	5,000					TBD	TBD
FY 2020	TEC	6,000	10,000							
	OPC	17,237	5,297							
	TPC	23,237	15,297	10,000	15,269	0			TBD	TBD
FY 2021	TEC	6,000	10,000							
	OPC	17,237	5,297							
	TPC	23,237	15,297	10,000	0	22,380			TBD	TBD
FY 2022	TEC	6,000	10,000							
	OPC	17,237	5,297							
	TPC	23,237	15,297	10,000	0	22,380	12,500	80,266	TBD	TBD
FY 2023	TEC	6,000	10,000							
	OPC	17,237	5,297							
	TPC	23,237	15,297	10,000	0	22,380	12,500	35,000	TBD	TBD

4. Related Operations and Maintenance Funding Requirements

Start of Operation or Beneficial Occupancy (fiscal quarter or date) TBD

**Environmental Management/
Oak Ridge/17-D-401 On Site Waste
Disposal Facility Y-12 National Security
Complex, Oak Ridge Tennessee**

FY 2023 Congressional Budget Justification

Expected Useful Life (number of years) TBD
 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	TBD	N/A	TBD	N/A
Utilities	0	0	0	0
Maintenance	0	N/A	0	0
Total, Operations & Maintenance	TBD		TBD	

5. 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	(footprint)*
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"	0
Total area eliminated	0

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.

Note: Although located in the general area of the Y-12 National Security Complex, it is likely that the On-Site Waste Disposal Facility will be constructed outside the footprint of the Complex.

6. Acquisition Approach

Awarded contract to URS/CH2M Oak Ridge, LLC (UCOR) on April 29, 2011. This contract includes the cleanup of ETP and other EM operations and activities, including the design of the On-Site Waste Disposal Facility and support for DOE Order 413.3B Critical Decision approval. The contract is a cost-plus award fee with performance-based incentives.

Completion of Phase 1 and 2 is included in the follow-on End State Contracting Model Oak Ridge Reservation Cleanup Contract acquisition, which is pending award. An Acquisition Strategy (AS) will be developed to support Phase 3 Critical Decision-1/2/3. This AS will address the contracting approach for Phase 3 construction and transition to operations.

Paducah

Overview

Occupying 3,556 acres near Paducah, Kentucky, the Paducah Gaseous Diffusion Plant (GDP) enriched uranium and was the last government-owned uranium enrichment facility operating in the United States. The Paducah Gaseous Diffusion Plant produced low-enriched uranium originally as feedstock for nuclear weapons and later for commercial nuclear power plants until the extensive environmental cleanup program began. The Paducah Site cleanup will 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 the 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 radioactive waste.

Paducah will continue to operate the Depleted Uranium Hexafluoride Conversion Facility.

Direct maintenance and repair at Paducah is estimated to be \$28,666,000.

The Paducah Operations Office plans to install electric vehicle (EV) charging stations at select locations to support future electric vehicle use and purchase the following vehicle in FY 2023: Roll-off bin haul truck.

Highlights of the FY 2023 Budget Request

This FY 2023 Budget Request supports activities to continue environmental remediation and to further stabilize the former gaseous diffusion plant. The stabilization activities include non-destructive assay characterization, activities to remove hazardous materials, and surveillance and maintenance. This budget request also supports the safe operation of the Depleted Uranium Hexafluoride Conversion facility and the infrastructure to support disposition of oxide and heel/empty cylinders.

FY 2022 and FY 2023 Key Milestones/Outlook

- (April 2022) Complete Fieldwork associated with C-400 Complex Investigation.
- (October 2022) Issue D1 Remedial Investigation/Feasibility Study Report for the C-400 Complex Operable Unit.
- (December 2022) Complete Disposal of 1,000,000 Pounds of R-114 Refrigerant (Freon) in CY 2022.
- (March 2023) Start Operations of the Material Sizing Area, Large Item Neutron Assay System and Bundle Crusher for Converter Segmentation in the C-333 Process Building.
- (March 2023) Submit the Southwest Plume Solid Waste Management Unit 211-A D1 Remedial Action Completion Report.
- (April 2023) Issue C-400 Complex Final Remedial Action D1 Proposed Plan.
- (September 2023) Initiate Infrastructure to Prepare for the Disposition of Oxide and Heel/Empty Cylinders.

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 an Agreed Order with the Commonwealth of Kentucky.

DOE and the Commonwealth of Kentucky have a separate Agreed Order addressing management of depleted uranium hexafluoride cylinders.

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

Current contracts at Paducah include:

- Mid-America Conversion Services, LLC, a cost-plus-award-fee/firm-fixed-price contract for operations of the Paducah and Portsmouth depleted uranium hexafluoride facilities and cylinder surveillance and maintenance, covering the period from September 29, 2016 – January 30, 2022. A 14-month extension was awarded, extending the period from January 30, 2022 to March 28, 2023.
- Four Rivers Nuclear Partnership, a cost-plus-award-fee contract with cost reimbursable and indefinite-delivery indefinite quantity contract for deactivation and remediation services, covering the period June 20, 2017 -June 19, 2022. This contract has the potential for a 36 month option period and a 24 month option period.
- Swift and Staley, Inc., a small business, hybrid firm-fixed -price contract for site support services, covering the period October 02, 2015 – September 30, 2021. Additional option periods have been awarded to accommodate additional time required by DOE to award the follow-on contract, which is in process.

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 has been working with the Kentucky Department for Environmental Protection and the United States Environmental Protection Agency (Region 4) to further define which projects can be sequenced, while optimizing resources and utilizing a risk-based approach, to ensure timely environmental cleanup. In addition, Paducah is operating a depleted uranium hexafluoride conversion facility.

In August 2017, the three Federal Facility Agreement parties (DOE, United States Environmental Protection Agency and the Commonwealth of Kentucky) agreed to focus the next ten years on the investigation and cleanup of the C-400 Complex for all contaminants of concern. This work also includes the demolition of the C-400 Cleaning Building and remediation of the primary source of offsite groundwater contamination at the Paducah Site. Other environmental cleanup projects will be re-sequenced as a result of this determination.

The factors that could have an 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 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 are subject to several 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 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted	FY 2023 Requested vs FY 2021 Enacted (%)
Defense Environmental Cleanup					
Safeguards and Security					
PA-0020 / Safeguards and Security	16,206	16,206	16,206	+0	+0%
Non-Defense Environmental Cleanup					
Gaseous Diffusion Plants					
Paducah Gaseous Diffusion Plant					
PA-0011 / NM Stabilization and Disposition-Paducah Uranium Facilities Management	778	778	0	-778	-100%
PA-0011X / NM Stabilization and Disposition-Depleted Uranium Hexafluoride Conversion	56,802	56,802	63,421	+6,619	+12%
Subtotal, Paducah Gaseous Diffusion Plant	57,580	57,580	63,421	+5,841	+10%
Uranium Enrichment Decontamination and Decommissioning Fund					
Paducah					
Paducah Gaseous Diffusion Plant					
PA-0040 / Nuclear Facility D&D-Paducah	240,000	240,000	199,269	-40,731	-17%
Pension and Community and Regulatory Support					
Paducah Gaseous Diffusion Plant					
PA-0103 / Paducah Community and Regulatory Support	2,099	2,099	2,782	+683	+33%
Total, Uranium Enrichment Decontamination and Decommissioning Fund	242,099	242,099	202,051	-40,048	-17%
Total, Paducah	315,885	315,885	281,678	-34,207	-11%

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

FY 2021 Enacted	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted
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Defense Environmental Cleanup

Safeguards and Security

PA-0020 / Safeguards and Security

- No change.

16,206 16,206 +0

Non-Defense Environmental Cleanup

Gaseous Diffusion Plants

Paducah Gaseous Diffusion Plant

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

- Decrease reflects transfer of management of residual polychlorinated biphenyls to Nuclear Facility Deactivation and Decommissioning.

778 0 -778

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

- Increase supports infrastructure to prepare for the disposition of oxide and heel/empty cylinders to a licensed disposal facility.

56,802 63,421 +6,619

Uranium Enrichment Decontamination and Decommissioning Fund

Paducah

PA-0040 / Nuclear Facility D&D-Paducah

- Decrease reflects progress on C-400 deactivation, subsurface investigation, and remediation, and completion of the Tennessee Valley Authority substation and deactivation of the C-531 switchyard.

240,000 199,269 -40,731

Pension and Community and Regulatory Support

PA-0103 / Paducah Community and Regulatory Support

- Increase supports regulatory support, stakeholder activities, and groundwater modeling and field activities supporting cleanup schedules.

2,099 2,782 +683

Total, Paducah

315,885 281,678 -34,207

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, and personnel. The safeguards and security program also supports the Paducah remediation and cleanup programs. 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: PA-0020)

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
\$16,206,000	\$16,206,000	+\$0
<ul style="list-style-type: none"> • Provided safeguards and security services using a graded approach to include: physical security systems, protective forces, information security, operational security, personnel security, material control and accountability, program management, and cybersecurity. • Continued construction of on-site firing range. • Continued Limited Area footprint reduction at the Northwest Corner of the plant. • Continued Limited Area footprint reduction for the process buildings. 	<ul style="list-style-type: none"> • Provide safeguards and security services using a graded approach to include: physical security systems, protective forces, information security, operational security, personnel security, material control and accountability, program management, and cybersecurity. • Complete installation of Pro-force facility within the modular security complex. • Complete construction of Pro-force Shoot House. 	<ul style="list-style-type: none"> • No change.

NM Stabilization and Disposition (PBS: PA-0011)

Overview

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

This PBS 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 uranium enrichment buildings (C-310, C-315, C-331, C-333, C-335, and C-337) cover approximately 6,400,000 ft² and contain approximately 16,000 collection systems.

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

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
\$778,000	\$0	-\$778,000
<ul style="list-style-type: none"> Continued to maintain cleanup, sampling, and decontamination of polychlorinated spills and leaks, and monitoring activities related to polychlorinated biphenyls. Inspected and maintained polychlorinated biphenyl collection and containment systems. Conducted cleanup, sampling and disposal of polychlorinated biphenyl spills. 	<ul style="list-style-type: none"> No planned activities. 	<ul style="list-style-type: none"> Decrease reflects transfer of management of residual polychlorinated biphenyls to Nuclear Facility Deactivation and Decommissioning.

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. 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 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
\$56,802,000	\$63,421,000	+\$6,619,000
<ul style="list-style-type: none"> Completed DOE Readiness Assessment for restart of DUF6 conversion operations. Completed hydrogen fluoride system double block and bleed system modifications. Completed replacement polyvinyl chloride potassium hydroxide piping/components with metal piping/components on scrubber systems for all four lines. Completed inspection of all hydrogen fluoride storage tanks and commenced relining efforts for hydrogen fluoride storage tanks. Conducted cylinder surveillance and maintenance to keep existing material in a safe, stable condition. 	<ul style="list-style-type: none"> Conduct operations of DUF6 conversion facility. Package converted depleted uranium oxide and store on site. Continue plant safety and reliability modifications. Conduct cylinder surveillance and maintenance to keep material in a safe, stable condition. Conduct annual plant maintenance outages. Perform infrastructure to prepare for the disposition of oxide and heel/empty cylinders to a licensed disposal facility. Complete Integrated Control System upgrade. Complete hydrogen fluoride storage tank relining. 	<ul style="list-style-type: none"> Increase supports infrastructure to prepare for the disposition of oxide and heel/empty cylinders to a licensed disposal facility.

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

Overview

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

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

This PBS supports activities to continue environmental cleanup, further stabilize the gaseous diffusion plant to achieve a safe configuration, including facility modifications, surveillance and maintenance activities, and actions to remove hazardous materials. 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 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
\$240,000,000	\$199,269,000	-\$40,731,000
<ul style="list-style-type: none"> Continued utility operations, pump-and-treat operations, waste and landfill operations, infrastructure support, environmental monitoring and reporting, surveillance and maintenance of facilities. Completed C-400 pre-demolition scope, deactivation and remedial investigation field sampling. Removed and dispositioned process gas equipment components for the C-333 process 	<ul style="list-style-type: none"> Continue utility operations, pump-and-treat operations, waste and landfill operations, infrastructure support, environmental monitoring and reporting, surveillance and maintenance of facilities. Issue D1 Remedial Investigation/Feasibility Study Report for the C-400 Complex Operable Unit. Issue C-400 Complex Final Remedial Action D1 Proposed Plan. 	<ul style="list-style-type: none"> Decrease reflects progress on C-400 deactivation, subsurface investigation, and remediation, and completion of the Tennessee Valley Authority substation and deactivation of the C-531 switchyard.

**Environmental Management/
Paducah**

-
- building.
 - Removed and dispositioned 1,673,000 pounds of R-114 Refrigerant (Freon).
 - Completed construction of new Tennessee Valley Authority substation.
 - Initiated Solid Waste Management Unit 211-A remedial action.
 - Initiated deactivation of C-531 Switchyard.
 - Complete construction of a bundle crushing area, and initiate segmentation of C-333 process building converters.
 - Continue the disposition of R-114 Refrigerant (Freon) offsite to reduce the overall site risk.

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

Overview

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

This PBS scope supports an Agreement-in-Principle grant to the Commonwealth of Kentucky to provide independent oversight of the environmental programs, including surface water, groundwater, air and other environmental monitoring; and 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. This PBS also includes support to the Paducah Citizens Advisory Board for assistance in all public participation activities and a grant with Kentucky to support the groundwater program.

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

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
\$2,099,000	\$2,782,000	+\$683,000
<ul style="list-style-type: none"> Supported the Citizens Advisory Board to assist in the public participation activities required by the Comprehensive Environmental Response, Compensation, and Liability Act. Continued to ensure requirements are met regarding the Federal Facility Agreement and Agreement-In-Principle grants. Continued support to the Kentucky Research Consortium for Energy and Environment for groundwater modeling program. 	<ul style="list-style-type: none"> Continue support to the Citizens Advisory Board to assist in the public participation activities required by the Comprehensive Environmental Response, Compensation, and Liability Act. Continue to ensure requirements are met regarding the Federal Facility Agreement and Agreement-In-Principle grants. Continue support to the Kentucky Research Consortium for Energy and Environment for groundwater modeling program. 	<ul style="list-style-type: none"> Increase supports regulatory support, stakeholder activities, and groundwater modeling and field activities supporting cleanup schedules.

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

Total	Prior Years	FY 2021 Enacted	FY 2021 Actuals	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted
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Capital Operating Expenses Summary (including (Major Items of Equipment (MIE))

Capital Equipment > \$500K (including MIE)	0	0	0	0	0	0
Minor Construction (<\$25M)	8,501	349	1,910	4,639	1,910	4,332
Total, Capital Operating Expenses	8,501	349	1,910	4,639	1,910	4,332

Minor Construction (Total Estimated Cost (TEC) <\$25M)

Paducah (Direct Funded)

Large Item Neutron Assay System	1,047	349	349	4,043	349	0	-349
ProForce Training/Track/Shoothouse	2,982	0	561	541	561	1,860	+1,299
ProForce Facility	2,472	0	0	55	0	2,472	+2,472
Modular Classified Records Storage	2,000	0	1,000	0	1,000	0	-1,000
Total, Paducah	8,501	349	1,910	4,639	1,910	4,332	+2,422
Total, Capital Summary	8,501	349	1,910	4,639	1,910	4,332	+2,422

Portsmouth

Overview

The Portsmouth Site, occupying 3,700 acres in Portsmouth, Ohio, is one of the three gaseous diffusion enrichment plants that enriched uranium for nuclear weapons. In the 1960s, Portsmouth's mission changed to focus on producing fuel for commercial nuclear power plants and other national security applications until the extensive environmental cleanup program began. The Portsmouth Site cleanup will 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 radioactive waste and mixed low-level radioactive waste resulting from deactivation and decommissioning activities; dispose of all excess materials; and perform groundwater trichloroethylene source zone removal.

The Portsmouth site will operate its Depleted Uranium Hexafluoride Conversion Facility and initiate infrastructure to support disposition of oxide and heel/empty cylinders.

Direct maintenance and repair at Portsmouth is estimated to be \$59,160,000.

Portsmouth plans to install electric vehicle (EV) charging stations at select locations to support future electric vehicle use and procure one Vacuum Truck.

Highlights of the FY 2023 Budget Request

This FY 2023 Budget Request continues progress on the deactivation and decommissioning of the former Portsmouth Gaseous Diffusion Plant. This budget request also supports the safe operation of the Depleted Uranium Hexafluoride Conversion facility and the infrastructure to support disposition of oxide and heel/empty cylinders.

The FY 2023 Budget Request includes \$48,040,000 in funding (\$725,000 for design, \$44,915,000 for construction, and \$2,400,000 for other project cost) for the On-Site Waste Disposal Facility, Line-Item Capital Project #2 (20-U-401) to receive the debris from the demolition of the X-333 Process Building.

FY 2022 and FY 2023 Key Milestones/Outlook

- (December 2021) Completed Construction of Cell Liner 4 and Cell Liner 5 of On-Site Waste Disposal Facility (15-U-408).
- (April 2022) Complete Site Restoration of the X-740 Plume Excavation.
- (April 2022) Complete Sediment Pond 1B for On-Site Waste Disposal Facility (20-U-401).
- (August 2022) Complete X-231B Excavation for Use of Engineered Fill in On-Site Waste Disposal Facility.
- (August 2022) Initiate X-231A Excavation for Use of Engineered fill in On-Site Waste Disposal Facility.
- (September 2022) Complete physical demolition of the X-326 Process Building.
- (September 2022) Continue Construction of the On-Site Waste Disposal Facility (20-U-401).
- (December 2022) Complete Waste Placement of the First Process Building (X-326).
- (January 2023) Complete Process Gas Equipment Disposition for First Process Building (X-326) that Does Not Meet the Criteria to be Dispositioned in the On-Site Waste Disposal Facility.
- (March 2023) Complete Removal of Select Process Gas Equipment of Second Process Building (X-333).
- (April 2023) Initiate Pre-Demolition of the X-333 Process Building.
- (August 2023) Complete X-326 Process Building Waste Loading and Placement of Debris in the On-Site Waste Disposal Facility.
- (September 2023) Initiate Deactivation in the Third Process Building (X-330).
- (September 2023) Initiate Infrastructure Readiness to Support Disposition of Oxide and Empty/Heel Cylinders for the DUF6 Project.

Regulatory Framework

Oversight of cleanup activities at the Portsmouth site is the responsibility of the Ohio Environmental Protection Agency. The ongoing environmental media cleanup activities are being conducted in accordance with the State of Ohio Consent Decree, under the Resource Conservation and Recovery Act, which requires investigation and remediation of solid and hazardous waste management units. A Decision Document under the Consent Decree for final soil and groundwater cleanup is anticipated to be issued by Ohio Environmental Protection Agency in FY 2022.

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 Ohio Environmental Protection Agency issuance of the Directors Final Findings and Orders for Decontamination and Decommissioning, which uses the framework of the Comprehensive Environmental Response, Compensation, and Liability Act requirements. The On-Site Waste Disposal Record of Decision was issued in June 2015, and the Process Building Record of Decision was issued in July 2015. The conditional Operating Disposal Authorization Statement required under DOE Order 435.1, Radioactive Waste Management was signed on December 17, 2019, and was required prior to first waste placement.

DOE and the Ohio Environmental Protection Agency have an agreement for the management of the storage of the depleted uranium hexafluoride cylinders.

Contractual Framework

Current contracts at Portsmouth include:

- Mid-America Conversion Services, LLC, a cost-plus-award-fee/fixed-price contract for operation of the Portsmouth and Paducah depleted uranium hexafluoride facilities and cylinder surveillance and maintenance, covering the period from September 30, 2016 - January 30, 2022. A 14-month extension was awarded, extending the period from January 30, 2022 to March 28, 2023.
- Fluor-BWXT Portsmouth LLC, a cost-plus-award-fee, cost-plus-fixed-fee, and Indefinite Delivery/Indefinite Quantity contract for decontamination and decommissioning of uranium gaseous diffusion buildings, and legacy soil and groundwater remediation, covering March 29, 2016 – September 30, 2022, with the option to exercise an additional six-month extension.
- North Wind Dynamics, LLC, a firm-fixed-price hybrid including fixed-price, cost-reimbursable, Indefinite Delivery/Indefinite Quantity contract for infrastructure support services, covering the period of February 18, 2022 – December 18, 2024, with the option to exercise a 24-month extension.

Strategic Management

The key environmental cleanup strategies for the Portsmouth site are to continue process building deactivation, including equipment removal actions and hazardous material abatement; initiate process building demolition; continue construction activities associated with an On-Site Waste Disposal Facility for disposition of the process buildings and Balance of Plant deactivation and demolition waste and debris; complete the remediation soil and groundwater of the deferred units under the Ohio Consent Decree; continue operations of groundwater treatment facilities in support of installed remedies; remove stored low-level radioactive waste and mixed low-level radioactive waste streams contaminated with hazardous or toxic chemicals; and operate the Depleted Uranium Hexafluoride Conversion Facility.

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 of materials and wastes. The regulatory documents that could have significant impacts on individual projects and may affect the overall costs and schedule are outlined below:

- 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 is working with Ohio Environmental Protection Agency to resolve comments on the Resource Conservation and Recovery Act Facility Investigation/Corrective Measure Study Report, which is part of the decision making process for the Resource Conservation and Recovery Act Soil and Groundwater Decision Document.

- DOE will continue to develop landfill and plume excavation work plans in accordance with the agreement reached with the Ohio Environmental Protection Agency.
- DOE will continue to support NNSA funded activities.

Portsmouth Project Office

Funding (\$K)

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted	FY 2023 Requested vs FY 2021 Enacted (%)
Defense Environmental Cleanup					
Safeguards and Security					
PO-0020 / Safeguards and Security	16,690	16,690	16,690	+0	+0%
Non-Defense Environmental Cleanup					
Gaseous Diffusion Plants					
Portsmouth Gaseous Diffusion Plant					
PO-0011X / NM Stabilization and Disposition-Depleted Uranium Hexafluoride Conversion	57,974	57,974	60,017	+2,043	+4%
Uranium Enrichment Decontamination and Decommissioning Fund					
Portsmouth					
Portsmouth Gaseous Diffusion Plant					
PO-0040 / Nuclear Facility D&D-Portsmouth					
Operating	367,193	367,193	432,354	+65,161	+18%
Construction					
15-U-408: On-Site Waste Disposal Facility, Portsmouth (PO-0040)	46,639	46,639	0	-46,639	-100%
20-U-401: On Site Waste Disposal Facility (Cell Line 2&3)	16,500	16,500	48,040	+31,540	+191%
	<u>430,332</u>	<u>430,332</u>	<u>480,394</u>	<u>+50,062</u>	<u>+12%</u>
Pension and Community and Regulatory Support					
Portsmouth Gaseous Diffusion Plant					
PO-0103 / Portsmouth Contract/Post-Closure Liabilities/Administration	500	500	130	-370	-74%
PO-0104 / Portsmouth Community and Regulatory Support	3,368	3,368	2,500	-868	-26%
Subtotal, Portsmouth Gaseous Diffusion Plant	<u>3,868</u>	<u>3,868</u>	<u>2,630</u>	<u>-1,238</u>	<u>-32%</u>
Total, Uranium Enrichment Decontamination and Decommissioning Fund	<u>434,200</u>	<u>434,200</u>	<u>483,024</u>	<u>+48,824</u>	<u>+11%</u>
Total, Portsmouth	<u>508,864</u>	<u>508,864</u>	<u>559,731</u>	<u>+50,867</u>	<u>+10%</u>

Environmental Management/
Portsmouth

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

	FY 2021 Enacted	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted
Defense Environmental Cleanup			
Safeguards and Security			
PO-0020 / Safeguards and Security			
• No change.	16,690	16,690	+0
Non-Defense Environmental Cleanup			
Gaseous Diffusion Plants			
Portsmouth Gaseous Diffusion Plant			
PO-0011X / NM Stabilization and Disposition-Depleted Uranium Hexafluoride Conversion			
• Increase supports infrastructure for the disposition of oxide and empty/heel cylinders to a licensed disposal facility.	57,974	60,017	+2,043
Uranium Enrichment Decontamination and Decommissioning Fund			
Pension and Community and Regulatory Support			
PO-0103 / Portsmouth Contract/Post-Closure Liabilities/Administration			
• Decrease reflects reduction in litigation liabilities.	500	130	-370
PO-0104 / Portsmouth Community and Regulatory Support			
• Decrease reflects completion of activities associated with independent sampling effort.	3,368	2,500	-868
Portsmouth			
PO-0040 / Nuclear Facility D&D-Portsmouth			
• Increase supports initiation of pre-demolition of X-333 Process Building, initiation of deactivation of X-330 Process Building, and soil excavation for engineered fill. Partially offset by the decrease of the On-Site Disposal Facility construction completion of CAP 1 (15-U-408) and continued construction of CAP 2 (20-U-401).	430,332	480,394	+50,062
Total, Portsmouth	508,864	559,731	+50,867

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. 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 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
\$16,690,000	\$16,690,000	+\$0
<ul style="list-style-type: none"> • Provided safeguards and security services using a graded approach to include: physical security systems, protective forces, information security, operational security, personnel security, material control and accountability, program management, and cyber security. • Supported the development of risk assessment reduction of security footprint at the site. 	<ul style="list-style-type: none"> • Provide safeguards and security services using a graded approach to include: physical security systems, protective forces, information security, operational security, personnel security, material control and accountability, program management, and cyber security. • Support the development of risk assessment reduction of security footprint at the site. 	<ul style="list-style-type: none"> • No change.

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

Overview

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

This PBS scope includes operating a depleted uranium hexafluoride conversion facility at the Portsmouth Gaseous Diffusion Plant site. The facility converts depleted uranium hexafluoride into a more stable chemical form (depleted uranium oxide) suitable for beneficial reuse or disposition. The depleted uranium oxide and cylinders will initially be stored on-site and ultimately sent to a disposal facility if beneficial reuses are not realized. The hydrogen fluoride co-product 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. 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 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
\$57,974,000	\$60,017,000	+\$2,043,000
<ul style="list-style-type: none"> Continued preparations for restart of DUF6 conversion operations. Initiated installation of Integrated Control System. Continued cylinder maintenance and surveillance to maintain existing material in safe, stable condition. Completed inspection of all hydrogen fluoride storage tanks. Completed hydrogen fluoride system double block and bleed system modifications. Completed replacement of poly vinyl chloride piping and components with metal on scrubber systems for all three lines. 	<ul style="list-style-type: none"> Conduct operations of DUF6 conversion facility. Package converted depleted uranium oxide and store on site. Continue plant safety and reliability modifications. Conduct cylinder surveillance and maintenance to keep material in a safe and stable condition. Conduct annual plant maintenance outages. Perform infrastructure upgrade for the disposition of oxide and empty/heel cylinders. 	<ul style="list-style-type: none"> Increase supports infrastructure for the disposition of oxide and empty/heel cylinders to a licensed disposal facility.

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- Completed permanent platform installation and fire system modification for Oxide Powder Handling system.

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

Overview

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

This PBS scope includes remedial actions due to contamination resulting from the plant's historical uranium enrichment operations, facility decontamination and decommissioning, and surveillance and maintenance activities at the Portsmouth Gaseous Diffusion Plant.

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

The FY 2023 Budget Request of \$480,394,000 supports removal of high-risk radioactively contaminated equipment and hazardous materials from the uranium processing buildings, including \$48,040,000 (\$725,000 for design, \$44,915,000 for construction, and \$2,400,000 for other project cost) for Portsmouth On-Site Waste Disposal Facility Capital Project #2 (20-U-401) to receive debris from the X-333 Process Building. The mission of this project is to construct an On-Site Waste Disposal Facility for debris generated from the deactivation and demolition of the Portsmouth Gaseous Diffusion Plant and associated facilities.

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

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
\$430,332,000	\$480,394,000	+\$50,062,000
<ul style="list-style-type: none"> Continued operations such as utility operations, pump-and-treat operations, waste and landfill operations, infrastructure support, environmental monitoring and reporting, surveillance and maintenance of facilities. Continued demolition of the X-326, the first of three major process buildings. Completed On-Site Waste Disposal Facility (OSWDF) infrastructure and began operations of the On-Site Waste Disposal Facility with first waste placement from the X-326 Process Building demolition (15-U-408). 	<ul style="list-style-type: none"> Continue operations such as utility operations, pump-and-treat operations, waste and landfill operations, infrastructure support, environmental monitoring and reporting, surveillance and maintenance of facilities. Complete demolition of the X-326 process building and waste placement in the On-Site Waste Disposal Facility (15-U-408). Complete disposition of X-326 Process Gas Equipment that does not meet the On-Site 	<ul style="list-style-type: none"> Increase supports initiation of pre-demolition of X-333 Process Building, initiation of deactivation of X-330 Process Building, and soil excavation for engineered fill. Partially offset by the decrease of the On-Site Disposal Facility construction completion of CAP 1 (15-U-408) and continued construction of CAP 2 (20-U-401).

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- Completed deactivation of three of eight cell floor processing units in X-333, the second of three major process buildings.
 - Continued construction of Cells 4 and 5 of the On-Site Waste Disposal Facility (15-U-408).
 - Completed X-740 plume excavation, delivering 40,000 cubic yards of soils/engineered fill to the On-Site Waste Disposal Facility.
 - Completed construction of the eight-acre On-Site Waste Disposal Facility Sedimentation Pond 3 (15-U-408).
 - Initiated construction of On-Site Waste Disposal Facility Sedimentation Pond 1B (20-U-401).

Waste Disposal Facility waste acceptance criteria.

- Initiate disposition of X-333 process building equipment in the On-Site Waste Disposal Facility (15-U-408).
- Initiate pre-demolition of the X-333 process building.
- Initiate deactivation of X-330, the third process building.
- Continue soil excavation activities for generation of On-Site Waste Disposal Facility engineered fill.
- Continue construction of the second On-Site Waste Disposal Facility Capital Project (20-U-401).
- Continue reconfiguration/modifications of uranium and utility areas to support future contracts.
- Complete Decontamination and Decommissioning of X-626 facility.

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

Overview

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

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

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

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
\$500,000	\$130,000	-\$370,000
<ul style="list-style-type: none"> • Provided defense against legal claims filed against the Government and its contractors. • Continued record searches in support of legal claims, DOE and Department of Justice investigations/studies, Freedom of Information Act requests, and requests from both State and Federal regulatory and elected officials. • Provided payment into the Portsmouth pension program to remain in compliance with the Employee Retirement Income Security Act, DOE 350.1 and other applicable laws. 	<ul style="list-style-type: none"> • Continue to provide defense against legal claims filed against the Government and its contractors. • Continue record searches in support of legal claims, Freedom of Information Act requests, and requests from both state and Federal regulatory and elected officials. • Continue to provide payment into the Portsmouth pension program to remain in compliance with the Employee Retirement Income Security Act, DOE 350.1 and other applicable laws. 	<ul style="list-style-type: none"> • Decrease reflects reduction in litigation liabilities.

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

Overview

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

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

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

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
\$3,368,000	\$2,500,000	-\$868,000
<ul style="list-style-type: none"> Supported oversight activities of the Ohio Environmental Protection Agency. Supported the designated Site Specific Advisory Board. Supported technical/scientific activities for the Ohio University. 	<ul style="list-style-type: none"> Support oversight activities of the Ohio Environmental Protection Agency, including air monitoring by Ohio Environmental Protection Agency and Ohio Department of Health. Support the designated Site Specific Advisory Board. Support the Payment-in-Lieu of Taxes to local counties and townships. Support technical/scientific activities for the Ohio University. 	<ul style="list-style-type: none"> Decrease reflects completion of activities associated with independent sampling effort.

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

Total	Prior Years	FY 2021 Enacted	FY 2021 Actuals	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted
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Capital Operating Expenses Summary (including (Major Items of Equipment (MIE))

Capital Equipment > \$500K (including MIE)	0	0	0	0	0	+0
Minor Construction (<\$25M)	7,636	1,334	560	407	578	+4,586
Total, Capital Operating Expenses	7,636	1,334	560	407	578	+4,586

Minor Construction (Total Estimated Cost (TEC) <\$25M)

Portsmouth (Direct Funded)

Electrical Supply and Distribution Gaseous Diffusion Plant

Electrical Supply and Distribution Gaseous Diffusion Plant	7,636	1,334	560	407	578	5,164	+4,586
Total, Portsmouth	7,636	1,334	560	407	578	5,164	+4,586

Total, Capital Summary

Total, Capital Summary	7,636	1,334	560	407	578	5,164	+4,586
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**Portsmouth
Construction Projects Summary (\$K)**

Total	Prior Years	FY 2021 Enacted	FY 2021 Actuals	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted
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15-U-408, On Site Waste Disposal Facility – Initial Infrastructure and Cell 1, 4 and 5 Liner Construction

Total Estimate Cost (TEC)	268,058	180,471	44,763	45,276	44,763	0	-44,763
Other Project Costs (OPC)	16,616	10,803	1,876	1,950	1,876	0	-1,876
Total Project Cost (TPC) 15-U-408	284,674	191,274	46,639	47,226	46,639	0	-46,639

20-U-401, On Site Waste Disposal Facility – Remaining Infrastructure and Cell 2, 3, and 6 Liner Construction

Total Estimate Cost (TEC)	341,212	9,491	16,265	20,012	16,265	45,640	+29,375
Other Project Costs (OPC)	31,788	509	235	714	235	2,400	+2,165
Total Project Cost (TPC) 20-U-401	373,000	10,000	16,500	20,726	16,500	48,040	+31,540

15-U-408, On-Site Waste Disposal Facility - Initial Infrastructure & Cell 1, 4 & 5 Liner Construction
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio
Project is for Design and Construction

1. Summary, Significant Changes, and Schedule and Cost History

Summary The FY 2023 Request for the On-Site Waste Disposal Facility – Initial Infrastructure & Cell 1, 4, & 5 Liner CAP-1 Construction Project is \$0.

This project is the first in a series of line-item capital projects to construct the entire On-Site Waste Disposal Facility with ten cells, two contingency cells, and final covers. The three major infrastructure components that constitute the entirety of the On-Site Waste Disposal Facility project are: 1) the On-Site Waste Disposal Facility infrastructure/support areas, 2) the On-Site Waste Disposal Facility waste placement proper (liners/covers and leachate collection/conveyance systems) with associated impacted material transfer area, and 3) the Interim Leachate Treatment System.

For the On-Site Waste Disposal Facility – Initial Infrastructure & Cell 1, 4, & 5 Liner Construction project, DOE approved CD-0, Approve Mission Need, CD-1, Approve Alternative Selection and Cost Range, and CD-3A, Approve Start of Partial Construction/Execution, on August 28, 2015, with a preliminary cost range of \$242,000,000 to \$350,000,000.

A realignment strategy was implemented to recover some of the schedule in the On-Site Waste Disposal Facility by deferring a portion of the infrastructure not needed for the construction of the first three cell liners of the On-Site Waste Disposal Facility which includes the Integrated Leachate Treatment System (ILTS), the dedicated haul road, the Impacted Material Transfer Area (IMTA) and other associated miscellaneous support structures. This remaining infrastructure was included in the second On-Site Waste Disposal Facility project (20-U-401). The realignment strategy for CAP-1 was approved on March 17, 2017 and revised the scope of this project to include Cell 4 and Cell 5 Liners and a temporary Modular Leachate Treatment System (MLTS). The realignment strategy optimized and re-sequenced the On-Site Waste Disposal Facility project schedule to accelerate the completion of the first three cells, which are required to support disposal of decommissioning and demolition debris from the 1st (X-326) process building. The CD-1 Total Project Cost (TPC) range for the On-Site Waste Disposal Facility - Initial Infrastructure & Cell 1, 4 & 5 Liner Construction (CAP-1) Project was revised (CD-1R) to \$250,000,000 to \$340,000,000.

Completed Project Peer Reviews (PPRs), CD-2/3 ICE, and combined CD-2/3 Performance Baseline External Independent Review (EIR) / Construction Readiness Independent Project Review (IPR). Received approval for CD 2/3 on April 10, 2018, with a TPC of \$284,674,925.

The appointed Federal Project Director (FPD) for this project recently retired. This data sheet was reviewed and approved by a certified Level III Federal Project Director. The DOE is currently working to backfill this vacant position and is also in the process of appointing an Interim Level III Federal Project Director to provide oversight for the project.

Significant Changes

This Construction Project Data Sheet is an update to the FY 2022 Congressional Request data sheet and does not include a new start for the budget year.

The Total Project Cost reflected in this data sheet is the CD-2 baseline. However, it is anticipated the project will complete early and under budget.

On November 5, 2020, Ohio Environmental Protection Agency concurred with the Sitewide Waste Water Treatment Strategy which includes the Interim Leachate Treatment Systems (ILTS) Phase 2.

As of February 28, 2022, the following site preparatory activities have been completed: X-114A Facility demolition; land clearing; Sedimentation Pond 2, 3, 4, and Temporary Sediment Basin A functionally complete; Phase 1 and 2 Raw Water Line, Filling Station No. #1, #2 and Booster Station installation; On-Site Waste Disposal Facility (OSWDF) Access Control Facility; temporary trailer construction with electrical power, communications, potable water and sanitary sewer installations; perimeter fencing; and site earthwork (cut, fill, and rough grading); construction of Valve Houses 1, 4 & 5; East

**Environmental Management/
Portsmouth/15-U-408 On Site
Waste Disposal Facility**

FY 2023 Congressional Budget Justification

Laydown area; all multiple layers of Cell 1 liner installed; excavation of 720 sandstone within Cell 1 footprint and areas to the north; Phase 2 sanitary sewer; grading of On-Site Waste Disposal Facility Access and Construction Roads; surface water control channels; power and communications in preparation of future operations; operations trailer complexes; Modular Leachate Treatment System / Interim Leachate Treatment Systems civil work and the 1,000,000 gallon holding tank, 250,000 gallon equalization tank, Tension Support Structure (TSS) and conveyance lines; and installation of Modular Leachate Treatment System equipment and mechanical piping for valve houses #1 and #4. Completed start-up and readiness review for Modular Leachate Treatment System, and initiated installation of mechanical components of Valve House #5. Completed installation of Cell #1 Interim Transfer Ramp, and started utilizing the On-Site Waste Disposal Facility capacity. Completed construction of On-Site Waste Disposal Facility Cells 4 and 5 liners.

Additionally, the following work is forecasted to be complete by the end of FY 2022: includes installation of remaining perimeter fencing around the project. Development of the CD 4 final project close-out documentation and submittal to DOE headquarters for review and approval in late FY 2022.

In FY 2023, the site will work toward gaining approval of Critical Decision 4.

Critical Milestone History

The table below provides the preliminary schedule for CDs and major milestones for the Initial Infrastructure & Cell 1, 4 & 5 Liner Construction project.

		(fiscal quarter or date)						
	CD-0	Conceptual Design Complete ^a	CD-1	CD-2	Final Design Complete ^b	CD-3	D&D Complete ^e	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	N/A	TBD
FY 2017	4Q FY2015	04/10/2014	4Q FY2015	TBD	TBD	TBD	N/A	TBD
FY 2018	08/28/2015	04/10/2014	08/28/2015	2Q FY2018	TBD	TBD	N/A	TBD
FY 2019	08/28/2015	04/10/2014	08/28/2015	2Q FY2018	TBD	TBD	N/A	TBD
FY 2020	08/28/2015	04/10/2014	08/28/2015	4/10/2018	2Q FY2018	4/10/2018	N/A	3Q FY 2024
FY 2021	08/28/2015	04/10/2014	08/28/2015	4/10/2018	2/12/2019	4/10/2018	N/A	3Q FY 2024
FY 2022	08/28/2015	04/10/2014	08/28/2015	4/10/2018	2/12/2019	4/10/2018	N/A	3Q FY 2024
FY 2023	08/28/2015	04/10/2014	08/28/2015	4/10/2018	2/12/2019	4/10/2018	N/A	3Q FY 2024 ^c

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

^b Title III design scope is planned to be, in part, subcontracted through a competitively-awarded contract with an Architectural and Engineering firm.

^c Prior to CD-4, Beneficial occupancy (1st waste placement) occurred in 3Q FY 2021.

CD-0 – Approve Mission Need

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

CD-1 – Approve Alternate 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 5)

CD-4 – Approve Start of Operations or Project Completion

PB – Indicates the Performance Baseline

(Fiscal quarter or date)

CD-3A Milestones ^{ab}			
	Long Lead Procurement Complete	Initial Site Preparation Complete	Access Control Fencing Complete
FY 2015	1Q FY2015	3Q FY2015	3Q FY2015
FY 2016	2Q FY2015	4Q FY2016	4Q FY2016
FY 2017	2Q FY2017	2Q FY2017	2Q FY2017
FY 2018	2Q FY2018	2Q FY2018	2Q FY2018
FY 2019	2Q FY2018	2Q FY2018	2Q FY2018
FY 2020	3Q FY2018	3Q FY2018	3Q FY2018
FY 2021	4/10/2018	4/10/2018	4/10/2018
FY 2022	4/10/2018	4/10/2018	4/10/2018
FY 2023	4/10/2018	4/10/2018	4/10/2018

Notes: ^a Critical Decision-3A was 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. At Critical Decision-2/3 approval, all remaining Critical Decision-3A scope not completed will become part of the Critical Decision 3 scope.

^b The above milestones reflect the projected upper range finish dates of the Critical Decision-3A scope, as defined in the Critical Decision-3A proposal, in accordance with DOE Order 413.3B.

Project Cost History

(Dollars in Thousands)

	TEC, Design	TEC, Construction	TEC, Total	OPC Except D&D	OPC D&D	OPC, Total	TPC ^a
FY 2015	10,819	276,507	287,326	22,674	N/A	22,674	310,000
FY 2016	10,819	276,507	287,326	22,674	N/A	22,674	310,000
FY 2017	15,573	323,245	338,818	11,182	N/A	11,182	350,000
FY 2018	15,573	323,245	338,818	11,182	N/A	11,182	350,000
FY 2019	15,573	323,245	338,818	11,182	N/A	11,182	350,000
FY 2020	15,017	253,041	268,058	16,616	N/A	16,616	284,674
FY 2021	16,680	251,378	268,058	16,616	N/A	16,616	284,674
FY 2022	17,043	251,015	268,058	16,616	N/A	16,616	284,674
FY 2023	18,061	249,997	268,058	16,616	N/A	16,616	284,674

Note: On April 10, 2018, CD-1R/2/3 approved.

^a It is anticipated the project will complete CD-4 in 1Q FY 2023, and TPC will be significantly below the CD-2 approved baseline.

2. Project Scope and Justification

Scope

The On-Site Waste Disposal Facility initial infrastructure and Cell 1, 4 and 5 Liner Construction project includes design, construction, and startup of the Cell 1, 4 and 5 liners, including the initial infrastructure needed to support first waste placement, and decontamination and decommissioning/demolition of the X-114A Facility. The three liners consist of the following major components: installation of the associated cell liner systems and valve houses; installation of the North Leachate Transmission System; and construction of the On-Site Waste Disposal Facility temporary Modular Leachate Treatment System. Major components of the On-Site Waste Disposal Facility infrastructure included in this capital asset project are access roads; three sedimentation ponds; electrical power, communications, and raw water utilities; access control and fencing; personnel trailers; lay-down, storage, and borrow areas; and an environmental monitoring system. The initial infrastructure constitutes what is needed prior to waste placement and operation of the first three waste cells.

**Environmental Management/
Portsmouth/15-U-408 On Site
Waste Disposal Facility**

FY 2023 Congressional Budget Justification

Construction of the initial infrastructure and three cell liners required major earthwork activities including clearing/grubbing and large-scale grading involving cut and fill of soil and rock. The decommissioning/demolition of the X-114A Facility, which lies within the On-Site Waste Disposal Facility footprint, was performed in conjunction with new construction activities.

Justification

The mission need for this project was established by the approval of Mission Need (CD-0) for the On-Site Waste Disposal Facility Cell 1 Liner Construction Project on August 28, 2015, and the Mission Need (CD-0) for the On-Site Waste Disposal Facility Cell 4 and Cell 5 Liner Construction Project on August 15, 2016.

The Ohio Environmental Protection Agency and the DOE entered into a formal agreement regarding the decision-making process for the Portsmouth Gaseous Diffusion Plant D&D 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.

The On-Site Waste Disposal Facility is necessary to provide a cost-effective, reliable waste disposal location for the safe disposal of an estimated five million cubic yards of debris and engineered fill from the Portsmouth D&D Project.

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.

Key Performance Parameters

The Threshold Key Performance Parameters, represent the acceptable performance that the project must achieve. Achievement of the Threshold Key Performance Parameters will be a prerequisite for approval of CD-4, Project Completion. The Objective Key Performance Parameters represent the desired project performance.

Performance Measure	Threshold	Objective
Design and construct a North Leachate Transmission System (LTS), and a Modular Leachate Treatment System (MLTS) with a minimum design flow of 50 gallons per minute (gpm) and maximum design flow of 100 gpm.	50 gpm	100 gpm

3. Project Cost and Schedule

Financial Schedule

(dollars in thousands)

	Budget Authority (Appropriations)	Obligations	Costs
[Total Estimated Cost (TEC)]			
Design*			
FY 2015	364	364	364
FY 2016	3,899	3,899	3,899
FY 2017	4,572	4,572	4,572
FY 2018	4,021	4,021	4,021
FY 2019	3,732	3,732	3,732
FY 2020	252	252	252
FY 2021	913	913	913

(dollars in thousands)

	Budget Authority (Appropriations)	Obligations	Costs
FY 2022	308	308	308
FY 2023	0	0	0
Outyears	0	0	0
Total, Design	18,061	18,061	18,061
Construction*			
FY 2015	4,136	4,136	277
FY 2016	17,850	17,850	14,766
FY 2017	34,664	34,664	29,815
FY 2018	33,076	33,076	30,003
FY 2019	35,336	35,336	43,620
FY 2020	38,569	38,569	43,160
FY 2021	43,850	43,850	44,363
FY 2022	7,364	7,364	10,410
FY 2023	0	0	0
Outyears ^a	35,152	35,152	33,583
Total, Construction	249,997	249,997	249,997
TEC			
FY 2015	4,500	4,500	641
FY 2016	21,749	21,749	18,665
FY 2017	39,236	39,236	34,387
FY 2018	37,097	37,097	34,024
FY 2019	39,068	39,068	47,352
FY 2020	38,821	38,821	43,412
FY 2021	44,763	44,763	45,276
FY 2022	7,672	7,672	10,718
FY 2023	0	0	0
Outyears ^a	35,152	35,152	33,583
Total, TEC	268,058	268,058	268,058
[Other Project Cost (OPC)]			
OPC*			
FY 2015	0	0	0
FY 2016	2,705	2,705	2,705
FY 2017	1,932	1,932	686
FY 2018	1,785	1,785	2,039
FY 2019	2,100	2,100	2,792
FY 2020	2,281	2,281	2,338
FY 2021	1,876	1,876	1,950
FY 2022	1,228	1,228	473
FY 2023	0	0	76
Outyears ^a	2,709	2,709	3,557
Total, OPC	16,616	16,616	16,616
Total Project Cost (TPC)			
FY 2015	4,500	4,500	641
FY 2016	24,454	24,454	21,370
FY 2017	41,168	41,168	35,073

(dollars in thousands)

	Budget Authority (Appropriations)	Obligations	Costs
FY 2018	38,882	38,882	36,063
FY 2019	41,168	41,168	50,144
FY 2020	41,102	41,102	45,750
FY 2021	46,639	46,639	47,226
FY 2022	8,900	8,900	11,191
FY 2023	0	0	76
Outyears ^a	37,861 ^a	37,861	37,140
Total, TPC	284,674	284,674	284,674

^a Outyear appropriations are not anticipated to be needed based on potential CD-4 date due to cost savings.

*TEC and OPC funds are appropriated at the Total Project level (15-U-408).

**FY22 Reflects "Omnibus" appropriated funding to complete CD-4 consistent with current project schedule.

Note: Beginning in FY 2017, OPC was appropriated to the capital construction line-item account (15-U-408) within PBS PO-0040, Nuclear Facility D&D. Prior to FY 2017, OPC was appropriated to the operating account within PBS PO-0040. Title III design scope is planned to be, in part, subcontracted through a competitively-awarded contract with an Architectural and Engineering firm.

Details of Project Cost Estimate

(dollars in thousands)

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

Design

Design	17,923	16,905	16,542
Contingency	138	138	138
Total, Design	18,061	17,043	16,680

Construction

Building & Site Work	235,326	236,344	236,707
D&D	563	563	563
Contingency	14,108	14,108	14,108
Total, Construction	249,997	251,105	251,378

Total, TEC	268,058	268,058	268,058
Contingency, TEC	14,246	14,246	14,246

Other Project Cost (OPC)

OPC except D&D

Conceptual Planning	0	0	0
Cold startup	2,339	2,339	2,339
Other OPC Costs	13,948	13,948	13,948
Contingency	329	329	329
Total, OPC except D&D	16,616	16,616	16,616

(dollars in thousands)

Current Total Estimate	Previous Total Estimate	Original Validated Baseline
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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 16,616 16,616 16,616

Contingency, OPC 329 329 329

Total, TPC 284,674 284,674 284,674

Total, Contingency 14,575 14,575 14,575

Schedule of Appropriation Requests

(Dollars in Thousands)

Request Year	Prior Years	FY 2022	FY 2023	Outyears	Total
FY 2015	TEC	287,326			287,326
	OPC	22,674			22,674
	TPC	310,000			310,000
FY 2016	TEC	287,326			287,326
	OPC	22,674			22,674
	TPC	310,000			310,000
FY 2017	TEC	338,355			338,355
	OPC	11,645			11,645
	TPC	350,000			350,000
FY 2018	TEC	338,818			338,818
	OPC	11.182			11.182
	TPC	350,000			350,000
FY 2019	TEC	338,818			338,818
	OPC	11.182			11.182
	TPC	350,000			350,000
FY 2020	TEC	179,674		88,384	268,058
	OPC	11,600		5,016	16,616
	TPC	191,274		93,400	284,674
FY 2021	TEC	223,991		44,067	268,058

	OPC	13,922		2,694	16,616
	TPC	237,913		46,761	284,674
FY 2022	TEC	226,153	4,750	37,155	268,058
	OPC	11,760	250	4,606	16,616
	TPC	237,913	5,000	41,761	284,674
FY 2023	TEC	225,234	7,672	35,152	268,058
	OPC	12,679	1,228	2,709	16,616
	TPC	237,913	8,900	37,861	284,674

4. Related Operations and Maintenance Funding Requirements

Start of Operation or Beneficial Occupancy (fiscal quarter or date)	3Q FY 2021
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

Related Funding Requirements

(dollars in thousands, \$K)

	Annual Costs		Life Cycle Costs	
	Current Total Estimate	Previous Total Estimate	Current Total Estimate	Previous Total Estimate
Operations	13,000	13,000	65,000	65,000
Utilities	330	330	1,650	1,650
Maintenance	931	931	4,655	4,655
Total, Operations & Maintenance	14,261	14,261	71,305	71,305

Note: Post-closure and long-term stewardship activities are not included within this table or anywhere else on this Construction Project Data Sheet.

5. D&D Information

This project required the removal of a 25-year-old outdoor firing range that was located within the planned footprint of the On-Site Waste Disposal Facility. Building demolition and debris removal was completed August 3, 2016, and construction completion report was delivered October 28, 2016. This structure is the only building slated for demolition and no further D&D activities are planned for this project.

Area	Square Feet
X-114A Outdoor Firing Range	1,410

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.

6. Acquisition Approach

The acquisition approach for the project is 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 subcontracted through a competitively-awarded contract with an Architectural and Engineering firm.

**20-U-401 On-Site Waste Disposal Facility – Remaining Infrastructure and Cell 2, 3 and 6 Liner Construction
Portsmouth Gaseous Diffusion Plant, Piketon, Ohio
Project is for Design and Construction**

1. Summary, Significant Changes, and Schedule and Cost History

Summary

The FY 2023 Request for the On-Site Waste Disposal Facility – Remaining Infrastructure & Cell 2, 3, & 6 Liner CAP-2 Construction Project is \$48,040,000 of Total Project Cost (TPC) funding. In FY 2023, funding will support continued construction of the Impacted Material Transfer Area (IMTA), construction of Wheel Wash, continued construction of Integrated Leachate Treatment System (ILTS), continued excavation of Cell 2 bowl and south LTS areas, and continued installation of valve houses 2, 3, 6, 7, and 10. Additionally, this funding will allow for continuation of CFC design, procurement, and construction activities for this project.

The first Process Building (X-326) is being demolished, and the On-Site Waste Disposal Facility CAP-1 (15-U-408) provides the disposal capacity for the X-326 demolition debris. The next Process Building (X-333) is anticipated to be ready for pre-demolition in FY 2023 and is anticipated to start demolition in FY 2024. Disposal capacity for demolition debris has become the Portsmouth Site critical path which required CAP-2 (the construction of remaining infrastructure and three additional waste cells) be initiated in FY 2020 to support the demolition of X-333.

Completed CD-1/2/3 Independent Cost Estimate, and combined CD-1/2/3 Performance Baseline External Independent Review (EIR) / Construction Readiness Independent Project Review (IPR). Received approval for CD 1/2/3 on February 25, 2020, with a TPC of \$373,000,000.

The appointed Federal Project Director (FPD) for this project recently retired. This data sheet was reviewed and approved by a certified Level III Federal Project Director. The DOE is currently working to backfill this vacant position and is also in the process of appointing an Interim Level III Federal Project Director to provide oversight for the project.

Significant Changes

This Construction Project Data Sheet is an update to the FY 2023 Congressional Request data sheet and does not include a new start for the budget year.

As of February 28, 2022, the following site preparatory activities have been completed: Initial paving of Fog Road Bypass, clearing and grubbing of trees and vegetation, design of Sedimentation Pond 1B, initiated procurement of long lead materials for Sedimentation Pond 1B, rough grading of Impacted Material Transfer Area (IMTA), initiated placement of aggregate for Impacted Material Transfer Area Haul Road, construction of On-Site Waste Disposal Facility interior haul road, initiated installation of Impacted Material Transfer Area Scale House, completed construction of East Maintenance Building, and continued construction of Sedimentation Pond 1B.

Additionally, the following work is projected to be completed by the end of FY 2023: Construction of East Maintenance Building and Sedimentation Pond 1B, excavation of South Leachate Transmission System (LTS), installation of the support facility, Impacted Material Transfer Area Haul Road and Fog Road modifications, installation of ILTS metal building & overhead crane, and construction of Valve Houses 2,3,7, & 10.

Critical Milestone History

The table below provides the preliminary schedule for Critical Decisions and major milestones for the Remaining Infrastructure and Cell 2, 3, and 6 Liner Construction project.

(fiscal quarter or date)

	CD-0*	Conceptual Design Complete	CD-1	CD-2	Final Design Complete**	CD-3	Construction on D&D Complete	CD-4
FY 2020	4Q FY2019	04/10/2014***	4Q FY 2019	4Q FY 2019	4Q FY 2020	4Q FY 2019	N/A	TBD
FY 2021	8/15/2016	04/10/2014***	2Q FY 2020	2Q FY 2020	2Q FY 2020	2Q FY 2020	N/A	TBD
FY 2022	8/15/2016	04/10/2014***	02/25/2020	02/25/2020	4Q FY 2020	02/25/2020	N/A	4Q FY 2026
FY 2023	8/15/2016	04/10/2014***	02/25/2020	02/25/2020	4Q FY 2020	02/25/2020	N/A	4Q FY 2026

* The original CD-0 for the On-Site Waste Disposal Facility CAP-2 Project was approved on August 15, 2016.

** Regulatory Final Design for the entire On-Site Waste Disposal Facility, including the components included in the On-Site Waste Disposal Facility CAP-2 Project, will be completed as part of the On-Site Waste Disposal Facility CAP-1 Project (as shown). Certified for Construction design for the On-Site Waste Disposal Facility CAP-2 Project components will be completed within the On-Site Waste Disposal Facility CAP-2 Project.

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

CD-0 – Approve Mission Need

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

CD-1 – Approve Alternate 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 5)

CD-4 – Approve of Start of Operations or Project Completion

Project Cost History

	TEC, Design	TEC, Construction	TEC, Total	OPC Except D&D	OPC D&D	OPC, Total	TPC
FY 2020	7,900	TBD	TBD	TBD	N/A	TBD	TBD
FY 2021	TBD	TBD	TBD	TBD	N/A	TBD	TBD
FY 2022	43,438	297,774	341,212	31,788	N/A	31,788	373,000
FY 2023	43,438	297,774	341,212	31,788	N/A	31,788	373,000

2. Project Scope and Justification

Scope

The current scope of the On-Site Waste Disposal Facility CAP-2 project consists of construction of the remaining infrastructure for the On-Site Waste Disposal Facility which includes the Integrated Leachate Treatment System (ILTS), the dedicated haul road, the Impacted Material Transfer Area (IMTA) and other associated miscellaneous support structures. To support and advance the Portsmouth Deactivation and Decommissioning Project mission (i.e., demolition of the next Portsmouth process building [X-333]), it is necessary to include and construct the next three cell liners (i.e., Cells 2, 3 and 6), valve houses and South Leachate Transmission System (i.e., Cells 2, 3 and 6) along with the remaining infrastructure as part of the On-Site Waste Disposal Facility CAP-2 Project. The project developed a combined CD-1/2/3 package which was approved on February 25, 2020.

Justification

The Ohio Environmental Protection Agency and the DOE have entered into a formal agreement regarding the decision-making process for the Portsmouth Deactivation and Decommissioning Project and for the associated waste management.

**Environmental Management/
Portsmouth/20-U-401 On Site
Waste Disposal Facility –
Remaining Infrastructure and Cell 2, 3
and 6 Liner Construction**

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.

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 Deactivation and Decommissioning Project that is protective of human health, safety and the environment. Additionally, this action was 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 the Portsmouth Deactivation and Decommissioning Project.

The mission need for this project was established by the approval of Mission Need (CD-0) for the On-Site Waste Disposal Facility CAP-1 on August 28, 2015 and the Mission Need (CD-0) for the On-Site Waste Disposal Facility CAP-2 on August 15, 2016. The remaining infrastructure to be constructed within this project is necessary to increase the efficiency and productivity for transportation and waste placement operations for the life-cycle of the Portsmouth Deactivation and Decommissioning Project. The advancement of Cell 2, 3, and 6 Liner construction is needed to support the Portsmouth site Deactivation and Decommissioning objectives.

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*.

Key Performance Parameters

The Threshold Key Performance Parameters, represent the acceptable performance that the project must achieve. Achievement of the Threshold Key Performance Parameters will be a prerequisite for approval of CD-4, Project Completion. The Objective Key Performance Parameters represent the desired project performance.

Performance Measure	Threshold	Objective
Construct an Interim Leachate Treatment System (ILTS) designed to treat leachate and impacted water from the OSWDF at a max/peak flow rate of 800 gallons per minute (gpm) for discharge to surface waters of the State of Ohio with effluent water quality that meets the standards established by the National Pollutant Discharge Elimination System (NPDES) permit issued by Ohio EPA.		

3. Project Cost and Schedule

Financial Schedule

	(dollars in thousands)		
	Appropriations	Obligations	Costs
[Total Estimated Cost (TEC)]			
Design*			
FY 2020	1,914	1,914	1,914
FY 2021	5,295	5,295	5,295
FY 2022	11,735	11,735	11,735
FY 2023	725	725	725

**Environmental Management/
Portsmouth/20-U-401 On Site
Waste Disposal Facility –
Remaining Infrastructure and Cell 2, 3
and 6 Liner Construction**

(dollars in thousands)

	Appropriations	Obligations	Costs
FY 2024	9,400	9,400	9,400
FY 2025	9,400	9,400	9,400
FY 2026	4,969	4,969	4,969
Total, Design	43,438	43,438	43,438
Construction*			
FY 2020	7,577	7,577	3,678
FY 2021	10,970	10,970	14,717
FY 2022	50,695	50,695	48,065
FY 2023	44,915	44,915	45,074
FY 2024	56,152	56,152	55,758
FY 2025	84,382	84,382	83,542
FY 2026	43,083	43,083	46,940
Total, Construction	297,774	297,774	297,774
TEC			
FY 2020	9,491	9,491	5,592
FY 2021	16,265	16,265	20,012
FY 2022	62,430	62,430	59,800
FY 2023	45,640	45,640	45,799
FY 2024	65,552	65,552	65,158
FY 2025	93,782	93,782	92,942
FY 2026	48,052	48,052	51,909
Total, TEC	341,212	341,212	341,212
[Other Project Cost (OPC)]*			
FY 2020	509	509	25
FY 2021	235	235	714
FY 2022	2,805	2,805	2,600
FY 2023	2,400	2,400	2,400
FY 2024	9,000	9,000	9,000
FY 2025	9,000	9,000	9,000
FY 2026	7,839	7,839	8,049
Total, OPC	31,788	31,788	31,788
Total Project Cost (TPC)			
FY 2020	10,000	10,000	5,617
FY 2021	16,500	16,500	20,726
FY 2022	65,235	65,235	62,400
FY 2023	48,040	48,040	48,199
FY 2024	74,552	74,552	74,158
FY 2025	102,782	102,782	101,942
FY 2026	55,891	55,891	59,958
Total, TPC	373,000	373,000	373,000

*TEC and OPC funds are appropriated at the Total Project level

**Environmental Management/
Portsmouth/20-U-401 On Site
Waste Disposal Facility –
Remaining Infrastructure and Cell 2, 3
and 6 Liner Construction**

FY 2023 Congressional Budget Justification

Details of Project Cost Estimate

(dollars in thousands)

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

Design

Design	43,438	43,438	43,438
Contingency	0	0	0
Total, Design	43,438	43,438	43,438

Construction

Building & Site Work	281,922	281,922	281,922
D&D	0	0	0
Contingency	15,852	15,852	15,852
Total, Construction	297,774	297,774	297,774

Total, TEC	341,212	341,212	341,212
Contingency, TEC	15,852	15,852	15,852

Other Project Cost (OPC)

OPC except D&D

Conceptual Planning	0	0	0
Cold startup	0	0	0
Other OPC Costs	31,085	31,085	31,085
Contingency	703	703	703
Total, OPC except D&D	31,788	31,788	31,788

D&D (if any)

D&D	0	0	0
Contingency	0	0	0
Total, D&D	0	0	0

Total, OPC	31,788	31,788	31,788
Contingency, OPC	703	703	703

Total, TPC	373,000	373,000	373,000
Total, Contingency	16,555	16,555	16,555

Schedule of Appropriation Requests

(Dollars in Thousands)

Request Year		Prior Years	FY 2022	FY 2023	Outyears	Total
FY 2020	TEC	9,400	TBD			TBD
	OPC	600	TBD			TBD

**Environmental Management/
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Waste Disposal Facility –
Remaining Infrastructure and Cell 2, 3
and 6 Liner Construction**

	TPC	10,000	TBD		TBD
FY 2021	TEC	17,800	TBD		TBD
	OPC	2,200	TBD		TBD
	TPC	20,000	TBD		TBD
FY 2022	TEC	25,841	60,735	254,636	341,212
	OPC	659	4,500	26,629	31,788
	TPC	26,500	65,235	281,265	373,000
FY 2023	TEC	25,756	62,430	45,640	207,386
	OPC	744	2,805	2,400	25,839
	TPC	26,500	65,235	48,040	233,225

4. Related Operations and Maintenance Funding Requirements

Start of Operation or Beneficial Occupancy (fiscal quarter or date)	FY25 Q4
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

(dollars in thousands, \$K)

	Annual Costs*		Life Cycle Costs*	
	Current Total Estimate	Previous Total Estimate	Current Total Estimate	Previous Total Estimate
Operations	13,000	13,000	65,000	65,000
Utilities	330	330	1,650	1,650
Maintenance	931	931	4,655	4,655
Total, Operations & Maintenance	14,261	14,261	71,305	71,305

*Post-closure and long-term stewardship activities are not included within this table or anywhere else on this Construction Project Data Sheet.

5. 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.

**Environmental Management/
Portsmouth/20-U-401 On Site
Waste Disposal Facility –
Remaining Infrastructure and Cell 2, 3
and 6 Liner Construction**

6. Acquisition Approach

The acquisition approach for the project continues 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 Deactivation and Decommissioning Prime Contract requirements under FAR 44. Title III design scope is subcontracted through a competitively awarded contract with an Architectural and Engineering firm.

Richland

Overview

The cleanup of the Richland Site supports the Department of Energy in meeting the challenges of the nation's Manhattan Project and Cold War environmental 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. The Richland Operations Office provides landlord site services for the entire Hanford site, including for the Office of River Protection. The Office of River Protection and the Richland Operations Office work together to facilitate mutual mission success.

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 public and the environment (e.g., groundwater, Columbia River, etc.).

Hanford also preserves and provides public access to the B Reactor National Historic Landmark and several other historic facilities as part of the Manhattan Project National Historical Park, which is co-administered by the Department of Energy and the National Park Service.

DOE serves as a federal trustee for natural and cultural resources under its jurisdiction at the 580-square-mile Hanford Site, and interacts with other federal, Tribal, state and local governments, regional stakeholders and members of the public with an interest in these resources and in their long-term management. DOE Hanford fulfills its trustee responsibilities mainly through its land management program as described in the Hanford Site Comprehensive Land Use Plan [Record of Decision: Hanford Comprehensive Land-Use Plan Environmental Impact Statement (Federal Register November 12, 1999, 64 FR 61615)], and through the Hanford Natural Resource Trustee Council.

Proclamation 7319, Establishment of the Hanford Reach National Monument June 9, 2000, assigned DOE responsibility to manage about 290 square miles of the Site as a Monument for the protection of nationally significant natural, cultural, geologic and other resources. DOE maintains a permit and Memorandum of Understanding with the U.S. Fish and Wildlife Service for management of most of the Monument, including Laliik (Rattlesnake Mountain), which is eligible for listing on the National Register of Historic Places. In addition to Laliik, the Hanford Site contains numerous Tribal sacred places and other important Tribal resources. While implementing its cleanup mission at the Hanford Site, DOE routinely engages in consultation under the National Historic Preservation Act and the DOE Order for Tribal Consultation.

The Department is working to reduce the footprint at the Richland Site and has realized significant cleanup momentum over the past several years. As such, efforts continue 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 \$212,800,000.

The Richland Operations Office plans to purchase the following vehicles in FY 2023: 3 Ambulances; 2 Fire Engine Pumper Trucks; 1 Ladder Fire Truck; 1 Bucket Truck; 1 Septic Truck; 2 Purge Water Trucks; 1 Geophysical Logging Truck; 1 Water Truck; 1 Vacuum Excavation Truck; 1 Asphalt Patch Truck and 1 Step-Van. The total estimated cost of this equipment is \$5,100,000.

Highlights of the FY 2023 Budget Request

The Richland budget request is designed to maintain safe operations; perform Hanford site-wide services; support Direct Feed Low-Activity Waste startup and commissioning; and conduct critical site infrastructure projects. The budget request also supports progress in modifications to the Waste Encapsulation and Storage Facility for transfer of the cesium-strontium capsules to dry storage by August 2025, continued groundwater treatment progress, completion of the 105-KE Reactor interim safe storage, and completion of 105KW Fuel Storage Basin above and below water debris disposition and deactivation activities.

The Richland Operations Office also provides the Hanford site-wide landlord services. The services include, but are not limited to, roads and transportation services; electrical and water services; facility maintenance; network and software engineering; physical and cyber security, and records management.

Continue stakeholder outreach and Tribal consultation on the Justice40 Initiative.

FY 2022 & FY 2023 Key Milestones/Outlook

The following listing represents key milestones included in the Tri-Party Agreement for performance in fiscal years 2022 and 2023.

- (December 2021) M-026-01AE, Submit Hanford Land Disposal Restrictions Summary Report (for 2020).
- (April 2022) M-026-01AF, Submit Hanford Land Disposal Restrictions Summary Report.
- (June 2022) M-016-257, Complete Confirmation Sampling/No Further Action for all the waste sites as identified in TPA Change Control Form M-16-20-01.
- (September 2022) M-016-258, Complete Confirmation Sampling/No Further Action and Remove Treat and Dispose for all the waste sites as identified in TPA Change Control Form M-16-21-01.
- (September 2022) M-016-173, Select K Basin Sludge Treatment and Packaging Technology.
- (December 2022) M-024-73, Complete construction of all groundwater wells listed for CY2022 and before.
- (June 2023) M-024-58P, Initiate Discussions of Well Commitments.
- (September 2023) M-016-259, Complete Remove Treat and Dispose for all the waste sites as identified in TPA Change Control Form M-16-21-01.

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. Negotiation of revised Tri-Party Agreement Milestones to reflect the impact of technical issues and other challenges is in progress.

Contractual Framework

Current prime contracts at Richland include:

- The Central Plateau Cleanup Contract is an Indefinite Delivery/Indefinite Quantity contract to achieve significant risk and financial liability reduction that provides the best overall optimal solution to Hanford Site completion and closure. The contract is one of the first Environmental Management End State contracts in the DOE complex. The contract was awarded on December 12, 2019, and the 10-year ordering period lasts through December 11, 2029. Task orders to perform specific end states can be issued for periods of up to five years and can be issued at any time during the ordering period. Contract transition began on October 5, 2020 and was completed on January 24, 2021.
- The Hanford Mission Integration Solutions Contract is a cost-plus-award-fee contract for infrastructure support services in support of Hanford Site cleanup, with an Indefinite Delivery Indefinite Quantity component to facilitate specialized task orders. This contract was awarded on December 5, 2019. This contract has a base period of performance from January 25, 2021, through August 16, 2025, with one 3-year option and one 2-year option. The contract base period of performance was preceded by a 161-day transition that started on August 17, 2020.
- The Hanford Occupational Medical Services Contract is a hybrid contract for Hanford Site occupational medical services that includes firm-fixed price with cost reimbursement and an Indefinite Delivery Indefinite Quantity component to facilitate specialized task orders. This contract was awarded on December 31, 2018. Contract transition completed on March 31, 2019, and HPM Corporation began the new contract on April 1, 2019. The new HPM contract has a 3-year base period of December 31, 2018, to December 31, 2021, and two 24-month option periods to December 31, 2025.

Strategic Management

The Hanford mission includes eliminating hazards near the Columbia River by cleaning up the River Corridor and treating contaminated groundwater near the Columbia River. 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 the Hanford Federal Facility Agreement and Consent Order, known as the Tri-Party Agreement established on May 15, 1989. The Tri-Party Agreement include but is not limited to: (1) cleanup commitments; (2) agency cleanup responsibilities; and (3) enforceable milestones to achieve regulatory compliance and remediation.

Richland

Funding (\$K)

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted	FY 2023 Request vs FY 2021 Enacted (%)
Defense Environmental Cleanup					
Hanford Site					
Central Plateau Remediation					
RL-0011 / NM Stabilization and Disposition-PFP	17,359	17,359	0	-17,359	-100%
RL-0013C / Solid Waste Stabilization and Disposition- 2035					
Operating	182,340	182,340	169,600	-12,740	-7%
Construction					
18-D-404: Modification of Waste Encapsulation and Storage Facility, Richland, WA (PBS RL-0013C)	15,000	15,000	3,100	-11,900	-79%
	197,340	197,340	172,700	-24,640	-12%
RL-0030 / Soil and Water Remediation-Groundwater/Vadose Zone - 2035	116,966	116,966	152,700	+35,734	+31%
RL-0201 / Hanford Site Wide Services					
Operating	353,335	353,335	327,940	-25,395	-7%
Construction					
22-D-401: 400 Area Fire Station, (RL-0201)	0	0	3,100	+3,100	+100%
22-D-402: 200 Area Water Treatment Facility, (RL-0201)	0	0	8,900	+8,900	+100%
23-D-404: 181D Export Water System Reconfiguration and Upgrade	0	0	6,770	+6,770	+100%
23-D-405: 181B Export Water System Reconfiguration and Upgrade	0	0	480	+480	+100%
	353,335	353,335	347,190	-6,145	-2%
Subtotal, Central Plateau Remediation	685,000	685,000	672,590	-12,410	-2%
Richland Community and Regulatory Support					
RL-0100 / Richland Community and Regulatory Support	8,621	8,621	10,013	+1,392	+16%
River Corridor and Other Cleanup Operations					
RL-0040 / Nuclear Facility D&D-Remainder of Hanford - 2035	101,044	101,044	49,000	-52,044	-52%
RL-0041 / Nuclear Facility D&D-River Corridor Closure Project	131,435	131,435	86,000	-45,435	-35%
Subtotal, River Corridor and Other Cleanup Operations	232,479	232,479	135,000	-97,479	-42%
Total, Hanford Site	926,100	926,100	817,603	-108,497	-12%

Environmental Management/
Richland

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted	FY 2023 Request vs FY 2021 Enacted (%)
Safeguards and Security					
RL-0020 / Safeguards and Security	96,300	96,300	96,300	+0	+0%
Total, Defense Environmental Cleanup	1,022,400	1,022,400	913,903	-108,497	-11%
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	2,500	2,500	3,200	+700	+28%
Total, Richland	1,024,900	1,024,900	917,103	-107,797	-11%

Richland
Explanation of Major Changes (\$K)

FY 2021 Enacted	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted
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Defense Environmental Cleanup

Hanford Site

Central Plateau Remediation

RL-0011 / NM Stabilization and Disposition-PFP

- The decrease is associated with the completion of the decommissioning and demolition activity of the Plutonium Finishing Plant facilities to slab-on-grade.

17,359 0 -17,359

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

- The decrease is associated with reduced funding need for the Waste Encapsulation and Storage Facility modifications projects as the work completes, and focus on critical waste management facilities maintenance and Environmental Restoration Disposal Facility equipment purchases.

197,340 172,700 -24,640

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

- The increase supports Bio-mobilization/Bio-intrusion Evaluation and Comprehensive Environmental Response, Compensation, and Liability Act Records of Decision and implementation for the River Corridor. Also supports progress towards completing the Remedial Action Work Plan scope for implementation of the 200-BP-5/200-PO-1 Interim Record of Decision, including upgrades at the 200W pump and treat.

116,966 152,700 +35,734

RL-0201 / Hanford Site Wide Services

- The decrease results from progress on various infrastructure projects to sustain delivery of critical services including utilities, roads, fire/emergency services, Information Technology systems and equipment maintenance while establishing two construction projects: 181D River Pump House and Feed Pump Building (L-781), and 181B River Pump House (L-826) as line items due to project management challenges resulting in significant cost growth.

353,335 347,190 -6,145

Richland Community and Regulatory Support

RL-0100 / Richland Community and Regulatory Support

- The increase supports the Payment in Lieu of Tax payments.

8,621 10,013 +1,392

River Corridor and Other Cleanup Operations

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

- The funding for this activity has been reduced to support higher priorities across the One Hanford complex.

101,044 49,000 -52,044

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

	FY 2021 Enacted	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted
<ul style="list-style-type: none"> The funding for this activity has been reduced to support higher priorities across the One Hanford complex. 	131,435	86,000	-45,435
Safeguards and Security			
RL-0020 / Safeguards and Security			
<ul style="list-style-type: none"> No change. 	96,300	96,300	+0
Non-Defense Environmental Cleanup			
Fast Flux Test Reactor Facility D&D			
RL-0042 / Nuclear Facility D&D-Fast Flux Test Facility Project			
<ul style="list-style-type: none"> No significant change. 	2,500	3,200	+700
Total, Richland	1,024,900	917,103	-107,797

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 and disposal of irradiated nuclear fuel, transuranic waste, mixed low-level radioactive waste, and low-level radioactive 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 and Environmental Restoration Disposal Facility disposal operations. 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 radioactive 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 radioactive waste will be disposed through site closure.

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

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
\$197,340,000	\$172,700,000	-\$24,640,000
<ul style="list-style-type: none"> 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. Supported safe storage of 1,936 cesium and strontium capsules in the Waste Encapsulation and Storage Facility. Maintained 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 	<ul style="list-style-type: none"> Support operations necessary to provide for safe and compliant operations of waste storage facilities for the Hanford Site. Support safe disposal operations of the Environmental Restoration Disposal Facility. Integrated Disposal Facility: Complete all upgrades and permitting needed to support Direct Feed Low-Activity Waste startup. Near completion of modifications to the Waste Encapsulation and Storage Facility necessary to begin moving the cesium-strontium capsules to dry storage. Procurement of components for the Cesium/Strontium capsules cask storage system. 	<ul style="list-style-type: none"> The decrease is associated with reduced funding need for the Waste Encapsulation and Storage Facility modifications projects as the work completes, and focus on critical waste management facilities maintenance and Environmental Restoration Disposal Facility equipment purchases.

the operations necessary to support K-Basin sludge storage.

- Provided core project management staff for waste management operations, cesium/strontium capsules, and irradiated nuclear fuel.
- Maintained 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.
- Repackaged large container transuranic mixed waste.

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

Overview

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

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

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

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
\$116,966,000	\$152,700,000	+\$35,734,000
<ul style="list-style-type: none"> Continued 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. Continued to meet Tri-Party Agreement M-24 Well Drilling commitments. 	<ul style="list-style-type: none"> Continue site-wide groundwater contamination monitoring activities, as well as pump and treat operations of all six Pump and Treat Facilities, including the well realignments and well drilling necessary to effectively remediate groundwater contamination. Continue the technical integration of site-wide groundwater and vadose zone cleanup activities. Continue Cumulative Impact Evaluation tool execution enabling the evaluation of site-wide groundwater impacts allowing for risk prioritization of waste sites to more efficiently 	<ul style="list-style-type: none"> The increase supports Bio-mobilization/Bio-intrusion Evaluation and Comprehensive Environmental Response, Compensation, and Liability Act Records of Decision and implementation for the River Corridor. Also supports progress towards completing the Remedial Action Work Plan scope for implementation of the 200-BP-5/200-PO-1 Interim Record of Decision, including upgrades at the 200W pump and treat.

characterize and make final decisions on the Central Plateau.

- Support Bio-mobilization/Bio-intrusion Evaluation which will demonstrate that shallow Remove Treat Dispose will provide adequate risk reduction and protection.
- Support monitoring well drilling across all the Operable Units and continues to meet Tri-Party Agreement M-24 Resource Conservation and Recovery Act Well Drilling Commitments.
- Supports River Corridor Groundwater Records of Decision and Remedial Action Implementation.
- Supports Central Plateau GW Remedial Action Implementation (Substantial progress towards completing the Remedial Action Work Plan scope for implementation of the 200-BP-5/200-PO-1 Interim ROD, including upgrades at the 200W Pump & Treat).

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 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 Minor Construction 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. This scope also includes funding of Cooperative Agreements that support Tribal engagement and consultation with DOE’s cleanup and land management decision-making processes and other areas of interest for Tribes with certain rights at the Hanford Site pursuant to their respective treaties of 1855, including the Confederated Tribes and Bands of the Yakama Nation, the Confederated Tribes of the Umatilla Indian Reservation, and the Nez Perce Tribe, as well as engagement with the Wanapum People, who have direct cultural and ancestral ties at the Hanford Site.

Hanford Site Wide Services (PBS: RL-0201)

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
\$353,335,000	\$347,190,000	-\$6,145,000
<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> Supports contracted services for occupational health; Information Technology support; performance assessment activities; records management; and general services such as custodial, land management, regulatory grants, permits, and fees, litigation support, additional Tribal involvement and training, National Historic Preservation Act compliance, and rent. Supports safe operations and site services necessary to maintain functionality of required site infrastructure; fire protection; emergency management services; physical control of government property and equipment; services including, but not limited to, utilities and other 	<ul style="list-style-type: none"> The decrease results from progress on various infrastructure projects to sustain delivery of critical services including utilities, roads, fire/emergency services, Information Technology systems and equipment maintenance while establishing two construction projects: 181D River Pump House and Feed Pump Building (L-781), and 181B River Pump House (L-826) as line items due to project management challenges resulting in significant cost growth.

functions; safety, environmental, health, and training; business services; and information management.

- Supports site infrastructure requirements in support of Direct Feed Low Activity Waste commissioning and start-up.
- Supports establishment of two line-item construction projects, 181D River Pump House and Feed Pump Building (L-781), 181B River Pump House (L-826), and continuation of the 400 Area Fire Station and 200 Area Water Treatment Facility as line items.

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 stakeholder support and assistance payments. The activities included in this PBS are: 1) grants to Washington State and Oregon State; and 2) funding to support the Hanford Advisory Board and related activities; and 3) PILT (payment in lieu of taxes). 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 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
\$8,621,000	\$10,013,000	+\$1,392,000
<ul style="list-style-type: none"> Supported Washington and Oregon States' emergency preparedness, environmental oversight, Hanford Advisory Board and other related activities. Supported Washington State Department of Ecology's Resource Conservation and Recovery Act mixed waste fee and Washington State Department of Health's air emissions monitoring invoice and payment-in-lieu-of-taxes to Grant, Benton, and Franklin Counties. 	<ul style="list-style-type: none"> Support Washington and Oregon States' emergency preparedness, environmental oversight, and Hanford Advisory Board and payment in lieu of taxes. 	<ul style="list-style-type: none"> The increase supports the Payment in Lieu of Tax payments.

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 - B Plant, T Plant, U Plant, PUREX, and REDOX); remediation of all 200 Area waste sites containing large inventories of 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; 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.

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

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
\$101,044,000	\$49,000,000	-\$52,044,000
<ul style="list-style-type: none"> Supported 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. Supported aging facilities risk reduction activities. Supported REDOX canyon ventilation modifications and hazard mitigation activities. 	<ul style="list-style-type: none"> Support surveillance and maintenance activities necessary to ensure safety for waste sites and surplus facilities on Hanford's Central Plateau. Also supports project management functions that include: Environment, Safety and Health oversight, quality management, safety and job hazards analysis, technical support, and integration with site activities. Supports aging facility risk mitigation activities. 	<ul style="list-style-type: none"> The funding for this activity has been reduced to support higher priorities across the One Hanford complex.

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, comprised of the remaining 618-11 burial grounds 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.

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

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
\$131,435,000	\$86,000,000	-\$45,435,000
<ul style="list-style-type: none"> Supported safe activities for K Area Remediation. Continued remediation of the highly radioactive waste site 300-296 waste located beneath the 324 Building (i.e., the Radiochemical Engineering Complex), in the 300 Area close to the City of Richland. Supported progress of 105KW Fuel Storage Basin above and below water debris disposition and deactivation activities to prepare for the basin dewatering. Supported progress toward facility and waste remediation efforts in the 100 K Area. 	<ul style="list-style-type: none"> Provide operations and maintenance support to maintain the K West Basin, a Category 2 nuclear facility, in a safe and compliant manner. Supports surveillance and maintenance activities. Continue to support operations necessary to provide for safe and compliant monitoring of the 324 Building. Complete 105 K West Fuel Storage Basin above and below water debris disposition and deactivation activities to prepare for the basin dewatering. Supports completion of 105-KE ISS and continued 100K Area (inside the fence) structure demolition. 	<ul style="list-style-type: none"> The funding for this activity has been reduced to support higher priorities across the One Hanford complex.

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 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
\$96,300,000	\$96,300,000	+\$0
<ul style="list-style-type: none"> • Provided a Safeguards and Security services program at the Hanford Site, including protection of Category I Spent Nuclear Material. • Provided 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. • Continued implementation of revised access controls and common identification standards (Homeland Security Presidential Directive-12). 	<ul style="list-style-type: none"> • Provide services within the Safeguards and Security programs for the Hanford Site, including protection of Category I Spent Nuclear Material. Safeguards and Security services are provided 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. • Support Design Basis Threat, Cybersecurity, and Industrial Controls activities to address evolving threats and requirements. 	<ul style="list-style-type: none"> • No change.

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 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
\$2,500,000	\$3,200,000	+\$700,000
<ul style="list-style-type: none"> Supported 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. 	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> No significant change.

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

Pursuant to Section 3121 of the Ike Skelton National Defense Authorization Act for FY 2011 (P.L. 111-383), notification is being provided for general plant projects with a total estimated cost of more than \$5 million planned for execution between FY 2022 and FY 2023.

Total	Prior Years	FY 2021 Enacted	FY 2021 Actuals	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted
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Capital Operating Expenses Summary (including (Major Items of Equipment (MIE))

Capital Equipment > \$500K (including MIE)	0	0	0	0	0	0	0
Accelerator Improvement Projects (AIP) (<\$5M)	0	0	0	0	0	0	0
Minor Construction (<\$25M)	61,683	17,813	5,851	5,381	5,851	32,165	+26,314
Total, Capital Operating Expenses	61,683	17,813	5,851	5,381	5,851	32,165	+26,314

Minor Construction Projects (Total Estimated Cost (TEC) <\$25M)

Richland (Direct Funded)

L-707, Advanced Electrical Metering ^a	2,483	59	1,212	96	1,212	0	-1,212
L-819, High Capacity Fiber Optic (300 Area Central Plateau) ^a	4,517	0	0	41	0	4,517	+4,517
L-850, Replace 200W 1.1M Gallon PW Tank (DFLAW Priority) ^a	8,130	1,720	1,323	2,183	1,323	3,764	+2,441
L-894, Raw Water Cross Connection Isolation 200E/W ^a	7,440	7,089	0	204	0	351	+351
L-895, Fire Protection Infrastructure for Plateau Raw Water ^a	18,145	8,945	2,769	2,847	2,769	3,662	+893
L-898, 100 Area Mission Critical Distribution Feeders Replacement ^a	13,258	3	547	10	547	12,161	+11,614
L-928, Reroute 12in Raw Water Line Near 241AP Farm ^a	7,710	0	0	0	0	7,710	+7,710
Total, Richland	61,683	17,813	5,851	5,381	5,851	32,165	+26,314

^a These capital investments represent expenditures that may be performed between FY 2022 and FY 2023 based on emerging risks.

.Richland
Construction Projects Summary (\$K)

	Total	Prior Years	FY 2021 Enacted	FY 2021 Actuals	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted
18-D-404, Modification of Waste Encapsulation and Storage Facility							
Total Estimate Cost (TEC)	35,800	17,700	15,000	1,188	15,000	3,100	-11,900
Other Project Costs (OPC)	12,500	4,500	0	993	0	0	0
Total Project Cost (TPC) 18-D-404	48,300	22,200	15,000	2,181	15,000	3,100	-11,900
22-D-401, 400 Area Fire Station							
Total Estimate Cost (TEC)	19,400	300	2,400	111	2,400	2,800	+400
Other Project Costs (OPC)	3,100	1,500	0	2	0	300	+300
Total Project Cost (TPC) 22-D-401^a	22,500	1,800	2,400	113	2,400	3,100	+700
22-D-402, Central Plateau Water Treatment Facility							
Total Estimate Cost (TEC)	35,900	2,900	3,700	7,029	3,700	6,500	+2,800
Other Project Costs (OPC)	4,100	450	50	2,959	50	2,400	+2,350
Total Project Cost (TPC) 22-D-402^a	40,000	3,350	3,750	9,988	3,750	8,900	+5,150
23-D-404, 181D Export Water System Reconfiguration and Upgrade							
Total Estimate Cost (TEC)	62,150	0	100	0	100	6,450	+6,350
Other Project Costs (OPC)	3,850	500	700	800	700	320	-380
Total Project Cost (TPC) 23-D-404	66,000	500	800	800	800	6,770	+5,970
23-D-405, 181B Export Water System Reconfiguration and Upgrade							
Total Estimate Cost (TEC)	48,500	0	20	20	20	480	+460
Other Project Costs (OPC)	2,500	400	300	300	300	0	-300
Total Project Cost (TPC) 23-D-405	51,000	400	320	320	320	480	+160

^a These projects became construction line items in FY 2022. Previously, they were Minor Construction Projects.

**18-D-404, Modification of Waste Encapsulation and Storage Facility
Hanford, Richland, WA
Project is for Design and Construction**

1. Summary, Significant Changes and Schedule and Cost History

Summary:

Line-Item funding is requested for Waste Encapsulation and Storage Facility (WESF) modifications to facilitate the radioactive cesium/strontium (Cs/Sr) capsule transfer system. This includes modifications for the transfer system and welding operations to seal the containers.

The FY 2023 Request for the Modification of Waste Encapsulation and Storage Facility is \$3,100,000.

The scope for this project change was approved on March 17, 2017, with a Total Project Cost of \$41,500,000. This was a change from the CD-0 approved on November 5, 2015, which reflected a preliminary cost range of \$93,000,000 to \$150,000,000. CD-2/3 was approved on January 8, 2021, and the TPC was revised to \$48,300,000.

Significant Changes:

This Construction Project Data Sheet is an update of the FY 2022 Construction Project Data Sheet and does not represent a new start for the budget year.

Line-Item funding is being requested for Waste Encapsulation and Storage Facility modifications to facilitate the radioactive cesium/strontium (Cs/Sr) capsule transfer system. This Construction Project Data Sheet is an updated submittal for the design and construction funding required for Waste Encapsulation and Storage Facility modifications.

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

Critical Milestone History

Fiscal Year (FY)	CD-0	Conceptual Design Complete	CD-1	CD-2	Final Design Complete	CD-3	CD-4	D&D Complete
FY 2018 Request	11/5/2015	3QFY2017	4Q FY2018	TBD	TBD	TBD	TBD	N/A
FY 2019 Request	11/5/2015	4QFY2017	2QFY2018	TBD	TBD	TBD	TBD	N/A
FY 2020 Request	11/5/2015	4QFY2017	2QFY2018	1QFY2020	2QFY2019	1QFY2020	TBD	N/A
FY 2022* Request	11/5/2015	7/18/2017	2/7/2018	1/8/2021	6/17/2019	1/8/2021	3QFY2024	N/A
FY 2023 Request	11/5/2015	2/07/2018	2/07/2018	1/8/2021	6/17/2019	1/8/2021	3QFY2024	N/A

*FY 2021 request not submitted

- CD-0 – Approve Mission Need
- CD-1 – Approve Alternative Selection and Cost Range.
- CD-2 – Approve Performance Baseline.
- CD-3 – Approve Start of Construction.

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Richland, WA (PBS RL-0013C)**

CD-4 – Approve Start of Operations or Project Completion
 D&D Start – Start of Decommissioning and Decontamination (D&D) work
 D&D Complete – Completion of Decommissioning and Decontamination work

Notes:

No construction excluding approved long-lead procurement will be performed until the project's performance baseline has been updated and CD-3 has been approved.

Project Cost History

	(Dollars in thousands)						
	TEC, Design	TEC, Construction	TEC, Total	OPC Except D&D	OPC, D&D	OPC, Total	TPC
FY 2018 Request	7,500	27,000	34,500	7,000	0	7,000	41,500
FY 2019 Request	7,500	27,000	34,500	7,000	0	7,000	41,500
FY 2020 Request	7,500	26,000	33,500	8,000	0	8,000	41,500
FY 2022* Request	7,500	28,300	35,800	12,500	0	12,500	48,300
FY 2023 Request	7,500	28,300	35,800	12,500	0	12,500	48,300

*FY 2021 request not submitted

2. Project Scope and Justification

Scope:

The scope of the Management of the Cesium and Strontium Capsules Project includes the activities required to achieve safe, compliant, and cost-effective interim dry storage of the 1,936 cesium and strontium capsules currently stored at Waste Encapsulation and Storage Facility. Waste Encapsulation and Storage Facility cannot provide a continued capability to manage the capsules for an extended period of time. This line-item construction project supports the mission need by equipping Waste Encapsulation and Storage Facility to remove the capsules.

The scope of the Waste Encapsulation and Storage Facility modifications line item includes the following activities to support interim dry storage of the capsules currently stored at the Waste Encapsulation and Storage Facility:

- Design and completion of modifications necessary to support capsule retrieval, packaging, and transfer of capsules from the Waste Encapsulation and Storage Facility.
- Project and construction management, preparation of any required regulatory documents/permits and safety analyses, testing and system startup.

Justification:

This project is being conducted in accordance with DOE Order 413.3B, Program and Project Management for the Acquisition of Capital Assets. The modifications are needed in order to remove the capsules from the Waste Encapsulation and Storage Facility pools for safety reasons.

3. Financial Schedule

(Dollars in thousands)

	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
Design			
FY 2018	6,500	6,500	6,500
FY 2019	1,000	1,000	1,000
Total, Design	7,500	7,500	7,500
Construction			
FY 2020	10,200	10,200	10,200
FY 2021	15,000	15,000	15,000
FY 2022	0	0	0
FY 2023	3,100	3,100	3,100
Total, Construction	28,300	28,300	28,300
TEC			
FY 2018	6,500	6,500	6,500
FY 2019	1,000	1,000	1,000
FY 2020	10,200	10,200	10,200
FY 2021	15,000	15,000	15,000
FY 2022	0	0	0
FY 2023	3,100	3,100	3,100
Total TEC	35,800	35,800	35,800
Other Project Cost (OPC)			
OPC except D&D			
FY 2017	2,000	2,000	2,000
FY 2018	500	500	500
FY 2019	2,000	2,000	2,000
FY 2020	0	0	0
FY 2021	0	0	0
FY 2022	8,000	8,000	8,000
FY 2023	0	0	0
Total OPC except D&D	12,500	12,500	12,500
Total Project Cost (TPC) (Line Item only)			
FY 2017	2,000	2,000	2,000
FY 2018	7,000	7,000	7,000
FY 2019	3,000	3,000	3,000
FY 2020	10,200	10,200	10,200
FY 2021	15,000	15,000	15,000
FY 2022	8,000	8,000	8,000
FY 2023	3,100	3,100	3,100
	48,300	48,300	48,300

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Waste Encapsulation and Storage Facility,
Richland, WA (PBS RL-0013C)**

FY 2023 Congressional Budget Justification

4. Details of Project Cost Estimate

(Dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design			
Design	6,500	6,500	6,500
Contingency	1,000	1,000	1,000
Total, Design	7,500	7,500	7,500
Construction			
Equip/Construction	26,000	26,000	26,000
Contingency	2,300	2,300	2,300
Total, Construction	28,300	28,300	28,300
Total, TEC	35,800	35,800	35,800
Contingency, TEC	3,300	3,300	3,300
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Design	12,500	12,500	12,500
Support	0	0	0
Contingency	0	0	0
Total, OPC	12,500	12,500	12,500
Contingency, OPC	0	0	0
Total, TPC	48,300	48,300	48,300
Total Contingency	3,300	3,300	3,300

5. Schedule of Appropriation Requests

		Prior Years	FY2017	FY2018	FY2019	FY 2020	FY 2021	FY 2022	FY 2023	Out years	Total
FY 2018 Request	TEC	0	0	6,500						TBD	TBD
	OPC	0	2,000	500						TBD	TBD
	TPC	0	2,000	7,000						TBD	TBD
FY 2019 Request	TEC	0	0	6,500	1,000					TBD	TBD
	OPC	0	2,000	500	0					TBD	TBD
	TPC	0	2,000	7,000	1,000					TBD	TBD
FY 2020 Request	TEC	0	0	6,500	1,000	10,200				TBD	TBD
	OPC	0	2,000	500	2,000	0				TBD	TBD

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	TPC	0	2,000	7,000	3,000	10,200				TBD	TBD
FY 2022* Request	TEC	0	0	6,500	1,000	10,200	15,000	0		0	33,500
	OPC	0	2,000	500	2,000	0	0	8,000		0	12,500
	TPC	0	2,000	7,000	3,000	10,200	15,000	8,000	3,100	0	48,300
FY 2023 Request	TEC	0	0	6,500	1,000	10,200	15,000	0	3,100	0	35,800
	OPC	0	2,000	500	2,000	0	0	8,000	0	0	12,500
	TPC	0	2,000	7,000	3,000	10,200	15,000	8,000	3,100	0	48,300

*FY 2021 request not submitted

6. Related Operations and Maintenance Funding Requirements

Start of Operation or Beneficial Occupancy (fiscal quarter or date)	FY 2024
Expected Useful Life (number of years)	2 years
Expected Future Start of D&D of this capital asset (fiscal quarter)	FY 2028

The facility housing the WESF Mods is the Waste Encapsulation and Storage Facility (WESF) that must maintain operations during the Cs/Sr capsule transfer operations.

The modifications will be used for operations to transfer the Cs/Sr capsules from the existing location in the WESF basin to a dry storage pad.

(dollars in thousands)

	Annual Costs		Life Cycle Costs (based on 35-year period)	
	Current Total Estimate	Previous Total Estimate	Current Total Estimate	Previous Total Estimate
Storage Operations	9,950	9,950	19,900	19,900
Utilities	0	0	0	0
Maintenance & Repair	0	0	0	0
Total	9,950	9,950	19,900	19,900

7. D&D Information

There is no new area being constructed in this construction project.

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

8. Acquisition Approach

To complete this project safely and in the most cost-effective manner, DOE will direct the plateau remediation prime contractor to perform and manage this work. This approach makes the best use of site expertise and efficiently uses the existing contract. Continuity of design will be ensured by making a provision in the new plateau clean-up contract for assignment of the scope, regardless of the timing of a contract turnover.

The plateau remediation contractor organization will serve as the Design Authority responsible for establishing the design requirements and ensuring that design output documents accurately reflect the design basis. The Design Authority is

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Waste Encapsulation and Storage Facility,
Richland, WA (PBS RL-0013C)**

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responsible for design control and ultimate technical adequacy of the design process. These responsibilities are applicable whether the process is conducted fully in-house, partially contracted to outside organizations, or fully contracted to outside organizations. The Design Authority will carefully control and monitor each design tier to ensure the design inputs, design constraints, design analysis and calculations, and design requirements are identified, accurate, complete, and documented.

Subcontracts will be competitively awarded by the plateau remediation contractor for multiple work scopes to provide best value to the government. Various subcontractors will be used for support services such as technology development, permitting, and safety documentation. Subcontracting strategies for these services are to be determined based on the circumstances and work scope of each critical decision.

**22-D-401, 400 Area Fire Station
Hanford, Richland, WA
Project is for Design and Construction, Commissioning, Turnover and Readiness**

1. Summary, Significant Changes and Schedule and Cost History

Background:

Line-Item funding is requested for the 400 Area Fire Station to facilitate construction of a new 400 Area Fire Station. The new fire station will allow consolidation of several facilities into a new facility to be built in the 400 Area of the Hanford Site. The facility will provide space to store and maintain six emergency vehicles and provide administrative facilities for 24/7 operations of the facilities for up to 12 individuals. This Construction Project Data Sheet is an update of the FY 2022 Construction Project Data Sheet and does not represent a new start for the budget year.

In 2016, a Business Case Analysis was performed and documented in HNF-59746, Business Case Analysis For 400 Area Fire Station was prepared and issued. As a result of the Business Case, the Project L-888, 400 Area Fire Station was identified and initiated in FY 2018. At that time, the Project underwent a Capitalization Determination based on the scope and preliminary rough order of magnitude cost estimate generated to support Project Initiation activities. The Capital Determination documented that the L-888 Project would be minor construction.

As the Project has progressed, the cost has increased. Based on recent estimations, the Total Project Cost for the fire station exceeded the minor construction threshold of \$20M (50 USC 2743), which requires specific authorization and management as a line-item Project, before the increase to \$25M. This Project will be executed consistent with DOE Order 413.3B.

Summary:

The Fiscal Year 2023 Budget Request Update for the 400 Area Fire Station is \$3,100,000. Critical Decision (CD) 0 approval was received on 2/22/21, with a Total Project Cost of \$22,500,000 and a completion date of 2024. The FY 2022 Budget Request was \$15,200,000.

This Construction Project Data Sheet includes actual costs of \$4,200,000 for work performed through Fiscal Year 2021, which combined with the requested Line-Item funding to equal the Total Project Cost of \$22,500,000 (calculated at a 90% confidence level). FY 2018 through FY 2021 costs will not be part of the Line-Item Request but will be included in this Project Data Sheet to reflect the complete Total Project Cost of this project. Only FY 2022 through Project completion estimated costs will be part of the Line-Item Request.

This cost information provided within this Construction Project Data Sheet was baselined as a minor construction project. In addition, the Project will be baselined as a Capital Asset Line-Item Project as part of the CD-2/3 review and approval process. Approval of CD-2/3 includes establishment of a baseline including management reserve and contingency.

A Federal Project Director has been assigned to this project since its inception as a minor construction project and the Federal Project Director has approved this Construction Project Data Sheet.

Significant Changes:

The 400 Area Fire Station design is complete. The Project is currently compiling a combined Critical Decision 2/3 package for Project Management Executive approval.

Critical Decision History

Fiscal Year (FY)	CD-0	Conceptual Design Complete	CD-1	CD-2	Final Design Complete	CD-2/3	CD-4	D&D Complete
FY 2022	N/A - See Note below	April 2019	N/A - See Note below		9/17/20	3QFY2021	4QFY2024	N/A
FY 2023	2/22/21	April 2019	N/A - See Note below	Seeking combined CD-2/3 approval	9/17/20	3QFY2022	4QFY2024	N/A

- CD-0 – Approve Mission Need
- CD-1 – Approve Alternative Selection and Cost Range.
- CD-2 – Approve Performance Baseline.
- CD-3 – Approve Start of Construction.
- CD-4 – Approve Start of Operations or Project Completion
- D&D Start – Start of Decommissioning and Decontamination (D&D) work
- D&D Complete – Completion of Decommissioning and Decontamination work

Notes:

The Project experienced cost growth and became a Capital Asset Line-Item Project. A Critical Decision Implementation Strategy has been developed and approved that requires the generation of a Decision Memorandum. The purpose of the Decision Memorandum is to obtain EM-2 approval of mission need for the 400 Area Fire Station and to designate the Project Management Executive for future Critical Decisions. As part of the strategy and because design was complete, it was agreed that the Project would not pursue a CD-1. Rather, the Critical Decision Implementation strategy requires the development, submittal and approval of a combined CD-2/3 package. The approved CD-2/3 package will establish the Project baseline as a Line-Item Capital Project and approve the Start of Construction for the Project.

Project Cost History

Fiscal Year	TEC, Design	TEC, Construction	TEC, Total	OPC, Except D&D	OPC, D&D	OPC, Total	TPC
FY 2022 Request	200	19,200	19,400	3,100	N/A	3,100	22,500
FY 2023 Request	200	19,200	19,400	3,100	N/A	3,100	22,500

2. Project Scope and Justification

Scope:

The scope of the 400 Area Fire Station Project includes the planning, design, construction, testing, commissioning and readiness for a new 400 Area Fire Station. The new fire station will accommodate 24/7 operations for the Hanford Fire Department staff and emergency response apparatus. The fire station will provide the following:

- Four vehicle bays to support eight emergency response vehicles; supporting features include drive through bays, overhead apparatus water recharge, facility supplied equipment air, wireless data connections for vehicle-borne data transferal, a floor drain system and an automatically actuated vehicle exhaust system (approximately 7,740 square feet).
- An area (approximately 900 square feet) to test, decontaminate, and maintain emergency response equipment.

- Day shift functional space (approximately 2,000 square feet). This space will include day-shift administrative offices, a combined training and conference area, an office for fire protection system Inspection, Testing and Maintenance personnel, and bathrooms compliant with the American's with Disabilities Act of 1990.
- Living areas to accommodate 24-hour shift personnel, with 12 Hanford Fire Department personnel per shift. This will include dormitory rooms and office/training spaces for on-shift personnel, kitchen and dining area, study/administrative workspace, physical training space, showers and lavatories, and a storage area for janitorial and laundry supplies (approximately 9,600 square feet).
- Support electrical and communication equipment for continuity of station operation. This includes required emergency response, voice, and information technology communications equipment, facility electrical service, an emergency backup generator, and provisions for temporary uninterruptable power electrical supply (approximately 850 square feet).
- Storage to support emergency operations, including a secure and compliant environmentally controlled spaces for medical supplies, response equipment, and firefighting protective ensembles, in addition to the general storage-specific areas (approximately 1,000 square feet).
- Self-Contained Breathing Apparatus cylinder recharge area and ancillary storage of breathing air cylinders (approximately 650 square feet).
- Access to Hanford Site roads and parking to accommodate staff members' privately owned vehicles (33 parking spots).

Justification:

The 400 Area Fire Station supports the strategic evolution of the longer-term Hanford Fire Department configuration to meet the Hanford Site mission needs. Emergency response assets for this specific area of the Hanford site are currently deployed in a facility originally commissioned in 1965 that is in a rapidly deteriorating state of operational habitability. Critical facility systems, including cooling, gas boiler, and building electrical circuits are failing and additional failures may render the facility uninhabitable. Alarm systems are unreliable to the extent that firefighters rely on individual battery-powered radios in their sleeping quarters to alert them for a nighttime response. Supporting systems such as water piping and sewer are severely corroded, degraded, and intermittently failing, which creates sanitation problems and requires frequent cleaning. Additionally, multiple aged ancillary facilities are required to support the current fire station, and those facilities are in a state of degraded functional reliability. This project will consolidate three separate facilities and associated temporary storage units into one purpose-built facility that complies with all current codes and standards for survivability and sustainability. The investment (approximately \$1,000,000 per year) required to maintain the existing primary and supporting facilities is rapidly escalating due to recurring outages and failures of the heating, cooling, electrical, and drainage systems.

This Fire Station is part of the overall plan to remove deteriorating infrastructure and replace it with strategically located new facilities. Replacement enables the execution of several priorities for the site, including footprint reduction by relocating out of the 300 Area, and significantly faster response to the operational facilities and contaminated wildlands on or near the Central Plateau. In particular, the Waste Treatment and Immobilization Plant will have a second alarm response time reduced by about 35%. It will also provide closer proximity to the primary commuting corridor, reducing average time to respond to motor vehicle crashes and medical emergencies on site.

Key Performance Parameters:

The new 400 Area Fire Station can provide the Hanford Fire Department with capability to provide 24 hours a day, 7 days a week firefighting services for the 300, 400 and 600 Areas (south of the Wye Barricade). Specific attributes include:

- Vehicle Bays to support 8 Emergency Response Vehicles.
- Living and office space for HFD personnel.
- Storage space for HFD Fire Fighting Equipment and HFD Personnel Items.
- Parking for HFD Staff Personal Vehicles.

3. Financial Schedule

(Dollars in thousands)			
	Appropriations ¹	Obligations	Costs
Total Estimated Cost (TEC)			
Design			
FY 2021	200	200	200
Total, Design	200	200	200
Construction			
FY 2020	300	300	300
FY 2021	2,200	2,200	2,200
FY 2022	13,900	13,900	13,900
FY 2023	2,800	2,800	2,800
Total, Construction	19,200	19,200	19,200
TEC			
FY 2020	300	300	300
FY 2021	2,400	2,400	2,400
FY 2022	13,900	13,900	13,900
FY 2023	2,800	2,800	2,800
Total TEC	19,400	19,400	19,400
Other Project Cost (OPC)			
OPC except D&D			
FY 2018	200	200	200
FY 2019	1,100	1,100	1,100
FY 2020	200	200	200
FY 2021	0	0	0
FY 2022	1,300	1,300	1,300
FY 2023	300	300	300
Total OPC except D&D	3,100	3,100	3,100
Total Project Cost (TPC) (Line-Item only)			
FY 2018	200	200	200
FY 2019	1,100	1,100	1,100
FY 2020	500	500	500
FY 2021	2,400	2,400	2,400
FY 2022	15,200	15,200	15,200
FY 2023	3,100	3,100	3,100
	22,500	22,500	22,500

Appropriations for FY2018-2021 are Operating Expense funds.

4. Details of Project Cost Estimate

(Dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design	200	200	200
Contingency	0	0	0
Total, Design	200	200	200
Construction	19,200	19,200	19,200
Contingency	0	0	0
Total, Construction	19,200	19,200	19,200
Total, TEC	19,400	19,400	19,400
<i>Contingency, TEC</i>	0	0	0
Other Project Cost (OPC)			
OPC except D&D	200	200	200
Design	1,300	1,300	1,300
Contingency	1,600	1,600	1,600
Total, OPC	3,100	3,100	3,100
<i>Contingency, OPC</i>	1,600	1,600	1,600
Total, TPC	22,500	22,500	22,500
<i>Total Contingency</i>	1,600	1,600	1,600

5. Schedule of Appropriation Requests

		Prior Years	FY2018	FY2019	FY2020	FY 2021	FY 2022	FY 2023	Total
FY 2022 Request	TEC	0	0	0	300	2,200	13,900	2,800	19,200
	OPC	0	200	1,100	200	200	1,300	300	3,300
	TPC	0	200	1,100	500	2,400	15,200	3,100	22,500
FY 2023 Request	TEC	0	0	0	300	2,200	13,900	2,800	19,200
	OPC	0	200	1,100	200	200	1,300	300	3,300
	TPC	0	200	1,100	500	2,400	15,200	3,100	22,500

- Note: FY 2018 – FY 2021 appropriations not previously requested as part of Capital Line-Item. As noted above, project has been proceeding as a reportable minor construction project and therefore funds were provided as part of the operating budget.

6. Related Operations and Maintenance Funding Requirements

Start of Operation or Beneficial Occupancy (fiscal quarter or date)	4 th Quarter FY 2023
Expected Useful Life (number of years)	30 years
Expected Future Start of D&D of this capital asset (fiscal quarter)	4 th Quarter FY 2053

(Dollars in thousands)

	Annual Costs		Life Cycle Costs (Based on 30-year period)	
	Current Total Estimate	Previous Total Estimate	Current Total Estimate	Previous Total Estimate
Storage Operations	649	649	35,827	35,827
Utilities	14	14	781	781
Maintenance & Repair	319	319	17,598	17,598
Total	982	982	54,206	54,206

7. D&D Information

Upon retirement of the new 400 Area Fire Station, it will be turned over to another Hanford Contactor for D&D. Identity of Contactor and timing will be dependent upon status of the Site mission at that time.

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

8. Acquisition Approach

To complete this project safely and in the most cost-effective manner, DOE has directed the Hanford Infrastructure prime contractor to perform and manage this work. This approach makes the best use of site expertise and efficiently uses the existing contract.

The Hanford Infrastructure prime contractor organization has and will serve as the Design Authority responsible for establishing the design requirements and ensuring that design output documents accurately reflect the design basis. The Design Authority is responsible for design control and ultimate technical adequacy of the design process. These responsibilities are applicable whether the process is conducted fully in-house, partially contracted to outside organizations, or fully contracted to outside organizations. The Design Authority will carefully control and monitor each design tier to ensure the design inputs, design constraints, design analysis and calculations, and design requirements are identified, accurate, complete, and documented.

Subcontracts have been and continue to be competitively awarded by the Hanford Infrastructure prime contractor. Awarded subcontracts include:

1. Design: The final design for the facility has been completed, approved and issued.
2. Subcontracting strategies for any other services will be determined based on the circumstances and work scope of each critical decision.

**22-D-402, Central Plateau Water Treatment Facility
Hanford, Richland, WA**

Project is for Design and Construction, Commissioning, Turnover and Readiness

1. Summary, Significant Changes and Schedule and Cost History

Background:

This is an existing Minor construction Project that the Total Estimated Cost is expected to exceed the Minor construction Project threshold of \$25,000,000. This Project Data Sheet is requesting Project Management authority for the entire Project (FY 2018 through Project Closeout) as a Line-Item Project. In addition, the Project Data Sheet is requesting Line-Item Funding for FY 2022 through completion of the Project. Line-Item funding is being requested for the Central Plateau Water Treatment Facility to facilitate construction of a new water treatment facility that will supply 3,500,000 gallons of treated water per day. The facility will provide treated water to the Hanford Central Plateau, supporting fire suppression, process operations, and domestic use as well as reducing operational risks to the Direct-Feed Low Activity Waste facility. This Construction Project Data Sheet is an update of the FY 2022 Construction Project Data Sheet and does not represent a new start for the budget year.

In 2016, a Business Case Analysis was performed and documented in HNF-59975, Business Case Analysis for Hanford Potable Water Treatment Technology Selection. As a result of the Business Case, recommendations were made including performing a filtration system pilot study to support final filtration technology selection and building a replacement water treatment facility.

As a result of the Business Case, the L-897 Project, Central Plateau Water Treatment Facility was identified and initiated in FY 2017. At that time, the Project underwent a Capitalization Determination based on the scope and preliminary rough order of magnitude cost estimate generated to support Project Initiation activities. The Capital Determination documented that the L-897 Project would be a Reportable Minor Construction Project. Since that time, the Project has completed design and has awarded a subcontract via a competitive procurement for the filtration equipment and the construction of the facility.

As the Project has progressed, the cost has increased. Based on recent estimations, the Total Project Cost for the water treatment facility exceeded the minor construction threshold of \$20,000,000 (50 USC 2743), which requires specific authorization and management as a line-item Project, even with the increase to \$25,000,000. This Project will be executed consistent with DOE Order 413.3B.

Summary:

The FY 2023 Budget Request is \$11,200,000. This Construction Project Data Sheet includes actual costs of \$7,100,000 for work performed through Fiscal Year 2021, which combined with Line-Item funding of \$12,800,000 in FY 2022, \$8,900,000 in FY 2023, and \$11,200,000 in FY 2024 to equal the Total Project Cost of \$40,000,000 (calculated at 90% confidence level). FY 2018 through FY 2021 costs will not be part of the Line-Item Request, only FY 2022 through Project completion estimated costs will be part of the Line-Item Request.

As noted above, the Project began as Reportable General Plant Project and was submitted to Congress as part of the Integrated Facilities and Infrastructure Cross Cut Budget in 2017.

The cost information provided within this Project Data Sheet does not include a range because the Project was baselined while it was a Minor construction Project and has awarded a firm fixed price contract for the filtration equipment and the construction of the facility. Further, the Project will baseline as a Capital Asset Line-Item Project as part of the CD-2/3 review and approval process.

A Federal Project Director at the appropriate level has been assigned to this project since its inception as a Minor Construction Project.

Significant Changes:

The Central Plateau Water Treatment Facility design is completed, the performance baseline has been established and approved, and full construction has been authorized. The Total Project costs has increased from \$32,000,000 to \$40,000,000 due to the inclusion of impacts of potential risks not previously evaluated that yield a 90% confidence level estimate.

Critical Decision History

Fiscal Year (FY)	CD-0	Conceptual Design Complete	CD-1	CD-2	Final Design Complete	CD-2/3	CD-4	D&D Complete
FY 2022 Request	N/A - See Note below	4/16/2018	N/A - See Note below		4/09/2020	4QFY2021	3QFY2024	N/A
FY 2023 Request	2/22/2021	4/16/2018	N/A - See Note below	Received approval of a combined CD-2/3 package	4/09/2020	9/14/2021	3QFY2024	N/A

Notes:

The Project experienced cost growth and became a Capital Asset Line-Item Project. A Critical Decision Implementation Strategy has been developed and approved that requires the generation of a Decision Memorandum. The purpose of the Decision Memorandum is to obtain EM-2 approval of mission need for the 200 Area Water Treatment Facility and to designate the Project Management Executive for future Critical Decisions. As part of the strategy and because design was complete, it was agreed that the Project would not pursue a CD-1. Rather, the Critical Decision Implementation strategy requires the development, submittal and approval of a combined CD-2/3 package. The approved CD-2/3 package established the Project baseline as a Line-Item Capital Project and approve the Start of Construction for the Project.

- 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 Decommissioning and Decontamination (D&D) work
- D&D Complete – Completion of Decommissioning and Decontamination work

Project Cost History

FY 2022 Request	(Dollars in thousands)						
	TEC, Design	TEC, Construction	TEC, Total	OPC, Except D&D	OPC, D&D	OPC, Total	TPC
	800	21,400	22,200	9,800	N/A	9,800	32,000
FY2023 Request	3,300	32,600	35,900	4,100	N/A	4,100	40,000

2. Project Scope and Justification

Scope:

The scope of the 200 Area Water Treatment Facility Project includes the planning, design, construction, testing, commissioning and readiness for a new potable water treatment facility on the Hanford Central Plateau. This new facility has been designed and sized to be capable of producing a minimum of 3,500,000 gallons per day with the ability to expand to 5,000,000 gallons per day, to meet forecasted potable water demand. The new facility will use modular microfiltration hollow fiber direct feed membrane systems for filtration. Successful delivery of 3,500,000 gallons per day is the key performance parameter for this project.

Scope includes provisions for potable and export water connections, sewer, electrical, Hanford Local Area Network connection, interior and exterior lighting, fire protection/detection systems and wastewater disposal infrastructure connected to a new facility.

Justification:

The existing Water Treatment Facility (designated as 283W) provides all potable water to the Central Plateau, supporting fire suppression, process operations, and domestic use. The 283W facility was constructed in 1944, the 283W facility has undergone several extensive infrastructure repairs and upgrades to the pretreatment equipment, filter nozzles and media, effluent confirmation and monitoring equipment, chlorination systems, flocculation system and storage clear wells. Despite these upgrades, some of the facility and internal components are those that were originally installed. The 283W facility continues to deteriorate and repairs and major upgrades are becoming more costly and complex to perform.

In addition to the deteriorating condition, sanitary water peak demands for the Central Plateau are projected to increase beyond the capacity of 283W, which is currently limited at 2,100,000 gallons per day or 1,500 gallons per minute. The 283W facility does have the ability to increase sufficient capacity to support the throughput ramp up of Waste Treatment Plant Low-Activity Waste as Direct Feed Low Activity Waste activities are conducted. However, if a situation arises in which all users of sanitary water need peak demand simultaneously, 283W would not be able to meet that demand. Further, 283W has not frequently run at or near full capacity for any extended period over the last 10 years. Recently, 283W has run two short duration tests (less than 48 hours), in which the facility was operating at 80% or greater of full capacity. However, with the initiation of Direct Feed Low Activity Waste operations, the facility will be required to operate near or at capacity 24 hours a day, 7 days a week.

Key Performance Parameters:

The new Central Plateau Water Treatment Facility can provide potable water at up to 3,500,000 gallons of per day while supporting and sustaining sanitary water demands on the Central Plateau.

The new Central Plateau Water Treatment Facility shall provide water quality levels that comply with WAC 246-290, Group A Public Water Supplies.

3. Financial Schedule

(Dollars in thousands)

	Appropriations ¹	Obligations	Costs
Total Estimated Cost (TEC)			
Design			
FY 2018	0	0	0
FY 2019	1,600	1,600	1,600
FY 2020	1,100	1,100	1,100
FY 2021	600	600	600
Total, Design	3,300	3,300	3,300
Construction			
FY 2020	200	200	200
FY 2021	3,100	3,100	3,100
FY 2022	11,800	11,800	11,800
FY 2023	6,500	6,500	6,500
FY 2024	11,000	11,000	11,000
Total, Construction	32,600	32,600	32,600
TEC			
FY 2018	0	0	0
FY 2019	1,600	1,600	1,600
FY 2020	1,300	1,300	1,300
FY 2021	3,700	3,700	3,700
FY 2022	11,800	11,800	11,800
FY 2023	6,500	6,500	6,500
FY 2024	11,000	11,000	11,000
Total TEC	35,900	35,900	35,900
Other Project Cost (OPC)			
OPC except D&D			
FY 2018	400	400	400
FY 2019	0	0	0
FY 2020	50	50	50
FY 2021	50	50	50
FY 2022	1,000	1,000	1,000
FY 2023	2,400	2,400	2,400
FY 2024	200	200	200
Total OPC except D&D	4,100	4,100	4,100
Total Project Cost (TPC) (Line Item only)			
FY 2018	400	400	400
FY 2019	1,600	1,600	1,600
FY 2020	1,350	1,400	1,350
FY 2021	3,750	10,900	3,750
FY 2022	12,800	12,800	12,800
FY 2023	8,900	8,900	8,900
FY 2024	11,200	4,000	11,200
	40,000	40,000	40,000

**Environmental Management/
Richland/22-D-402 200 Area Water
Treatment Facility, Richland, WA**

1. Appropriations for FY2018-2021 are Operating Expense funds.

4. Details of Project Cost Estimate

(Dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design	3,300	800	800
Contingency	0	0	0
Total, Design	3,300	800	800
Construction	28,300	21,400	21,400
Contingency	4,300	0	0
Total, Construction	32,600	21,400	21,400
Total, TEC	35,900	22,200	22,200
Contingency, TEC	4,300	0	0
Other Project Cost (OPC)			
OPC except D&D	4,100	3,500	3,500
Design	0	2,700	2,700
Contingency	200	3,600	3,600
Total, OPC	4,300	9,800	9,800
Contingency, OPC	200	3,600	3,600
Total, TPC	40,000	32,000	32,000
Total Contingency	4,500	3,600	3,600

5. Schedule of Appropriation Requests

		Prior Years	FY2018	FY2019	FY2020	FY 2021	FY 2022	FY 2023	Outyears /FY 2024	Total
FY 2022 Request	TEC	0	0	0	200	10,800	7,800		3,400	22,200
	OPC	0	400	1,600	1,200	100	5,000		1,500	9,800
	TPC	0	400	1,600	1,400	10,900	12,800		4,900	32,000
FY 2023 Request	TEC	0	0	1,600	1,300	3,700	11,800	6,500	11,000	35,900
	OPC	0	400	0	50	50	1,000	2,400	200	4,100
	TPC	0	400	1,600	1,350	3,750	12,800	8,900	11,200	40,000

- Note: FY 2018 – FY 2021 appropriations not previously requested as part of Capital Line Item. As noted above, project has been proceeding as a reportable General Plant Project and therefore funds were provided as part of operating budget.

6. Related Operations and Maintenance Funding Requirements

Start of Operation or Beneficial Occupancy (fiscal quarter or date informed)

3rd Quarter FY 2024 (90% confidence/risk informed)

**Environmental Management/
Richland/22-D-402 200 Area Water
Treatment Facility, Richland, WA**

FY 2023 Congressional Budget Justification

Expected Useful Life (number of years) 50_years
 Expected Future Start of D&D of this capital asset (fiscal quarter) FY 2074

No Operations and Maintenance Funds are included in Line-Item request.

	Annual Costs		Life Cycle Costs (based on 50-year period)	
	Current Total Estimate	Previous Total Estimate	Current Total Estimate	Previous Total Estimate
Storage Operations	2,090	2,090	104,500	115,346
Utilities (See Note 1)	N/A	36	N/A	1,967
Maintenance & Repair	364	383	18,200	121,163
Total (See Note 2)	2,454	2,509	122,700	138,476

Note 1: No significant impact to utilities cost from the existing system to the new.

Note 2: Costs are not escalated for future years.

7. D&D Information

Upon retirement of the new Central Plateau Water Treatment Facility, the facility will be turned over to another Hanford Site Contractor for D&D. Identity of Contactor and timing will be dependent upon status of the Site mission at that time.

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

8. Acquisition Approach

To complete this project safely and in the most cost-effective manner, DOE has directed the Hanford Infrastructure prime contractor to perform and manage this work. This approach makes the best use of site expertise and efficiently uses the existing contract.

The Hanford Infrastructure prime contractor organization has and will serve as the Design Authority responsible for establishing the design requirements and ensuring that design output documents accurately reflect the design basis. The Design Authority is responsible for design control and ultimate technical adequacy of the design process. These responsibilities are applicable whether the process is conducted fully in-house, partially contracted to outside organizations, or fully contracted to outside organizations. The Design Authority will carefully control and monitor each design tier to ensure the design inputs, design constraints, design analysis and calculations, and design requirements are identified, accurate, complete, and documented.

Subcontracts have been and continue to be competitively awarded by the Hanford Infrastructure prime contractor. Awarded subcontracts include:

1. Design. The final design for the facility has been completed, approved and issued.
2. Construction: The construction subcontract award has been made and submittal pre-mobilization activities have begun.
3. Pall Membrane Filtration Equipment: A non-competitive procurement has been awarded.
4. Third Party Integrator: A competitive Basic Order Agreement procurement has been placed for hardware-software integration. Three (3) releases of this Basic Order Agreement were issued for this project through March 31, 2022.

Subcontracting strategies for any other services will be determined based on the circumstances and work scope of each critical decision.

**23-D-404, 181D Export Water System Reconfiguration and Upgrade
Hanford, Richland, WA
Project Data Sheet**

1. Summary, Significant Changes and Schedule and Cost History

Background:

This Project Data Sheet is the initial submittal for the line-item authorization and funding required for the 181D Export Water System Reconfiguration and Upgrade.

The 181D Export Water System Reconfiguration and Upgrade project as a line-item for which authorization is needed. Cost growth has been identified with previous 30% conceptual design for 3 pumps; further analysis includes a need for 7 pumps, thus cost increased for piping, electrical, instrumentation and controls. With the updates, the project is now expected to exceed the Total Estimated Cost Minor Construction threshold of \$25,000,000. This Project Data Sheet is requesting authorization and line-item funding. The projected Total Project Cost will capture all costs, including those expended since 2019. This project is for the replacement of the aging equipment, and reconfiguration of the Export Water System to provide long-term reliable uninterrupted water supply to the 200 Area Plateau, Central Plateau Water Treatment Facility, and Waste Treatment Plant.

In 2019, an Export Water System Study was performed. The study was documented in HNF-ENG-61881, Export Water System Study. The study evaluated six alternatives. The study recommended Alternative Number 3. Alternative Number 3 was to upgrade pumps and headers in the 181D River Pump Stations, bypassing the 182D Reservoir and pumping station. The study resulted in the initiation of Project L-781.

The Total Estimated Cost and Total Project Cost have increased as the project has progressed. Based on recent estimations, the Total Estimated Cost for 181D EWS Reconfiguration and Upgrade now exceeds \$25,000,000. Therefore, the Project will be executed per DOE Order 413.3B.

Summary:

This is the initial submittal of a Construction Project Data Sheet for this Project. The FY 2023 Budget Request is \$6,770,000. This Construction Project Data Sheet includes actual costs of \$3,079,000 for work performed to through Fiscal Month March 2022. The Total Project Cost is \$66,000,000 (90% Confidence).

A Federal Project Director at the appropriate level has been assigned to this project since its inception as a Minor Construction project and the Federal Project Director has approved this Construction PDS.

Significant Changes:

This Construction Project Data Sheet is an initial submittal and supports continuation of ongoing work scope.

2. Critical Decision History

Fiscal Year (FY)	CD-0	Conceptual Design	CD-1	Final Design	CD-2/3	CD-4	D&D Complete
FY 2023 Request	01/12/2022	3/25/2021	3/22/2022	Q4FY2022	Q2FY2023	Q4FY2027	TBD

Note: The CD-0, 1, & 2/3 dates are deterministic. The CD-4 date is risk informed and calculated at 90% Confidence level.

- CD-0 –Mission Need approved
- 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 Decommissioning and Decontamination (D&D) work
- D&D Complete – Completion of Decommissioning and Decontamination work

3. Baseline and Validation Status

(Dollars in thousands)

FY 2023 Request	TEC, Design1	TEC, Construction	TEC, Total	OPC, Except D&D	OPC, D&D	OPC, Total	TPC
	2,000	60,150	62,150	3,850	N/A	3,850	66,000

1. Design costs of \$2,000 was funded within expense operating funds outside of the Capital Asset Line-Item Project.

4. Project Description, Scope and Justification

Scope:

The scope of the 181D Export Water System Reconfiguration and Upgrade Project includes planning, design, construction, testing, commissioning and readiness for the new system. The project will include upgrades to the existing 181D River Pump Station building, as necessary to support the facility. Upgrades to the 181D building will include lighting, heating, ventilation and air conditioning (HVAC), operator area, doors, stairways, walkways, fire protection, and other necessary building, mechanical, and electrical equipment modifications.

- Project L-781 will replace the aging vertical turbine pumping system currently installed in the 181D River Pump House.
 - o Four existing pumps will be replaced by 7 more efficient pumps controlled by Variable Frequency Drives. These new pumps will be sized to directly meet pressure requirements on the Central Plateau throughout the required flow range.
 - o The aging electrical distribution system will be upgraded. Existing utility and facility transformers, switchgear, and panel boards will be replaced with new equipment that will minimize arc flash hazards in accordance with NFPA 70 and allow for ease of operations and maintenance. In addition to replacing some existing equipment, the electrical system upgrade will include a new diesel power generator and automatic transfer switch to provide standby power in the event of a loss of normal power
 - o A temporary pumping system will be designed and installed to provide a water supply source from the existing 181D wet well to the 182D Reservoir during construction, while power at the 181D building for pumps and electrical is offline.

Project L-781 will reconfigure the Export Water System in the 100D area to bypass the 25-million-gallon reservoir and its pumps at 182D and pump water directly from the river to the two 3-million-gallon reservoirs (282E/282W), 100K Operations, the 100-Area Fire Station (Station 91), and the Water Treatment Plant at the 200 Area Plateau. To replace the reservoir pumping capacity the project will construct a new feed pump building (approximately 4000, square feet) in the vicinity of the new Central Plateau Water Treatment Facility (CPWTF, 283WR) and will include installing new feed pumps with necessary water storage capacity needed to provide a reliable and constant water supply and to boost the inlet pressure to the Central Plateau Water Treatment Facility. The new feed pump building will include a fire suppression and fire alarm systems with an appropriately sized standby diesel generator.

Justification:

The Export Water System provides all raw water to the 100 Area and 200 Area Plateau. The Export Water System supplies all water to the Water Treatment Facility for the treatment and distribution to the Sanitary Water system as well as provides water to the 100K Area, the 100-Area Fire Station (Station 91), and to the raw water reservoirs in 200E and 200W. This project provides the capability to bypass the 182D Reservoir and pumping system, thus allowing the decommissioning of the 182D Reservoir.

Key Performance Parameters:

The new L-781 Export Water System can provide export water at up to 10,788 gallons per minute supporting and sustaining raw and sanitary water demands on the Central Plateau.

5. Financial Schedule

	(Dollars in thousands)		
	Appropriations ¹	Obligations	Costs
Total Estimated Cost (TEC)			
Design			
FY 2021	100	100	100
FY 2022	1,900	1,900	1,900
Total, Design	2,000	2,000	2,000
Construction			
FY 2023	6,450	6,450	6,450
FY 2024	36,300	36,300	36,300
FY 2025	17,400	17,400	17,400
Total, Construction	60,150	60,150	60,150
TEC, Total			
FY 2021	100	100	100
FY 2022	1,900	1,900	1,900
FY 2023	6,450	6,450	6,450
FY 2024	36,300	36,300	36,300
FY 2025	17,400	17,400	17,400
Total TEC	62,150	62,150	62,150
Other Project Cost (OPC)			
FY 2019	300	300	300
FY 2020	200	200	200
FY 2021	700	700	700
FY 2022	680	680	680
FY 2023	320	320	320
FY 2024	150	150	150
FY 2025	900	900	900
FY 2026	600	600	600
Total OPC	3,850	3,850	3,850
Total Project Cost (TPC)			
FY 2019	300	300	300
FY 2020	200	200	200
FY 2021	800	800	800
FY 2022	2,580	2,580	2,580
FY 2023	6,770	6,770	6,770
FY 2024	36,450	36,450	36,450

	(Dollars in thousands)		
	Appropriations ¹	Obligations	Costs
FY 2025	18,300	18,300	18,300
FY 2026	600	600	600
TPC	66,000	66,000	66,000
1. Appropriations shown for FY2019-2022 were previously requested to support the proposed Minor construction Project.			

6. Details of Project Cost Estimate

	(dollars in thousands)		
	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design	2,000	0	N/A
Contingency	0	0	N/A
Total, Design	2,000	0	N/A
Construction	55,550	0	N/A
Contingency	4,600	0	N/A
Total, Construction	60,150	0	N/A
Total, TEC	62,150	0	N/A
Contingency, TEC	4,600	0	N/A
Other Project Cost (OPC)			
OPC except D&D	2,350	0	N/A
Conceptual Design	1,200	0	N/A
Contingency	300	0	N/A
Total, OPC	3,850	0	N/A
Contingency, OPC	300	0	N/A
Total, TPC	66,000	0	N/A
Total Contingency	4,900	0	N/A

7. Schedule of Appropriation Requests

		(\$K)								
		FY2019	FY2020	FY2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	Total
FY 2023 Request	TEC	0	0	100	1,900	6,450	36,300	17,400	0	62,150
	OPC	300	200	700	680	320	150	900	600	3,850
	TPC	300	200	800	2,580	6,770	36,450	18,300	600	66,000

- Note 1: FY 2019 - FY 2022 appropriations were not previously requested as part of Capital Line Item. As noted above, project has been proceeding as a reportable Minor Construction project and therefore funds were provided as part of operating budget.

8. Related Operations and Maintenance Funding Requirements

Start of Operation or Beneficial Occupancy (fiscal quarter or date) Q4 2027 (90% confidence/Risk Informed)
 Expected Useful Life (number of years) 50 years
 Expected Future Start of D&D of this capital asset (fiscal quarter) 2077

No Operation and Maintenance funding is included in Line-Item request.

(Dollars in thousands)

	Annual Costs		Life Cycle Costs (Based on 50 year period)	
	Current Total Estimate	Previous Total Estimate	Current Total Estimate	Previous Total Estimate
Storage Operations	\$1M	N/A	\$50M	N/A
Utilities (See Note 1)	N/A	N/A	N/A	N/A
Maintenance & Repair	\$0.625M	N/A	\$31.25M	N/A
Total (See Note 2)	\$1.625M	N/A	\$81.25M	N/A

Note 1: No significant impact to utilities cost from the existing system to the new.

Note 2: Costs are not escalated for future years.

9. D&D Information

The reservoir and associated pumping systems will be taken out of service and turned over to another Hanford Contractor for D&D. Identity of Contactor and timing will be dependent upon status of the Site mission at that time.

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

To complete this project safely and in the most cost-effective manner, DOE has directed the Hanford Infrastructure prime contractor to perform and manage this work. This approach makes the best use of site expertise and efficiently uses the existing contract.

The Hanford Infrastructure prime contractor organization has and will serve as the Design Authority responsible for establishing the design requirements and ensuring that design output documents accurately reflect the design basis. The Design Authority is responsible for design control and ultimate technical adequacy of the design process. These responsibilities are applicable whether the process is conducted fully in-house, partially contracted to outside organizations, or fully contracted to outside organizations. The Design Authority will carefully control and monitor each design tier to ensure the design inputs, design constraints, design analysis and calculations, and design requirements are identified, accurate, complete, and documented.

Subcontracts have been and continue to be competitively awarded by the Hanford Infrastructure prime contractor.

1. Design: Conceptual Design through Final Design will be performed by an engineering subcontractor to the Hanford Infrastructure Prime Contractor. The subcontract has been awarded via a competitive procurement. The engineering subcontractor that performs the design will also support procurement, construction and startup and testing activities. Design was completed as part of the minor construction project, costs for the design are included in this document.

2. Construction: Construction activities will be performed by a subcontractor to the Hanford Infrastructure Prime Contractor. The construction subcontract will be awarded via a competitive procurement.
3. Industrial Control System Integrator: Industrial Control System activities will be performed by a subcontractor to the Hanford Infrastructure Prime Contractor. The Industrial Control System subcontract will be awarded as a task release under a Blank Master Agreement.

Subcontracting strategies for any other services will be determined based on the circumstances and work scope of each Critical Decision.

23-D-405, 181B Export Water System Reconfiguration and Upgrade

Hanford, Richland, WA

Project is for Design and Construction, Commissioning, Turnover and Readiness

1. Summary, Significant Changes and Schedule and Cost History

Background:

This Project Data Sheet (PDS) is the initial submittal for the line-item authorization and funding required for 181B Export Water System Reconfiguration and Upgrade.

This project was initiated as a Minor Construction Project but is now expected to exceed the \$25,000,000 threshold. This Project Data Sheet is requesting authorization to proceed as a line-item construction project. The projected Total Project Cost will capture all costs, including those expended since 2019. Line-Item funding is being requested for the 181B Export Water System Reconfiguration and Upgrade. The 181B Export Water System reconfiguration and upgrade will allow for replacement of aging equipment, reduce the Hanford Site Footprint and to reconfigure the Export Water System to provide long-term reliable uninterrupted water supply to the 200 Area Plateau, Central Plateau Water Treatment Facility, and Waste Treatment Plant.

In 2019, an Export Water System Study was performed. The study was documented in HNF-ENG-61881, Export Water System Study. The study evaluated six alternatives. The study recommended Alternative Number 3. Alternative Number 3 was to upgrade pumps and headers in the 181B River Pump Stations, bypassing the 182B Reservoir and pumping station. The study resulted in the initiation of Project L-826. At that time, the Project underwent a Capitalization Determination based on the scope and preliminary rough order of magnitude cost estimate generated to support Project Initiation activities. The Capital Determination documented that the L-826 Project would be a Minor Construction Project.

The Total Estimated Cost rough order of magnitude estimate has increased as the Project has progressed. The original cost estimate was based on the previous conceptual design with 3 pumps (two large pumps and one small pump), which is not applicable to the current project scope and design that includes: 7 pumps (five 450 hp pumps, two 200 hp pumps), a new 200W feed pump building (~4000 SF) with 5 pumps (60 hp each) and two water storage tanks to supply the Central Plateau Water Treatment Facility. Based on recent estimations, the rough order of magnitude estimate for the 181B Export Water System Reconfiguration and Upgrade now exceeds \$25,000,000 Total Project Cost. This project will be managed as a line item and in accordance with the DOE Order 413.3B.

Summary:

This is the initial submittal of a PDS for this Project. This Project Data Sheet includes actual costs of \$720,000 for work performed to through 9/30/21 and \$1,300,000 planned in FY 2022. The FY 2023 request is \$480,000 of Other Project Costs. The ROM for this project is \$51,000,000.

A Federal Project Director at the appropriate level has been assigned to this project since its inception as a minor construction project and the Federal Project Director has approved this Construction PDS.

Significant Changes:

This Construction Project Data Sheet is an initial submittal and represents a new start for the budget year 2023. This project was previously initiated as a Minor Construction Project but has experienced growth in the Total Estimated Cost and Total Project Cost and will now be managed as a Capital Asset Line-Item Project per the requirements of DOE Order 413.3B.

2. Critical Decision History

Fiscal Year (FY)	CD-0	Conceptual Design	CD-1	Final Design	CD-2/3	CD-4	D&D Complete
FY 2023 Request	01/12/2022	5/25/21	3/22/2022	Q4FY2022	Q2FY2023	Q3FY2030	TBD

Note: The CD-0, 1 & 2/3 dates are deterministic. The CD-4 date is risk informed and calculated at 90% Confidence level.

CD-0 –Mission Need approved.

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 Decommissioning and Decontamination (D&D) work.

D&D Complete – Completion of Decommissioning and Decontamination work.

3. Baseline and Validation Status

(Dollars in thousands)

FY 2023 Request	TEC, Design	TEC, Construction	TEC, Total	OPC, Except D&D	OPC, D&D	OPC, Total	TPC
	2,100	46,400	48,500	2,500	N/A	2,500	51,000

4. Project Description, Scope and Justification

Scope:

The scope of the 181B Export Water System Reconfiguration and Upgrade Project includes the planning, design, construction, testing, commissioning and readiness for the new Export Water System. The project will include upgrades to the existing 181B River Pump Station building, as necessary to support the facility. Upgrades to the 181B building will include lighting, heating, ventilation and air conditioning (HVAC), operator area, doors, stairways, walkways, fire protection, and other necessary building, mechanical, and electrical equipment modifications.

Project L-826 will upgrade the aging vertical turbine pumping system currently installed in the 181B River Pump House. Four existing pumps will be replaced by seven more efficient pumps controlled by Variable Frequency Drives. These new pumps will be sized to directly meet pressure requirements on the Central Plateau throughout the required flow range.

Project L-826 will reconfigure the Export Water System in the 100B area to bypass the 25-million-gallon reservoir at 182B and pump water directly from the river to the two 3-million-gallon reservoirs (282E/282W), 100K Operations, the 100 Area Fire Station (Station 91), and the Water Treatment Plant at the 200 Area Plateau. A temporary pumping system will be designed and installed to provide a water supply source from the existing 181B wet well to the 182B Reservoir during construction, while power at the 181B building for pumps and electrical is offline.

In addition to upgrading the Export Water System, this project will upgrade the aging electrical distribution system. Existing utility and facility transformers, switchgear, and panel boards will be replaced with new equipment that will minimize arc flash hazards in accordance NFPA 70 and allow for ease of operations and maintenance. In addition to replacing some existing equipment, the electrical system upgrade will include a new diesel power generator and automatic transfer switch to provide standby power in the event of a loss of normal power.

Justification:

The Export Water System provides all raw water to the 100 Area and 200 Area Plateau. The Export Water System supplies all water to the Water Treatment Facility for the treatment and distribution to the Sanitary Water system as well as provides water to the 100K Area, the 100 Area Fire Station (Station 91), and to the raw water reservoirs in 200E and 200W. This project provides the capability to bypass the 182B Reservoir and pumping system, thus allowing the decommissioning of the 182B Reservoir.

Key Performance Parameters

The new L-826 Export Water System can provide export water at up to 10,788 gallons per minute supporting and sustaining raw and sanitary water demands on the Central Plateau.

5. Financial Schedule

	(Dollars in thousands)		
	Appropriations ¹	Obligations	Costs
Total Estimated Cost (TEC)			
Design			
FY 2021	20	20	20
FY 2022	1,100	1,100	1,100
FY 2023	480	480	480
FY 2024	500	500	500
Total, Design	2,100	2,100	2,100
Construction			
FY 2025	2,300	2,300	2,300
FY 2026	12,700	12,700	12,700
FY 2027	24,700	24,700	24,700
Outyears	6,700	6,700	6,700
Total, Construction	46,400	46,400	46,400
TEC, Total			
FY 2021	20	20	20
FY 2022	1,100	1,100	1,100
FY 2023	480	480	480
FY 2024	500	500	500
FY 2025	2,300	2,300	2,300
FY 2026	12,700	12,700	12,700
FY 2027	24,700	24,700	24,700
Outyears	6,700	6,700	6,700
Total TEC	48,500	48,500	48,500
Other Project Cost (OPC)			
FY 2019	300	300	300
FY 2020	100	100	100
FY 2021	300	300	300
FY 2027	400	400	400
Outyears	1,400	1,400	1,400
Total OPC	2,500	2,500	2,500
Total Project Cost (TPC)			
FY 2019	300	300	300
FY 2020	100	100	100
FY 2021	320	320	320

	(Dollars in thousands)		
	Appropriations ¹	Obligations	Costs
FY 2022	1,100	1,100	1,100
FY 2023	480	480	480
FY 2024	500	500	500
FY 2025	2,300	2,300	2,300
FY 2026	12,700	12,700	12,700
FY 2027	25,100	25,100	25,100
Outyears	8,100	8,100	8,100
TPC	51,000	51,000	51,000
1. Appropriations for FY2019-2022 were previously requested to support this as a Minor Construction Project.			

6. Details of Project Cost Estimate

	(Dollars in thousands)		
	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design	2,100	0	N/A
Contingency	0	0	N/A
Total, Design	2,100	0	N/A
Construction	43,000	0	N/A
Contingency	3,400	0	N/A
Total, Construction	46,400	0	N/A
Total, TEC	48,500	0	N/A
Other Project Cost (OPC)			
OPC except D&D	1,600	0	N/A
Conceptual Design	700	0	N/A
Contingency	200		
Total, OPC	2,500	0	N/A
Total, TPC	51,000	0	N/A

7. Schedule of Appropriation Requests

		FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	Outyears	Total
FY 2023 Request	TEC	0	0	20	1,100	480	500	2,300	12,700	31,400	48,500
	OPC	300	100	300	0	0	0	0	0	1,800	2,500
	TPC	300	100	320	1,100	480	500	2,300	12,700	33,200	51,000

- Note 1: FY 2019 – FY 2022 appropriations not previously requested as part of Capital Line Item. As noted above, project has been proceeding as a reportable Minor Construction Project and therefore funds were provided as part of operating budget.

8. Related Operations and Maintenance Funding Requirements

Start of Operation or Beneficial Occupancy (fiscal quarter or date)	Q3 FY2030 (Risk informed, 90% Confidence level)
Expected Useful Life (number of years)	50
Expected Future Start of D&D of this capital asset (fiscal quarter)	FY2080

No Operation and Maintenance funding is included in Line-Item request.

(Dollars in thousands)

	Annual Costs		Life Cycle Costs (Based on 50-year period)	
	Current Total Estimate	Previous Total Estimate	Current Total Estimate	Previous Total Estimate
Storage Operations	\$1M	N/A	\$50M	N/A
Utilities (See Note 1)	N/A	N/A	N/A	N/A
Maintenance & Repair	\$0.625M	N/A	\$31.25M	N/A
Total (See Note 2)	\$1.625	N/A	\$81.25M	N/A

Note 1: No significant impact to utilities cost from the existing system to the new.

Note 2: Costs are not escalated for future years.

9. D&D Information

The reservoir and associated pumping systems will be taken out of service and turned over to another Hanford Contractor for D&D. Identity of Contactor and timing will be dependent upon status of the Site mission at that time.

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

To complete this project safely and in the most cost-effective manner, DOE has directed the Hanford Infrastructure prime contractor to perform and manage this work. This approach makes the best use of site expertise and efficiently uses the existing contract.

The Hanford Infrastructure prime contractor organization has and will serve as the Design Authority responsible for establishing the design requirements and ensuring that design output documents accurately reflect the design basis. The Design Authority is responsible for design control and ultimate technical adequacy of the design process. These

responsibilities are applicable whether the process is conducted fully in-house, partially contracted to outside organizations, or fully contracted to outside organizations. The Design Authority will carefully control and monitor each design tier to ensure the design inputs, design constraints, design analysis and calculations, and design requirements are identified, accurate, complete, and documented.

Subcontracts have been and continue to be competitively awarded by the Hanford Infrastructure prime contractor.

Awarded subcontracts include:

1. Design: Conceptual Design through Final Design will be performed by a subcontractor to the Hanford Infrastructure Prime Contractor. The subcontract will be awarded via a competitive procurement. The vendor who performs the design will also support procurement, construction and startup and testing activities. Design was completed as part of the minor construction project, costs for the design are included in this document.
2. Construction: Construction activities will be performed by a subcontractor to the Hanford Infrastructure Prime Contractor. The subcontract will be awarded via a competitive procurement.

Subcontracting strategies for any other services will be determined based on the circumstances and work scope of each Critical Decision.

River Protection

Overview

The U.S. Department of Energy, Office of River Protection supports 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 radioactive and chemical waste stored in underground tanks at the Hanford site, treat the waste to standards that are protective of human health and the environment, prepare the waste for permanent disposal, close the tanks, and decommission the treatment facilities. The Office of River Protection and the Richland Operations Office work together to facilitate mutual mission success.

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. 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 in close proximity to the Columbia River. To date, waste has been retrieved from 19 tanks with two in progress that are now transitioning towards closure.

The Department is committed to treating all Hanford tank waste safely and effectively and is working to construct and operate the Waste Treatment and Immobilization Plant (WTP). The Department is on track to initiate tank waste treatment via the Direct Feed Low Activity Waste approach no later than the end of calendar year 2023. This strategy allows the Department to address the most mobile tank waste in the near term by feeding low-activity waste directly from the tank farms to the Low-Activity Waste Facility, using a Tank-Side Cesium Removal system, filtration, and shielded ion exchange system. Beginning some tank waste treatment in the near term will reduce environmental harms and better inform collaboration between the Department and the State of Washington on a safe, viable path forward for all of Hanford's tank waste.

The direct maintenance and repair activities at the Office of River Protection are estimated to be \$119,229,000.

Highlights of the FY 2023 Budget Request

The Office of River Protection FY 2023 budget request supports continued progress toward important cleanup required by the Amended Consent Decree and Tri-Party Agreement. The budget request is focused on work to begin hot commissioning and ramp up the capability of the Direct Feed Low Activity Waste strategy. The request also supports work at the Waste Treatment Plant High-Level Waste Facility to advance facility engineering and design, initiate long-lead procurement to support design, and planning for construction. This request also supports safe operations including a robust Tank Integrity Program of the tank farms to protect workers, the public, and the environment; meet regulatory commitments; and enable the development and maintenance of infrastructure necessary to enable waste treatment operations.

Funding is also requested for a new line-item, "23-D-403, Hanford 200 West Area Tank Farms Risk Management Project," to mitigate risks and add operational capabilities to enable near-term retrievals, treat tank waste, and manage double shell tank space in the 200 West Area Tank Farms.

FY 2022 & FY 2023 Key Milestones

The following listing represents key milestones included in the Tri-Party Agreement and the Amended Consent Decree for performance in fiscal years 2022 and 2023.

- (TBD) D-16B-03; Of the 12 Single Shell Tanks Referred to in B-1 and B-2, Complete Retrieval of Tank Wastes in at Least 5. ^{1,2}
- (October 2021) M-045-92Z; Submit to Ecology Design for Barrier 4 in 241-U Farm.
- (September 2022) M-045-15; Completion of Tank A-103 Single Shell Tank Waste Retrieval.

- (October 2022) M-045-92Y; Complete Construction of Barrier 3 in 241-TX Farm.
- (TBD) D-00A-08; Start Low-Activity Waste Facility Cold Commissioning.²
- (December 2022) M-062-54B; Achieve Substantial Completion of Low-Activity Waste Pretreatment Capability Construction for Direct Feed Low-Activity Waste Initial Operations.
- (April 2023) M-062-51; Achieve Substantial Completion of Liquid Effluent Retention Facility/Effluent Treatment Facility construction upgrades necessary for Low-Activity Waste Hot Commissioning.
- (April 2023) M-062-54; Low-Activity Waste Pretreatment Capability; Cold Commissioning Complete.
- (June 2023) M-062-52; Achieve Substantial Completion of Secondary Waste Construction Necessary for Low-Activity Waste Hot Commissioning.
- (August 2023) M-062-53; Effluent Management Facility Cold Commissioning Start.
- (August 2023) M-062-55; Low-Activity Waste Pretreatment Capability Necessary to Feed Direct Feed Low-Activity Waste; Hot Commissioning Complete.

¹ Amendment proposed per Third Amended Consent Decree, State of Washington v. Dept. of Energy, No: 2:08 CV 5085 RMP (October 12, 2018).

² On December 10, 2020, the US District Court Eastern District of Washington issued order modifying amended Consent Decree in State of Washington v. Brouillette, et al., No.2:08-cv-5085-RMP (E.D. Wash.) documenting method for calculating an extension of several milestones to offset work interruptions, due to the coronavirus disease 2019 (COVID-19) concerns and resulting impacts.

Regulatory Framework

The Department, the U.S. Environmental Protection Agency, and the Washington State Department of Ecology signed a comprehensive cleanup and compliance agreement on May 15, 1989. The *Hanford Federal Facility Agreement and Consent Order*, or Tri-Party Agreement, is an agreement for achieving compliance with the *Comprehensive Environmental Response, Compensation, and Liability Act* remedial action provisions and the *Resource Conservation and Recovery Act* treatment, storage, and disposal unit regulations and corrective action provisions, subject to the Department's *Atomic Energy Act* authority. The Tri-Party Agreement 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 cleanup commitments and enforceable milestones to achieve regulatory compliance and remediation.

In addition, the Office of River Protection's activities must also comply with a federal court Amended Consent Decree that addresses designated Waste Treatment and Immobilization Plant construction and startup activities and retrieval of specified single shell tanks. This decree was entered into court on October 25, 2010, in the case of State of Washington and Oregon v. United States Department of Energy, No. 08-5085 (E.D. Wash.). The Consent Decree was amended in 2016 (herein the Amended Consent Decree).

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.

The Environmental Management Consolidated Business Center is currently in the acquisition process to solicit and award a follow-on contract for the safe operation of nuclear facilities associated with tank waste storage, treatment, and disposal. This end state contract is known as the Integrated Tank Disposition Contract, and specific activities include management and maintenance of 177 underground waste tanks, tank waste retrieval, construction and operation of the Tank Side Cesium Removal and follow-on technology, and delivery of feed and operations of the Waste Treatment and Immobilization Plant in the direct feed low-activity waste configuration. The Waste Treatment and Immobilization Plant operations include the integrated operation of multiple facilities including the Low-Activity Waste Facility, Analytical Laboratory, Effluent Management Facility, and Balance of Facilities (supporting buildings and utilities).

Current contracts at the site include:

- Bechtel National, Inc., provides the personnel, materials, supplies, and services and otherwise do all things necessary and incident to designing, constructing, and commissioning the Hanford Tank Waste Treatment and Immobilization Plant. This is a Cost-Plus Award-Fee Contract, with award and multiple fee incentives. This Contract is a completion contract. The period of performance for this Contract shall extend from December 11, 2000, through December 31, 2022.
- Washington River Protection Solutions LLC is responsible for safely managing the 56 million gallons of radioactive tank waste until it is prepared for treatment and disposal. The contract covers the period from May 29, 2008, through September 30, 2013, with option period one October 1, 2013, through September 30, 2016, and option period two October 1, 2016, through September 30, 2018. It is a Cost-Plus Award-Fee Contract. The Department has exercised both option periods and has extended the contract up to 60 months from October 1, 2018, through September 30, 2023, to allow the acquisition team to solicit, award and transition the new Integrated Tank Disposition Contract.
- Hanford Laboratory Management and Integration LLC is responsible for safely managing the Hanford 222-S Laboratory complex that provides Hanford contractors with analytical support, including inorganic chemistry, organic chemistry, radiochemistry and scientific research for the storage and treatment of highly radiological tank waste on the Hanford Site. The 222-S Laboratory contract base period is from January 5, 2021, through January 4, 2026. Option period 1 is from January 5, 2026, through January 4, 2027, and option period 2 is from January 5, 2027, through January 4, 2028. It is a performance-based contract that includes Cost-Plus-Award-Fee and Cost Reimbursable (CR non-fee bearing) contract line-item numbers.

Strategic Management

The Department continues to focus on treating all Hanford tank waste safely and effectively by continuing to progress the Direct Feed Low Activity Waste program. The Department is continuing to advance startup and commissioning of the Low-Activity Waste Facility, along with the Effluent Management Facility, Balance of Facilities and Analytical Laboratory necessary for the Direct Feed Low-Activity Waste approach.

Work continues to define and procure long-lead consumables and spare parts required to continue operations upon completion of hot commissioning. 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 will continue preservation maintenance activities. High-Level Waste Facility is also advancing design reinitiating procurement support and initial planning to restart construction activities.

The Department is in the process of finalizing the Analysis of Alternatives which will provide input that will be utilized by the Department to derive preferred alternatives for further analyses to support decision on the approach to address the high-level waste portion of the Hanford tank waste inventory to best meet the overall mission. The Department continues to work closely with the State of Washington on options to safely and effectively retrieve high-level tank waste at Hanford.

River Protection

Funding (\$K)

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted	FY 2023 Request vs FY 2021 Enacted (%)
Defense Environmental Cleanup					
Office of River Protection					
Tank Farm Activities					
ORP-0014 / Radioactive Liquid Tank Waste Stabilization and Disposition					
Operating	784,000	784,000	801,100	+17,100	+2%
Construction					
23-D-403: Hanford 200 West Area Tank Farms Risk Management Project (ORP-0014)	0	0	4,408	+4,408	N/A
	784,000	784,000	805,508	+21,508	+3%
Waste Treatment and Immobilization Plant					
ORP-0060 / Major Construction-Waste Treatment Plant					
Construction					
01-D-16D: High Level Waste Facility	25,000	25,000	316,200	+291,200	+1165%
01-D-16E: Pretreatment Facility	0	0	20,000	+20,000	N/A
18-D-16: Waste Treatment and Immobilization Plant LBL/Direct Feed LAW	786,000	786,000	0	-786,000	-100%
ORP-0070 / Waste Treatment Plant Commissioning	50,000	50,000	462,700	+412,700	+825%
Subtotal, Waste Treatment and Immobilization Plant	861,000	861,000	798,900	-62,100	-7%
Total, Office of River Protection	1,645,000	1,645,000	1,604,408	-40,592	-2%

River Protection
Explanation of Major Changes (\$K)

FY 2021 Enacted	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted
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Defense Environmental Cleanup

Office of River Protection

Tank Farm Activities

ORP-0014 / Radioactive Liquid Tank Waste Stabilization and Disposition

- The increase supports additional operational capabilities to enable near-term retrievals, treat tank waste, manage double shell tank space in East and West Area Tank Farms, and other risk mitigation activities. Line item funding is requested to mitigate risks and add operational capabilities to enable near-term retrievals, treat tank waste, and manage double shell tank space in the 200 West Area Tank Farms.

	784,000	805,508	+21,508
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Waste Treatment and Immobilization Plant

ORP-0060 / Major Construction-Waste Treatment Plant

- The request supports High-Level Waste Engineering, Procurement, and Construction activities. The decrease is due to completion of the line-item scope for the Direct Feed Low-Activity Waste portion of the project.

	811,000	336,200	-474,800
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ORP-0070 / Waste Treatment Plant Commissioning

- The increase is due to beginning Hot Commissioning and ramp up of capability for Direct Feed Low-Activity Waste strategy.

	50,000	462,700	+412,700
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Total, River Protection	1,645,000	1,604,408	-40,592
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Radioactive Liquid Tank Waste Stabilization and Disposition (ORP-0014)

Overview

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

This project includes activities required to manage and stabilize approximately 56 million gallons of radioactive waste stored underground in 177 tanks, including retrieval, treatment, and disposal. To date, waste has been retrieved from 19 tanks with two in progress, including 6 tanks that were assumed to have leaked. Ultimately, the majority of the waste must be processed to a form suitable for disposal.

This PBS includes planning, design, construction, and operation of new facilities and equipment necessary for waste feed delivery from tank farms to the Waste Treatment and Immobilization Plant to meet the December 31, 2023, Low-Activity Waste Facility startup milestone from the 2016 Amended Consent Decree. It also includes required operations, maintenance, and upgrades of double shell tank farms, retrieval operations in single shell tank farms, the 242-A Evaporator, the Effluent Treatment Facility, and the 222-S Laboratory to manage the waste, support safe nuclear and environmentally compliant operations at Hanford, and enable Waste Treatment and Immobilization Plant operations.

This project also includes minor construction 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 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
\$784,000,000	\$805,508,000	+\$21,508,000
<p>Tank Closure</p> <ul style="list-style-type: none"> Submitted Waste Management Areas A/AX Integration Study to Ecology. Completed U-Farm interim surface barrier design. Completed installation of TX-Farm interim surface barrier. Completed T-Farm direct push and sampling activities. <p>AX Farm Retrievals</p> <ul style="list-style-type: none"> Transmitted AX-102 Retrieval Completion Certification to Ecology. 	<p>Effluent Treatment Facility operation and maintenance</p> <ul style="list-style-type: none"> Provide treatment and disposal of liquid waste from Hanford site nuclear waste treatment and remediation processes to include the Hanford K-Basins, tank farms, and the Waste Treatment and Immobilization Plant. Process liquid inventory to manage space in support of the Hanford mission. Conduct maintenance activities to support continued use of the effluent treatment 	<ul style="list-style-type: none"> The increase supports additional operational capabilities to enable near-term retrievals, treat tank waste, manage double shell tank space in East and West Area Tank Farms, and other risk mitigation activities. Line item funding is requested to mitigate risks and add operational capabilities to enable near-term retrievals, treat tank waste, and manage double shell tank space in the 200 West Area Tank Farms.

**Environmental Management/
River Protection**

- Completed AX-104 Residual Volume Measurement System Report and Retrieval Completion Report.

Tank-Side Cesium Removal Operations

- Completed Tank Side Cesium Removal Contractor Readiness Assessment and developed resolutions to pre-start findings.
- Initiated AP-02D pit work to install riser adapter and jumper connecting the tank to ICD-31.

242-A Evaporator upgrades

- Completed AW-B, AW-02E, and evaporator wall nozzle installations for the 242-A transfer line replacement.
- Completed phase 1 and 2 excavation for the 242-A transfer line replacement and initiated phase 3 excavation.
- Completed the 242-A Documented Safety Analysis safety systems upgrades.

Tank Farm Integrity Program to prolong the lifespan of aging tanks

- Completed core sampling of AN-106 and AN-101.
- Completed TX-113 leak assessment report declaring a change in tank status from “assumed leaker” to “sound”.
- Completed deployment of the Annulus Floor Cleaner system at AY-101.

Effluent Treatment Facility operation and maintenance

- Completed Liquid Effluent Retention Facility Basin 44 cover replacement.
- Completed Effluent Treatment Facility Basin 41 catch basin concrete placement and anchor wall to catch basin concrete placement.
- Processed 3,200,000 gallons through Effluent Treatment Facility.

222-S Laboratory Operations

**Environmental Management/
River Protection**

facility including auxiliary buildings. Major planned maintenance includes single shell tank Drum Handling System replacement, Treated Effluent Disposal to enhance future operations, Influent Filtration Piping System upgrade, and Liquid Effluent Retention Facility Transfer Pipeline leak detection.

Tank-Side Cesium Removal Operations

- Procure and fabricate additional ion-exchange columns to support Tank Side Cesium Removal operations.
- Pretreat up to one million gallons of supernatant through Tank Side Cesium Removal system and stage waste in AP-106 for Direct Feed Low-Activity Waste strategy.

Waste Feed Delivery

- Complete AP electrical infrastructure maintenance to support Direct-Feed Low-Activity Waste operations.
- Conduct maintenance activities in AW Farm to support 242-A Evaporator operations.
- Plan for mission execution strategies, including the next System plan.
- Complete double shell tank transfers to support Tank Side Cesium Removal and 242-A Evaporator operations.

Waste Treatment and Immobilization Plant and Direct-Feed Low-Activity Waste Support

- Support Direct Feed Low-Activity Waste integration and operations.

242-A Evaporator operations

- Complete slurry line replacement project to support operations.
- Complete readiness assessment.
- Resume evaporator campaigns.

Maintenance of Infrastructure and Aging Tanks

-
- Completed 222-S laboratory transition to new contractor.
 - Maintain functionality of critical facilities and equipment to support Direct Feed Low-Activity Waste operations and the Hanford mission until all tank farms are closed.
- AX Farm Retrievals**
- Complete retrieval operations in AX-101.
 - Complete Retrieval Completion Certification and Retrieval Data Report for AX-103.
- A Farm Retrievals**
- Complete waste retrieval system construction installation for Tank A-101 and turnover to operations.
 - Waste retrieval system construction for Tank A-102 and turnover to operations.
 - Liquid-level Element removals from A Farm.
- Tank Farm Integrity Program to prolong the lifespan of aging tanks**
- Perform annual visual and ultrasonic tank inspections of double- and single-shell tanks and chemistry controls to maintain structure and integrity of waste storage tanks.
 - Conduct additional structural analysis to ensure tanks are structurally sound and regulatory compliant.
- Tank Farm Vapors**
- Finish fabrication and in-farm construction for Nucon Thermal Oxidation System.
 - Begin field demonstration testing.
- West Area Waste Cleanup**
- Approve Critical Decision 1 – Alternative Selection and Cost Range for the 200 West Area Tank Farms Risk Management Project.
- 222-S Laboratory Operations**
- Provide analytical services to the Hanford site in support of DLFAW and other site operations.

Major Construction-Waste Treatment Plant (PBS: ORP-0060)

Overview

This Project Base Line Summary (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 and mixed radioactive and hazardous tank waste at the Hanford Site. The Waste Treatment and Immobilization Plant will construct: Pretreatment Facility, High-Level Waste Facility, Low-Activity Waste Facility, Analytical Laboratory, Balance of Facilities and an Effluent Management Facility. The Pretreatment Facility will separate the radioactive tank waste into low-activity and high-level radioactive waste fractions. The high-level radioactive waste fraction will be transferred to the High-Level Waste Facility for immobilization to be made ready for placement into storage. A significant portion of the low-activity waste fraction will be immobilized in the Low-Activity Waste Facility; the Department continues to perform studies for a supplemental treatment technology to be used to immobilize the remaining low-level radioactive waste not treated in the Low-Activity Waste Facility. 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 required to support overall plant operations. The Effluent Management Facility will manage the high volume of water generated while retrieving and treating low-activity waste for disposal.

Major Construction-Waste Treatment Plant (PBS: ORP-0060)

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
\$811,000,000	\$336,200,000	-\$474,800,000

Low-Activity Waste Facility –

Engineering Design Activities:

- Complete work to go and punch list items for all facility systems.

Construction Activities:

- Field installation of design changes associated with startup and commissioning of the facilities 94 systems.

Startup Activities:

- Complete handover to Facility Management for all facility systems. Initiate loss of power testing and system cold commissioning testing of the facility.

Commissioning Activities:

- Finalize development and implementation of operational procedures, complete refurbishments, conduct simulator training and accept handover from Startup on all 94 facility systems.
- Continue Operations and Maintenance Training.
- Continue Preventative Maintenance.

Balance of Facilities/Direct Feed Low-Activity Waste/Effluent Management Facility –

Construction Activities:

- Complete construction of Effluent Management Facility and support field installation of design changes associated with startup and commissioning facilities (133 systems).

Startup activities:

- Complete walk downs and submit handover to Facility Management for all remaining systems and commission Balance of Facilities to support Low-Activity Waste.

Commissioning Activities:

- Continue facility operations and operational support of direct feed Low-Activity Waste process systems.

High-Level Waste Facility and Pretreatment Facility

Engineering Design Activities:

- Achieve 60% design on all 56 systems
- Complete 90% design for sixteen systems covering Chemical, Melter Feed, Offgas and Ventilation systems and Facility Structural design.
- Annual update to the Preliminary Documented Safety Analysis to maintain alignment with design.

Procurement Activities:

- Vendor awards for design for Melter Feed equipment and pumps, Ventilation Filter housing and equipment.

Maintenance/Construction Activities:

- Preservation Maintenance.
- Construction Planning and Material staging.
- Subcontract Planning and initiate contractor mobilization.
- Initiate construction preparation to support ramp up.

Pretreatment facility:

- Support facility preservation and maintenance activities.

- The request supports High-Level Waste Engineering, Procurement, and Construction activities. The decrease is due to completion of the line-item scope for the Direct Feed Low-Activity Waste portion of the project.

-
- Continue Operations and Maintenance Training.
 - Continue Preventative Maintenance and Corrective Maintenance.

Analytical Laboratory –

Engineering Activities:

- Support Waste Treatment and Immobilization Plant commissioning activities.

Startup Activities:

- Support Waste Treatment and Immobilization Plant startup activities.

Commissioning:

- Complete commissioning and operate Lab to support Low-Activity Waste commissioning.
- Continue Operations and Maintenance Training.
- Continue Preventative Maintenance and Corrective Maintenance.

High-Level Waste Facility and Pretreatment Facility

Construction Activities:

- Support facility preservation activities.

Waste Treatment Plant Operations (PBS: ORP-0070)

Overview

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

This PBS provides for the activities outside of line-item 01-D-416, Waste Treatment and Immobilization Plant, but are required to support the treatment of tank wastes in the plant including the implementation of the strategy of the direct feed low-activity waste approach. This is the first phase of Waste Treatment and Immobilization Plant operations. This includes the operational scope for the Low-Activity Waste Facility, the Analytical Laboratory, and the Balance of Facilities starting with hot commissioning but after project completion (Critical Decision 4) for those facilities.

This PBS also includes the procurement of necessary spare parts and consumable commodities necessary to support operations.

Waste Treatment Plant Commissioning (PBS: ORP-0070)

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
\$50,000,000	\$462,700,000	+\$412,700,000
<ul style="list-style-type: none"> Completed Low-Activity Waste Maintenance and Storage Facility exterior modifications to accelerate melter assembly capabilities. Completed Low-Activity Waste Facility melter drying system design and initiated procurement. Completed Low-Activity Waste Maintenance and Storage Facility crane installation and load testing. 	<ul style="list-style-type: none"> Begin Hot Commissioning and Ramp up of capability for Direct Feed Low-Activity Waste. Procure long lead spare parts and miscellaneous consumables to support post hot commissioning. Procure ~850 Low-Activity Waste containers. Complete fabrication and receipt of remaining ~144 Low-Activity Waste bubblers. Continue fabrication and assembly of two spare melters for the Low-Activity Waste facility. 	<ul style="list-style-type: none"> The increase is due to beginning Hot Commissioning and ramp up of capability for Direct Feed Low-Activity Waste strategy.

**Office of River Protection
Capital Summary (\$K)**

Total	Prior Years	FY 2021 Enacted	FY 2021 Actuals	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted
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Capital Operating Expenses Summary (including (Major Items of Equipment (MIE))

Capital Equipment > \$500K (including MIE)	0	0	0	0	0	0
Minor Construction (<\$25M)	92,330	15,519	31,073	22,953	31,073	-16,408
Total, Capital Operating Expenses	92,330	15,519	31,073	22,953	31,073	-16,408

Minor Construction (Total Estimated Cost (TEC) <\$25M)

<u>River Protection (Direct Funded)</u>						
Construct New Maintenance Shop ^a	19,306	4,550	6,670	9,515	6,670	-5,254
ETF Acetonitrile Treatment Upgrade ^a	14,309	2,700	5,320	5,277	5,320	-4,351
ETF Load in Expansion ^a	15,188	3,729	4,160	2,646	4,160	-1,021
Ancillary Equipment Addition	1,040	1,040	0	0	0	0
222-S Office Space Addition ^a	9,754	500	4,480	562	4,480	-4,186
AP Farm Tanker Truck Loading and Off Loading Station ^a	2,936	2,500	218	57	218	-218
Modular Grout System	8,450	0	4,225	1,646	4,225	-4,225
ETF Motor Control Center Upgrades	8,200	500	3,850	1,563	3,850	-3,850
ETF Brine Storage Tanks ^a	13,147	0	2,150	1,687	2,150	+6,697
Total, River Protection	92,330	15,519	31,073	22,953	31,073	-16,408

Total, Capital Summary	92,330	15,519	31,073	22,953	31,073	14,665	-16,408
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^a These capital investments represent expenditures that may be accelerated to FY 2022 based on emerging or identified risks.

**Office of River Protection
Construction Projects Summary (\$K)**

Total	Prior Years	FY 2021 Enacted	FY 2021 Actuals	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted
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Waste Treatment and Immobilization Plant, Hanford WA

*18-D-16, Waste Treatment and Immobilization Plant LBL/Direct Feed
LAW*

Total Estimate Cost (TEC)	TBD	6,968,000	786,000	606,699	786,000	0	-786,000
Other Project Costs (OPC)	0	0	0	0	0		0

01-D-16D, High-Level Waste Facility

Total Estimate Cost (TEC)	TBD	2,805,833	25,000	66,169	25,000	316,200	+291,200
Other Project Costs (OPC)	0	0	0	0	0		0

01-D-16E Pretreatment Facility

Total Estimate Cost (TEC)	TBD	3,757,050	0	15,806	0	20,000	+20,000
Other Project Costs (OPC)	0	0	0	0	0		0

Total Estimate Cost (TEC)	TBD	13,530,883	811,000	688,674	811,000	336,200	-474,800
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Other Project Costs (OPC)	0	0	0	0	0	0	0
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Total Project Cost (TPC) 01-D-416	TBD	13,530,883	811,000	688,674	811,000	336,200	-474,800
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23-D-403 200 West Area Tank Farms Risk Management Project

Total Estimated Cost (TEC)	TBD	0	0	0	0	3,908	+3,908
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Other Project Cost (OPC)	TBD	0	0		0	500	-78
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Total Project Cost (TPC) 23-D-403	TBD	0	0	0	0	4,408	+3,830
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**01-D-416, Waste Treatment and Immobilization Plant
Hanford, (ORP-0060)
Project is for Construction**

1. Summary, Significant Changes, and Schedule and Cost History

Summary

The fiscal year 2023 budget request for the Waste Treatment and Immobilization Plant is \$336,200,000.

On December 15, 2016, the Deputy Secretary approved the direct feed low activity waste approach, contract modification which included hot commissioning, and Project Execution Plan (Critical Decision 4a) to commence no later than August 31, 2023. Subsequent to the approval, the contract was modified to reflect the focus on direct feed low-activity waste scope. The current strategy is to complete the rebaseline effort in phases, first to support direct feed low-activity waste and second to rebaseline the High-Level Waste and Pretreatment facilities in the future. Upon completion of the rebaseline effort, this construction project data sheet will be formally revised and submitted to Congress.

The Department continues construction, startup testing, and commissioning of the Low-Activity Waste Facility, Analytical Laboratory, and Balance of Facilities. For the High-Level Waste and Pretreatment facilities the Department continues preservation and maintenance of the facilities, and associated equipment, components, and material to facilitate successful future ramp-up of design, procurement, and construction activities. The Department remains focused on meeting the milestones contained in the Court's March 11, 2016, Amended Consent Decree, particularly the near-term December 31, 2023, Low-Activity Waste Facility hot commissioning complete milestone.

Significant Changes

This project was initiated in fiscal year 2001. This Construction Project Data Sheet is an update of the FY 2022 Construction Project Data Sheet.

The most recent DOE O 413.3B, *Program and Project Management for the Acquisition of Capital Assets*, approved Critical Decision is Critical Decision 3, which was approved on April 21, 2003.

A federal project director has been assigned to this project.

Because of the technical, safety, quality, management, and issues the Department has identified 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, this data sheet represents the forecasted funding needs for fiscal year 2023. Subsequent funding year needs are to be determined.

2. Critical Milestone History

	Fiscal Quarter or Date						
	CD-0	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	SEP 1995	SEP 1996	04/21/2003	4Q FY2005	04/21/2003	N/A	3Q FY2008
Congressional Notification							
FY 2005	SEP 1995	SEP 1996	04/21/2003	4Q FY2005	04/21/2003	N/A	3Q FY2008
FY 2004	SEP 1995	SEP 1996	04/21/2003	4Q FY2005	04/21/2003	N/A	3Q FY2008
Reprogramming							
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	SEP 1995	SEP 1996	04/21/2003	1Q FY 2016	04/21/2003	N/A	1Q FY 2020
Reprogramming							
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	SEP 1995	SEP 1996	04/21/2003	1Q FY2016	04/21/2003	N/A	TBD
FY 2018	SEP 1995	SEP 1996	04/21/2003	TBD	04/21/2003	N/A	TBD
FY 2019	SEP 1995	SEP 1996	04/21/2003	TBD	04/21/2003	N/A	TBD
FY 2020	SEP 1995	SEP 1996	04/21/2003	TBD	04/21/2003	N/A	TBD
FY 2021	SEP 1995	SEP 1996	04/21/2003	TBD	04/21/2003	N/A	TBD
FY 2022	SEP 1995	SEP 1996	04/21/2003	TBD	04/21/2003	N/A	TBD
FY 2023	SEP 1995	SEP 1996	04/21/2003	TBD	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

CD-4 – Approve Start of Operations or Project Completion

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	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	0	12,263,000	12,263,000	0	0	0	12,263,000
FY 2014	0	12,263,000	12,263,000	0	0	0	12,263,000
FY 2013 Reprogramming	0	12,263,000	12,263,000	0	0	0	12,263,000
FY 2015	0	12,263,000	12,263,000	0	0	0	12,263,000
FY 2016	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
FY 2018	0	12,263,000	12,263,000	0	0	0	12,263,000
FY 2019	TBD	TBD	0	0	0	TBD	TBD
FY 2020	TBD	TBD	0	0	0	TBD	TBD
FY 2021	TBD	TBD	0	0	0	TBD	TBD
FY 2022	TBD	TBD	TBD	0	0	TBD	TBD
FY 2023	TBD	TBD	TBD	0	0	TBD	TBD

The fiscal year 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 10 years of initial operations for a Total Project Cost of \$12,488,000,000. 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 2002, the Department awarded a cost-plus incentive-fee contract estimated at \$4,350,000,000 to design, construct, and commission the Waste Treatment and Immobilization Plant. In April 2003, a contract modification was negotiated with the principal change of increasing the throughput capacity of the High-Level Waste and Pretreatment facilities, with the goal of pretreating all retrieved waste during the 40-year life of the facility, immobilizing all of the high-level waste fraction and at least 40 percent of the low-activity waste fraction. The Department approved a Performance Baseline for this scope with a Total Project Cost of \$5,781,000,000. In December 2006, due to over-optimistic cost estimates and seismic and technical issues, the Department approved a new Performance Baseline with a revised Total Project Cost of \$12,263,000,000.

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.

**Environmental Management/
River Protection/01-D-416 Waste
Treatment and Immobilization Plant,
Hanford, WA**

FY 2023 Congressional Budget Justification

On December 15, 2016, the Deputy Secretary approved the direct-feed low-activity waste approach, contract modification, and Project Execution Plan, with operations to commence by August 31, 2023. The current strategy is to complete the rebaseline effort in phases, with the first phase complete to support direct-feed low-activity waste and second to rebaseline the High-Level Waste and Pretreatment facilities in the future.

In FY 2019 it was determined that all technical issues had been resolved to support design of the Pretreatment Facility. DOE then chartered an Analysis of Alternative to determine how best to provide tank waste feed to the High-Level Waste Facility and the Pretreatment Facility throughout the facility life cycle. Once a path forward is determined, the rebaseline effort will be initiated for the High-Level Waste Facility and the Pretreatment Facility.

4. 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 the Analytical Laboratory and supporting buildings and utilities, collectively known as the Balance of Facilities. The Low-Activity Waste Facility will immobilize, through vitrification, a substantial portion of the low-activity waste fraction. The Department has adopted a strategy to directly feed the Low-Activity Waste Facility to support the start of waste treatment by the 2016 Amended Consent Decree milestone date of December 31, 2023.

As currently designed, the Pretreatment Facility will accomplish the separation of the wastes into low-activity and high-level waste fractions. The High-Level Waste Facility will immobilize, through vitrification, the high-level waste 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 treatment capacity of 3.6 metric tons per day (average daily throughput for both facilities). The Analytical Laboratory will provide the necessary sample analysis needed throughout the processing facilities. The Balance of Facilities includes the plant infrastructure and support facilities (e.g., steam plant, electrical switch yards, chiller plant, etc.) necessary for the plant to operate.

Justification

The Waste Treatment and Immobilization Plant is the cornerstone of the Office of River Protection mission to treat and disposition the 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 complete in 19 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.

One of the Department's key objectives is to design, build, and commission the Waste Treatment and Immobilization Plant. Through a vitrification process, 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.

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.

The final Waste Treatment and Immobilization Plant configuration will pretreat tank waste through separation into a high-level waste fraction and a low-activity waste fraction. Both fractions will be immobilized. The immobilized high-level waste fraction will be temporarily stored on the Hanford Site. The vitrified low-activity waste fraction will be placed in a disposal facility on the Hanford Site.

At this time, while the project is focused on delivery of the direct feed low activity waste capability, the Department will continue preservation and maintenance activities for High Level Waste and Pretreatment facilities, focusing on, but not

limited to, management of assets, appropriate storage, configuration control, and necessary record keeping (to include quality assurance information).

The project is being conducted in accordance with the project management requirements in DOE O 413.3B.

Key Performance Parameters

The Threshold Key Performance Parameters represent the acceptable performance that the project must achieve. Achievement of the Thresholds Key Performance Parameters will be a prerequisite for approval of Critical Decision 4.

Performance Measure	Threshold
Low Activity Waste Pretreatment	2.244 MT sodium per year
High-Level Waste Pretreatment	735 MT as delivered solids per year
Liquid Waste Effluent Management Facility Efficiency	3.1 Volume Reduction
Low-Activity Waste Vitrification	18 MT glass per day
High-Level Waste Vitrification	3.6 MT glass per day

18-D-16, Waste Treatment and Immobilization Plant Low-Activity Waste Facility, Analytical Laboratory, and Balance of Facilities/Direct Feed Low-Activity Waste

Scope and Justification

The Low-Activity Waste Facility will immobilize, through vitrification, a substantial portion of the low-activity waste fraction. The Key Project Performance Parameter for the Low-Activity Waste Facility is a minimum treatment capacity of 18-metric tons of glass per day (average daily throughput). The Analytical Laboratory will provide the necessary sample analysis needed throughout waste processing. The Balance of Facilities includes the plant infrastructure and support facilities (e.g., 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.

The Department has focused the Waste Treatment and Immobilization Plant effort to accelerate construction completion and commissioning of three facilities – Low-Activity Waste Facility, Analytical Laboratory and Balance of Facilities – to meet the Amended Consent Decree requirement to begin operations by December 2023. The waste feed for low-activity waste processing will be provided for these facilities initially by a tank-side cesium removal capability.

The Department has identified the need to construct a separate Effluent Management Facility to manage the high volume of water generated through the processing of low activity waste and to create double shell tank space while treating low activity waste for disposal. As originally envisioned, this capability was going to be located in the Pretreatment Facility; however, with the restructuring of the project to a phased startup, this capability is needed prior to the completion of construction for the Pretreatment Facility, requiring the construction of the Effluent Management Facility under a different, but existing, control point (01-D-416A-C). The Effluent Management Facility was completed in November 2021.

01-D-16D, High-Level Waste Facility

Scope and Justification

The High-Level Waste Facility will immobilize, through vitrification, the high-level waste fraction of the tank waste. The Key Project Performance Parameter for the High-Level Waste Facility is a minimum of 3.6 metric tons of glass per day (average daily throughput). The Waste Treatment and Immobilization Plant contractor will complete process and facility design; perform procurement and construction; conduct acceptance testing; perform startup and commissioning activities; 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 the Low-Activity Waste Facility. The main pretreatment processes include filtration to separate the high curie solids from the low activity liquids and an ion exchange system to remove cesium from the tank waste. The Waste Treatment and Immobilization Plant contractor will complete process and facility design; perform procurement and construction; conduct acceptance testing; perform startup and commissioning activities; and conduct all required environmental, safety, quality, and health activities.

5. Financial Schedule

01-D-416 WTP Total			18-D-16 Waste treatment and immobilization plant LBL/Direct feed LAW			01-D-16D, High-Level Waste Facility			01-D-16E, Pretreatment Facility		
Approps	Obligations	Costs	Approps	Obligations	Costs	Approps	Obligations	Costs	Approps	Obligations	Costs

Total Estimated Cost (TEC) /

Total Project Cost (TPC)

Prior Years	9,864,883	9,864,883	9,664,986	3,824,462	3,824,462	3,729,030	2,540,371	2,540,371	2,548,161	3,500,050	3,500,050	3,387,795
FY 2016	690,000	690,000	741,612	520,264	520,264	538,103	74,736	74,736	86,373	95,000	95,000	117,136
FY 2017	690,000	690,000	713,861	562,274	562,274	533,765	30,726	30,726	61,213	97,000	97,000	118,883
FY 2018	740,000	740,000	649,517	630,000	630,000	588,842	75,000	75,000	30,400	35,000	35,000	30,275
FY 2019	730,000	730,000	751,760	655,000	655,000	685,913	60,000	60,000	45,146	15,000	15,000	20,643
FY 2020	816,000	701,548	688,703	776,000	661,548	606,728	25,000	25,000	66,169	15,000	15,000	15,806
FY 2021	811,000	715,000	518,256	786,000	690,000	496,119	25,000	25,000	17,335	0	0	4,802
FY 2022	750,358	666,000	525,000	586,000	586,000	480,000	144,358	60,000	40,000	20,000	20,000	5,000
FY 2023	336,200	546,652	886,500	0	210,452	681,500	316,200	316,200	200,000	20,000	20,000	5,000
Outyears	TBD	TBD	TBD	0	0	0	TBD	TBD	TBD	TBD	TBD	TBD
Grand Total	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD

6. Details of Project Cost Estimate

(Dollars in Thousands)

01-D-416 WTP Total			18-D-16 Waste treatment and immobilization plant LBL/Direct feed LAW			01-D-16D, High-Level Waste Facility			01-D-16E, Pretreatment Facility		
Current Total Estimate	Previous Total Estimate	Original Validated Baseline	Current Total Estimate	Previous Total Estimate	Original Validated Baseline	Current Total Estimate	Previous Total Estimate	Original Validated Baseline	Current Total Estimate	Previous Total Estimate	Original Validated Baseline

Total Estimated Cost (TEC) /

Total Project Cost (TPC)

Construction

Engineering/Design	TBD	2,547,977	1,475,000	TBD	785,881	N/A	TBD	700,141	N/A	TBD	1,061,954	N/A
Equipment/Procurement ^a	TBD	2,380,748	1,125,000	TBD	675,051	N/A	TBD	670,539	N/A	TBD	1,035,158	N/A
Facility Construction ^b	TBD	3,720,637	2,155,000	TBD	1,241,195	N/A	TBD	913,568	N/A	TBD	1,565,874	N/A
Commissioning ^c		1,409,428	876,000		718,454	N/A		275,217	N/A		415,757	N/A
Technical Support/Transition ^d	TBD	185,000	50,000	TBD	56,292	N/A	TBD	42,332	N/A	TBD	86,376	N/A
Contingency/Fee ^e	TBD	2,019,210	100,000	TBD	414,765	N/A	TBD	570,100	N/A	TBD	1,034,346	N/A
Total Project Cost	TBD	12,263,000	5,781,000	TBD	3,891,638	N/A	TBD	3,171,897	N/A	TBD	5,199,465	N/A

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 startup and cold 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 Department project contingency.

**Environmental Management/
River Protection/01-D-416 Waste
Treatment and Immobilization Plant,
Hanford, WA**

FY 2023 Congressional Budget Justification

7. Schedule of Appropriation Requests

(Dollars in Thousands)

Request Year	Type	Prior Years	FY 2020	FY 2021	FY 2022	FY 2023	Outyears	Total
FY 2016	TEC/TPC	11,450,585	-	-	-		-	12,263,000
FY 2017	TEC/TPC	11,445,585	-	-	-		-	12,263,000
FY 2018	TEC/TPC	11,934,613	-	-	-		-	12,263,000
FY 2019	TEC/TPC	12,714,613	-	-	-		TBD	TBD
FY 2020	TEC/TPC	12,714,613	816,000	-	-		TBD	TBD
FY 2021	TEC/TPC	12,714,613	816,000	609,924	-		TBD	TBD
FY 2022	TEC/TPC	12,714,883	816,000	811,000	666,000		TBD	TBD
FY 2023	TEC/TPC	12,714,883	816,000	811,000	750,358	336,200	TBD	TBD

DOE has chartered an Analysis of Alternative to determine how best to provide tank waste feed to the High-Level Waste Facility and the Pretreatment Facility throughout the facility life cycle. Once a path forward is determined, the rebaseline effort will be initiated for the High-Level Waste Facility and the Pretreatment Facility. Upon completion of the rebaseline effort, this Construction Project Data Sheet will be formally revised to reflect the full WTP TPC and submitted to Congress.

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

(Budget Authority in Millions of Dollars)

	Annual Costs		Life Cycle Costs	
	Previous Total Estimate	Current Total Estimate	Previous Total Estimate	Current Total Estimate
Operations and Maintenance	TBD	TBD	TBD	TBD

Operations will start after the project is completed. These costs are included in Project Baseline Summary ORP-0070, "Waste Treatment and Immobilization Plant," and are therefore not included in this Project Data Sheet.

**Environmental Management/
River Protection/01-D-416 Waste
Treatment and Immobilization Plant,
Hanford, WA**

FY 2023 Congressional Budget Justification

9. D&D Information

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 project is being executed in accordance with the project management requirements in DOE O 413.3B. The following critical decisions were approved after the December 2000 award:

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

The following actions planned for the future were established with BCP-02 approval by the Deputy Secretary:

1. Critical Decision 4a: Approve Start of Initial Operations (hot commissioning) for Direct Feed Low Activity Waste – August 2023
2. Start of Hot Operations Direct Feed Low Activity Waste – TBD

The final Critical Decision 4 and “Final Design Complete” dates for the High-Level Waste and Pretreatment facilities will be set at an indeterminate future date.

**23-D-403, Hanford 200 West Area Tank Farms Risk Management Project
Hanford, Richland, Washington (ORP-0014)
Project is for Design and Construction**

1. Summary, Significant Changes, and Schedule and Cost History

Summary:

Line-item funding is requested to mitigate risks and add operational capabilities to enable near-term retrievals, treat tank waste, and manage double shell tank space in the 200 West Area Tank Farms.

The FY 2023 Request for the Hanford 200 West Area Tank Farms Risk Management Project is \$4,408,000.

The project received CD-0 approval on July 2, 2021, with a preliminary cost range of \$40,000,000 to \$90,000,000. The Analysis of Alternatives to meet the mission need was completed in January 2022.

Significant Changes:

This project is a new start in FY 2023. A Federal Project Director has been assigned to this project and has approved this Construction Project Data Sheet.

Critical Milestone History

Fiscal Year	CD-0	Conceptual Design Complete	CD-1	CD-2	Final Design Complete	CD-3	CD-4	D&D Complete
FY 2023	7/2/2021	2Q FY2023	3Q FY2023	TBD	TBD	TBD	TBD	N/A

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

CD-4 – Approve Start of Operations or Project Closeout

D&D Start – Start of Decommissioning and Decontamination (D&D) work

D&D Complete – Completion of Decommissioning and Decontamination work

Project Cost History

(Dollars in thousands)

Fiscal Year	TEC, Design	TEC, Construction	TEC, Total	OPC, Except D&D	OPC, D&D	OPC, Total	TPC
FY 2023 Request	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.

2. Project Scope and Justification

Scope

The project will provide a treatment capability within the 200 West Tank Farms to provide operational flexibility in managing double shell tank space and provide Direct Feed Low-Activity Waste feed in parallel to the 200 East Area Direct Feed Low-Activity Waste feed. While the full scope of the project is still in development and will be informed by the results from the Analysis of Alternatives, it is anticipated the project will design, build, install, and commission a tank-side

**Environmental Management/
River Protection/23-D-403 Hanford
200 West Area Tank Farms Risk
Management Project, Hanford, WA**

treatment system within the SY Tank Farm with transportation capability for treated waste from the 200 West Area to the 200 East Area.

Justification

The Office of River Protection has a mission need to mitigate risks and add operational capabilities to enable near-term retrievals, treat tank waste, and manage double shell tank space in the 200 West Area Tank Farms. This initiative supports the ORP mission by:

- Removing SY Tank Farm liquid waste, thereby creating available double shell tank space in the 200 West Area to enable single shell tank retrievals and serve as emergency space within the double shell tank system.
- Reducing reliance on a single cross-site supernatant transfer line to deliver untreated radioactive liquid waste to the 200 East Area.
- Complementing Direct Feed Low-Activity Waste by establishing a parallel and near-term capability supporting availability of tank waste feed from the 200 West Area.
- Removing a constraint to enable increased operations of the 222-S Laboratory during the Direct Feed Low-Activity Waste mission by creating additional space for laboratory waste in tank SY-101.
- Removing over 2 million curies of cesium-137 and daughter products in SY Tank Farm years earlier than currently planned.

The addition of a capability within the 200 West Area provides the needed operational flexibility to manage double shell tank space and provide Direct Feed Low-Activity Waste feed in a parallel approach with the Direct Feed Low-Activity Waste feed for the 200 East Area. This will supplement the Direct Feed Low-Activity Waste program capabilities to ensure continuous treatment of tank waste and progress towards emptying tanks across the Hanford Site.

The creation of additional available double shell tank space in the 200 West Area will improve the capability to meet double shell tank emergency space requirements and expedite the 200 West Area single shell tank retrieval and closure process. Addressing this gap in the 200 West Area supports near-term reduction of risk, life-cycle cost, and schedule durations without sacrificing compliance with federal regulations and maintains safety of the workers, the public, and the environment.

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*.

3. Financial Schedule

(Dollars in thousands)			
	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
Design			
FY 2023	3,908	3,908	3,908
Total, Design	3,908	3,908	3,908
Construction			
FY 2023	0	0	0
Outyears	TBD	TBD	TBD
Total, Construction	TBD	TBD	TBD
TEC			
FY 2023	3,908	3,908	3,908
Outyears	TBD	TBD	TBD
Total TEC	TBD	TBD	TBD
Other Project Cost (OPC)			
OPC except D&D			
FY 2021	578	578	578
FY 2022	3,422	3,422	3,422
FY 2023	500	500	500
Outyears	TBD	TBD	TBD
Total OPC except D&D	TBD	TBD	TBD
Total Project Cost (TPC)			
FY 2021	578	578	578
FY 2022	3,422	3,422	3,422
FY 2023	4,408	4,408	4,408
Outyears	TBD	TBD	TBD
Total TPC	TBD	TBD	TBD

4. Details of Project Cost Estimate

(Dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design			
Design	3,908	N/A	N/A
Contingency	0	N/A	N/A
Total, Design	3,908	N/A	N/A
Construction			
Construction	TBD	N/A	N/A
Contingency	TBD	N/A	N/A
Total, Construction	TBD	N/A	N/A
Total, TEC	TBD	N/A	N/A
Contingency, TEC	TBD	N/A	N/A
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning	TBD	N/A	N/A
Conceptual Design	TBD	N/A	N/A
Permitting, Readiness, Testing & Turnover	TBD	N/A	N/A
Contingency	TBD	N/A	N/A
Total, OPC	TBD	N/A	N/A
Contingency, OPC	TBD	N/A	N/A
Total, TPC	TBD	N/A	N/A
Total Contingency	TBD	N/A	N/A

5. Schedule of Appropriations Requests

		(\$K)					
		Prior Years	FY 2021	FY 2022	FY 2023	Outyears	Total
FY 2023 Request	TEC	0	0	0	3,908	TBD	TBD
	OPC	0	578	3,422	500	TBD	TBD
	TPC	0	578	3,422	4,408	TBD	TBD

6. Related Operations and Maintenance Funding Requirements

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

(Dollars in thousands)

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

7. D&D Information

There is no new area being constructed in this construction project.

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

8. Acquisition Approach

To complete this project safely and in the most cost-effective manner, DOE will direct the Tank Operations prime contractor to perform and manage this work. This approach makes the best use of site expertise and efficiently uses the existing contract. Continuity of design will be ensured by making a provision in the new Hanford Integrated Tank Disposition Contract for assignment of the scope, regardless of the timing of a contract turnover.

The Tank Operations prime contractor organization will serve as the Design Authority responsible for establishing the design requirements and ensuring that design output documents accurately reflect the design basis. The design authority is responsible for design control and ultimate technical adequacy of the design process. These responsibilities are applicable whether the process is conducted full in-house, partially contracted to outside organizations, or fully contracted to outside organizations. The Design Authority will carefully control and monitor each design tier to ensure the design inputs, design constraints, design analysis and calculations, and design requirements are identified, accurate, complete, and documented.

Subcontracts will be competitively awarded by the Tank Operations contractor for multiple work scopes to provide best value to the government. Various subcontractors will be used for support services such as technology development, permitting, and safety documentation. Subcontracting strategies for these services will be determined based on the circumstances and work scope of each critical decision.

Savannah River

Overview

The Savannah River Site will support the Department of Energy to meet the cleanup challenges of the nation's Manhattan Project and Cold War legacy responsibilities. The Savannah River Site Office of Environmental Management mission includes safely storing, treating, and disposing of a variety of radioactive and hazardous waste streams, remediating the environment, deactivating and decommissioning excessed facilities, stabilization and immobilization of tank waste, and the secure storage of foreign and domestic nuclear materials including spent nuclear fuel and plutonium. The end-state of the Savannah River Site will be the elimination or minimization of nuclear materials, spent nuclear fuel, plutonium, and waste through safe stabilization, treatment, and/or disposition.

EM also has stewardship responsibilities for the Savannah River National Laboratory (SRNL), a multi-program Federally Funded Research and Development Center that applies unique and specialized capabilities to assist our Nation in mitigating the hazards associated with the Cold War legacy waste; sustaining and improving our nuclear security; and advancing our ability to achieve net-zero emissions no later than 2050. The Savannah River National Laboratory leverages its competencies and capabilities to advance solutions to these critical national needs for all its customers and applies developed technologies to assist sites across the DOE complex in meeting cleanup requirements.

The direct maintenance and repair activities at the Savannah River Site is estimated to be \$ \$203,277,000 in FY 2023.

Highlights of the FY 2023 Budget Request

The Liquid Waste Program will achieve additional risk reduction by stabilization and immobilization of high activity radionuclides through vitrification into canisters at the Defense Waste Processing Facility and disposition of low-level waste in Saltstone Disposal Units. The Salt Waste Processing Facility, a key component in separating radionuclides from the salt waste, became operational in January 2021. This brings the whole liquid waste system into full operations, making it capable of processing the bulk of the waste stored in the tank farms over the next decade. The FY 2023 request includes other project cost and total estimated cost funding for two line-item construction projects: Saltstone Disposal Units #8 and #9 (\$53,957,000) and Saltstone Disposal Units 10-12 (\$41,918,000).

The Nuclear Materials Stabilization and Disposition Program will meet 50 U.S. Code § 2633 that requires continued operations and maintaining a high state of readiness for H-Canyon. In FY 2023, the Department will maintain safe and secure storage of special nuclear material and continue activities in K-area to down blend and package plutonium for disposal at the Waste Isolation Pilot Plant in Carlsbad, New Mexico. The Nuclear Material Stabilization and Disposition Program will provide safe storage of spent nuclear fuel in L-Basin and support receipts of research reactor spent nuclear fuel from both domestic and foreign sources.

The Solid Waste Stabilization and Disposition 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. Continuing risk reduction efforts through dismantlement and removal of excess legacy waste processing structures and disposal of legacy transuranic waste and mixed low level waste.

The Soil and Water Remediation and Facility Deactivation and Decommissioning Program will continue to remediate Savannah River Site contaminated soils, groundwater, streams (and associated wetlands), and waste sites, governed through enforceable regulatory milestones and commitments; and to deactivate and decommission EM-owned excess facilities.

The Savannah River Community and Regulatory Support Program supports Payment In Lieu of Taxes to Aiken, Barnwell, and Allendale Counties, the Citizens Advisory Board, the States of South Carolina and Georgia for emergency management activities, South Carolina Department of Natural Resources for maintaining the Crackerneck Wildlife Management Area and Ecological Preserve, South Carolina Department of Health and Environmental Control and the Environmental Protection Agency oversight and implementation of the Federal Facility Agreement, and South Carolina Department of Health and

Environmental Control for implementation of the DOE and South Carolina Department of Health and Environmental Control Agreement in Principle for the Environmental Surveillance and Oversight Program for independent and periodic monitoring performed by South Carolina Department of Health and Environmental Control of discharges, emissions or biological parameters as necessary and required to verify the effectiveness of the DOE programs.

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. This request includes EM's share of cyber security scope to protect government information and technology systems in support of the missions executed at the Site within the existing Safeguards and Security PBS SR-0020 structure.

The Savannah River National Laboratory will continue to support EM environmental cleanup efforts at Savannah River, Headquarters and across the EM complex. The Lab provides essential, enduring and increasing surveillance, operational and production technology development and research & development services to the NNSA Defense Programs. The Lab also manages the Mobile Plutonium Facility and conducts significant nonproliferation R&D for NNSA and other national security missions.

Continue stakeholder outreach on the Justice40 Initiative.

Infrastructure

EM manages a portfolio of facilities and infrastructure needed for its mission, some of which are degraded to a level that puts them at risk for supporting missions. Although many of EM's facilities and infrastructure are intended to be shut down and demolished at some point in the future, EM has been participating in Department-wide efforts to assess its infrastructure and identify investments. 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 Mission completion.

Also included are line-item construction projects: 18-D-402 the Emergency Operations Center Replacement Project (\$25,568,000 for construction contract award and start); and, 19-D-701, the Savannah River Site Security Replacement Project (\$5,000,000 for K Area Argus construction start). The Emergency Operations Center Replacement project is being designed to replace existing emergency operations facilities that are in poor condition and past their design life. The Savannah River Site Security System Replacement Project is replacing the existing aging and at risk E3S security system with the DOE standard Argus System.

FY 2022 and 2023 Key Milestones/Outlook

- (October 2021) Submit ECODS N-1, 631-2G and 690-N RFI/RI with BRA and CMS/FS
- (November 2021) Submit Appendix E for Fiscal Year 2022
- (November 2021) FFC Act Site Treatment Plan Annual Update
- (November 2021) Issue ROD for Stormwater Outfall A-013 Operable Unit
- (January 2022) Issue Lower Three Runs Integrator Operable Unit Rev. 0 ROD Remedial Alternative Selection
- (February 2022) Issue Sixth Five-Year Remedy Review Report for SRS OUs with Engineered Cover Systems
- (February 2022) Submit ECODS L-3, L-Area Rubble Pits RFI/RI Work Plan
- (April 2022) Submit Lower Three Runs IOU Remedial Action Implementation Plan
- (April 2022) Submit Lower Three Runs IOU Land Use Controls Implementation Plan (LUCIP)
- (August 2022) Submit ECODS N-1, 631-2G and 690-N Statement of Basis/Proposed Plan

- (September 2022) Initiate Field Start of ECODS L-3 and L-Area Rubble Pits (131-1L & 131-4L) OU Investigation
- (November 2022) Submit Appendix E for Fiscal Year 2023
- (November 2022) FFC Act Site Treatment Plan Annual Update
- (December 2022) Operationally close F-Area Diversion Boxes 5 and 6 (FFA Suspension Agreement)
- (December 2022) Submit Sixth Five Remedy Review Report for SRS OUs with Operating Equipment
- (January 2023) Issue Sixth Five-Year Remedy Review Report for SRS OUs with Geosynthetic and/or Stabilization systems
- (January 2023) Submit Remedial Investigation Work Plan for the F-Area Operable Unit (14 sub-units and 14 associated milestones)
- (April 2023) Start Remedial Action for Lower Three Runs IOU
- (September 2023) 2023 RCRA Permit Renewal Application for General Information (Volume I, Revision 0)
- (September 2023) 2023 RCRA Permit Renewal Application for the MWMF (Volume XXIII, Rev.0)
- (September 2023) 2023 RCRA Permit Renewal Application for the Sanitary Landfill

Regulatory Framework

The DOE-Savannah River Operations Office and its contractors will continue to work proactively with the South Carolina Department of Health and Environmental Control, the Environmental Protection Agency-Region 4, the Nuclear Regulatory Commission, the Defense Nuclear Facilities Safety Board, 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:

- The Federal Facility Agreement for the Savannah River Site.
- Comprehensive Environmental Response, Compensation, and Liability Act.
- Resource Conservation and Recovery Act Permits.
- South Carolina Industrial Wastewater Permits.
- Public Law 107-107, National Defense Authorization Act for Fiscal Year 2002, 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). (50 U.S. Code § 2633 continuation of processing treatment and disposal of legacy nuclear materials.)
- 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.
- Section 3116 of the Ronald W. Reagan National Defense Authorization Act for Fiscal Year 2005.

Contractual Framework

Current contracts at the Savannah River Site include:

- Savannah River Nuclear Solutions LLC: Contract is a Management and Operations contract for management and operation of the infrastructure, nuclear materials facilities, the Savannah River National Laboratory, soil and water remediation, solid waste, and deactivation and decommissioning work at the Savannah River Site. Savannah River Nuclear Solutions also manages and operates National Nuclear Security Administration activities. This contract is a cost-plus-award-fee contract. The contract covers the period August 1, 2008 - July 31, 2013, with options through July 31, 2018. DOE-Savannah River has exercised all options through July 31, 2018. Since a new contract had not been awarded prior to the end date of the period of performance, DOE extended the contract for a 14-month

period with two subsequent 1-year options. The follow-on acquisition for these services is currently in the acquisition-planning phase.

- 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. While the Savannah River Site Integrated Mission Completion Contract acquisition process was still in progress, DOE extended the Savannah River Remediation contract from October 1, 2020, to September 30, 2021, followed by three 4-month options to extend through September 30, 2022. The first option to extend the contract was exercised extending the Savannah River Remediation contract from October 1, 2021 to January 31, 2022, while awaiting award of the Integrated Mission Completion Contract. The Integrated Mission Completion Contract was finally awarded with Notice to Proceed on November 29, 2021 to Savannah River Mission Completion LLC. The contract transition period ended February 26, 2022 making the start of the contract with Savannah River Mission Completion LLC effective on February 27, 2022. This is an Indefinite-Delivery/Indefinite-Quantity (IDIQ) Contract with an ordering period of up to 10 years from the effective date of Contract.
- Centerra Group, LLC: Contract covers the protective services at the Savannah River Site for a period of performance through June 7, 2021, with an option from June 8, 2021 through February 2022. It is a cost-plus-award-fee contract. The follow-on is an ongoing procurement acquisition for these services is currently in the acquisition-planning phase.
- Parsons Government Services, Inc.: Contract covers design, construction, commissioning, and the first year of operations of the Salt Waste Processing Facility. This contract is a cost-plus-incentive-fee contract. This contract expired March 27, 2022 and contract transition to Savannah River Mission Completion is in progress.
- 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 and electricity in support of site missions.
- Battelle Savannah River Alliance: Contract is a Management and Operation contract for the management and operation of the Savannah River National Laboratory. It is a Cost-Plus-Award-Fee contract. It was awarded in December 2020, and contract transition was completed in June 2021. The contract base term is 5 years with 5 one-year award term periods.

Strategic Management

The Savannah River Site cleanup strategy is to eliminate or minimize nuclear materials, spent nuclear fuel, plutonium, and waste through safe stabilization, treatment, and/or disposition. The goal is also to reduce costs of continuing operations, surveillance and maintenance, decommissioning facilities, and remediating groundwater and contaminated soils consistent with regulatory agreements. DOE's 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 nuclear fuel, and decommissioning of all facilities not identified for continuing missions.

The Site's 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 the Savannah River Site.

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

- Ramp-up of operations in the Salt Waste Processing Facility.
- Maintaining and operating deteriorating facilities.

Savannah River

Funding (\$K)

FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted	FY 2023 Request vs FY 2021 Enacted (%)
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Defense Environmental Cleanup

Savannah River Site

Radioactive Liquid Tank Waste Stabilization and Disposition

SR-0014C / Radioactive Liquid Tank Waste Stabilization and Disposition-2035

Operating	910,832	910,832	851,660	-59,172	-7%
Construction					
17-D-402: Saltstone Disposal Unit #7, SR (SR-0014C)	10,716	10,716	0	-10,716	-100%
18-D-402: Saltstone Disposal Unit #8/9, SR (SR-0014C)	65,500	65,500	49,832	-15,668	-24%
20-D-401: Saltstone Disposal Unit 10 11 12	562	562	37,668	+37,106	+6602%
	987,610	987,610	939,160	-48,450	-5%

Savannah River Legacy Pensions

SR-0101 / Savannah River Legacy Pensions	0	0	132,294	+132,294	+100%
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Savannah River National Laboratory

SR-SRNL-0100 / SRNL Infrastructure and Support	0	0	41,000	+41,000	+100%
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Savannah River Risk Management Operations

SR-0011C / NM Stabilization and Disposition	349,724	349,724	270,461	-79,263	-23%
SR-0013 / Solid Waste Stabilization and Disposition	50,071	50,071	45,509	-4,562	-9%
SR-0030 / Soil and Water Remediation & Facility Deactivation and Decommissioning	56,412	56,412	60,455	+4,043	+7%
SR-0041 / Surveillance, Maintenance, and Deactivation	27,264	27,264	21,463	-5,801	-21%
SR-0042 / Infrastructure and Land Management					
Operating	16,529	16,529	18,429	+1,900	+11%
Construction					
18-D-402: Emergency Operations Center	6,500	6,500	25,568	+19,068	+293%
19-D-701: SR Security System Replacement	1,000	1,000	5,000	+4,000	+400%

Environmental Management/
Savannah River

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted	FY 2023 Request vs FY 2021 Enacted (%)
20-D-402: Advanced Manufacturing Collaborative Facility (AMC)	25,000	25,000	0	-25,000	-100%
	49,029	49,029	48,997	-32	+0%
Subtotal, Savannah River Risk Management Operations	532,500	532,500	446,885	-85,615	-16%
SR Community and Regulatory Support					
SR-0100 / Savannah River Community and Regulatory Support	11,549	11,549	12,137	+588	+5%
Total, Savannah River Site	1,531,659	1,531,659	1,571,476	+39,817	+3%
Safeguards and Security					
SR-0020 / Safeguards and Security	171,211	171,211	152,194	-19,017	-11%
Total, Defense Environmental Cleanup	1,702,870	1,702,870	1,723,670	+20,800	+1%

The FY 2023 budget request supports the establishment of a new Congressional control point within the Savannah River site to support the direct funding of Savannah River Legacy Pensions as well as the direct funding for the Savannah River National Laboratory Operation and Maintenance 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 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted	FY 2023 Requested vs FY 2021 Enacted (%)
Defense Environmental Cleanup					
Savannah River Site					
Radioactive Liquid Tank Waste Stabilization and Disposition					
SR-0014C / Radioactive Liquid Tank Waste Stabilization and Disposition-2035					
Operating	828,148	828,148	851,660	+23,512	+3%
Construction					
17-D-402: Saltstone Disposal Unit #7, SR (SR-0014C)	10,716	10,716	0	-10,716	-100%
18-D-402: Saltstone Disposal Unit #8/9, SR (SR-0014C)	65,500	65,500	49,832	-15,668	-24%
20-D-401: Saltstone Disposal Unit 10 11 12	562	562	37,668	+37,106	+6602%
	<u>904,926</u>	<u>904,926</u>	<u>939,160</u>	<u>+34,234</u>	<u>+4%</u>

Savannah River Legacy Pensions

SR-0101 / Savannah River Legacy Pensions	127,465	127,465	132,294	+4,829	+4%
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Savannah River National Laboratory

SR-SRNL-0100 / SRNL Infrastructure and Support	32,726	32,726	41,000	+8,274	+25%
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Savannah River Risk Management Operations

SR-0011C / NM Stabilization and Disposition	300,461	300,461	270,461	-30,000	-10%
SR-0013 / Solid Waste Stabilization and Disposition	43,401	43,401	45,509	+2,108	+5%
SR-0030 / Soil and Water Remediation & Facility Deactivation and Decommissioning	47,963	47,963	60,455	+12,492	+26%

**Environmental Management/
Savannah River**

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted	FY 2023 Requested vs FY 2021 Enacted (%)
SR-0041 / Surveillance, Maintenance, and Deactivation	23,486	23,486	21,463	-2,023	-9%
SR-0042 / Infrastructure and Land Management					
Operating	16,504	16,504	18,429	+1,925	+12%
Construction					
18-D-402: Emergency Operations Center	5,506	5,506	25,568	+20,062	+364%
19-D-701: SR Security System Replacement	847	847	5,000	+4,153	+490%
20-D-402: Advanced Manufacturing Collaborative Facility (AMC)	23,785	23,785	0	-23,785	-100%
	46,642	46,642	48,997	+2,355	+5%
Subtotal, Savannah River Risk Management Operations	461,953	461,953	446,885	-15,068	-3%
SR Community and Regulatory Support					
SR-0100 / Savannah River Community and Regulatory Support	11,549	11,549	12,137	+588	+5%
Total, Savannah River Site	1,538,619	1,538,619	1,571,476	+32,857	+2%
Safeguards and Security					
SR-0020 / Safeguards and Security	164,251	164,251	152,194	-12,057	-7%
Total, Defense Environmental Cleanup	1,702,870	1,702,870	1,723,670	+20,800	+1%

Savannah River
Explanation of Major Changes (\$K)

FY 2021 Enacted	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted
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Defense Environmental Cleanup

Savannah River Site

Radioactive Liquid Tank Waste Stabilization and Disposition

SR-0014C / Radioactive Liquid Tank Waste Stabilization and Disposition-2035

- Increase in Liquid Waste Operations due to increase in Defense Waste Processing Facility and Saltstone critical labor to support ramp up in operations.
- Salt Waste Processing Operations increased by \$9,634,000 due to the significant increase in the number of tanks being prepared for waste removal to support feed preparation for the Salt Waste Processing Facility.
- Saltstone Disposal increased by \$10,722,000 due to an increase in construction activities associated with five Saltstone Disposal Units.
- Regulatory Commitments increased by \$4,499,000 due to increase in work preparing old style tanks 1,2, and 14 for waste removal and Tank 9 (Tank Closure Cesium Removal feed tank) to support increased processing rate in Tank Closure Cesium Removal and increased operations in Tank Closure Cesium Removal.

904,926 939,160 +34,234

Savannah River Legacy Pensions

SR-0101 / Savannah River Legacy Pensions

- Expected legacy pension obligation has increased.

127,465 132,294 +4,829

Savannah River National Laboratory

SR-SRNL-0100 / SRNL Infrastructure and Support

- Increase due to maintenance cost to ensure reliability of equipment.

32,726 41,000 +8,274

Savannah River Risk Management Operations

SR-0011C / NM Stabilization and Disposition

- The decrease is due to reduced number of planned dissolutions in H-Canyon.

300,461 270,461 -30,000

SR-0013 / Solid Waste Stabilization and Disposition

- Increase is due to the disposition of legacy mixed waste and the dismantlement of excess temporary waste processing structures.

43,401 45,509 +2,108

**Environmental Management/
Savannah River**

FY 2023 Congressional Budget Justification

FY 2021 Enacted	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted
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SR-0030 / Soil and Water Remediation & Facility Deactivation and Decommissioning

- Increase is mainly attributed to the initiation of the preliminary 235-F decommissioning scope of work.

47,963 60,455 +12,492

SR-0041 / Surveillance, Maintenance, and Deactivation

- Decrease is due to the completion of 235-F facility deactivation in FY 2022.

23,486 21,463 -2,023

SR-0042 / Infrastructure and Land Management

- The increase is due to an Increase in the direct funded scope in Land Management (+\$1,925,000).
- Emergency Operations Center project (+20,062,000) –Increase is intended to provide initial funding for the fixed-price construction contract award and start of construction.
- Security System Replacement Project (+4,153,000) –Increase is intended to provide funding for construction start of K Area Argus.
- Advanced Manufacturing Collaborative Project (-\$23,785,000) –Decrease reflects completed funding of total project cost.

46,642 48,997 +2,355

SR Community and Regulatory Support

SR-0100 / Savannah River Community and Regulatory Support

- No significant change.

11,549 12,137 +588

Safeguards and Security

SR-0020 / Safeguards and Security

- Decrease is due to the National Nuclear Security Administration contribution for cyber security offsetting EM funding requirements.

164,251 152,194 -12,057

Total, Savannah River	1,702,870	1,723,670	+20,800
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Solid Waste Stabilization and Disposition (PBS: SR-0013)

Overview

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

The scope of this PBS supports storage, treatment and disposal functions for transuranic, low-level radioactive waste, mixed low-level radioactive waste, hazardous, and sanitary waste, as well as pollution prevention, waste minimization, waste certification, and other waste management support functions including updating the five (5) waste tracking and reporting databases into one more robust and reliable web-based system.

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

The Solid Waste Management program is responsible for the disposition of the Savannah River Sites' solid wastes, which include sanitary, construction and demolition, hazardous, low-level radioactive waste and mixed low-level radioactive waste and transuranic wastes. Sanitary waste is household-like waste that is recycled or disposed at the Three Rivers Landfill. Construction and demolition wastes are generated by construction activities onsite and are disposed in a South Carolina Department of Health and Environmental Control-permitted landfill located onsite. Examples include slightly contaminated soil, deactivation and decommissioning debris, protective clothing, job-control waste, equipment, tools, filters, rags and papers. This type of radioactive waste is disposed onsite in engineered facilities. This type of waste is subject to regulations governing both waste types. Mixed low-level radioactive waste requires treating prior to disposal at a commercial disposal facility or a federal disposal facility at the Nevada National Security Site. Transuranic waste can include equipment, protective clothing and tools used in the production and management of these radionuclides. The inventory of transuranic waste is packaged, characterized/certified and shipped to the Waste Isolation Pilot Plant for disposal.

The Solid Waste Management program is responsible for the disposal of the legacy waste as well as the newly generated waste. The Site generates approximately 5,000 cubic meters of low-level waste annually. As of April 2022, no legacy low-level waste was in storage. The Site generates approximately 30 cubic meters of hazardous and mixed low-level waste annually. As of April 2022, no legacy hazardous or mixed low-level radioactive waste is in storage. For transuranic waste, the Site generates approximately 30 cubic meters per year. Savannah River Site has, as of April 2022, 560 cubic meters of transuranic waste (legacy and newly generated) in storage. Over 100 shipments to the Waste Isolation Pilot Plant will be required to dispose of the transuranic waste in storage.

DOE waste generator sites fund their respective site transuranic waste characterization activities such as visual examination, real time radiography, nondestructive assay, dose-to-curie conversion, and flammable gas analysis. PBS Central Characterization Project (CB-0081) funds certification of waste characterization activities of legacy and newly generated transuranic waste at Savannah River Site, Oak Ridge National Laboratory, Lawrence Livermore National Laboratory, and Los Alamos National Laboratory, whereas the Idaho National Laboratory funds its waste characterization certification. Transportation certification is funded by PBS Central Characterization Project (CB-0081).

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

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
\$43,401,000	\$45,509,000	+\$2,108,000
<p><u>Solid Waste Management Program (\$43,401,000)</u></p> <ul style="list-style-type: none"> Maintained Solid Waste management facilities to support site operation, including the construction debris landfill. In addition, the support of Waste Acceptance assessment needed to enable shipment to Waste Isolation Pilot Plant. Shipped 60 m³ contact-handled transuranic waste to the Waste Isolation Pilot Plant. Increased number of contact-handled transuranic waste shipments to the Waste Isolation Pilot Plant. Supported treatment/storage/disposal of up to 6,068 m³ of newly generated low-level radioactive waste. Supported treatment/storage/disposal of up to 390 m³ of mixed low-level radioactive waste. Supported treatment/storage/disposal of up to 63 m³ of hazardous waste. Supported treatment/storage/disposal of sanitary waste and upgrade of waste tracking reporting database. Updated the Performance Assessment of E Area to demonstrate appropriate long-term protection of the public and environment following closure of the facilities. 	<p><u>Solid Waste Management Program (\$45,509,000)</u></p> <ul style="list-style-type: none"> Maintain Solid Waste management facilities to support site operation, including the construction debris landfill. In addition, the support of Waste Acceptance assessment needed to enable shipment to Waste Isolation Pilot Plant. Ship 40 m³ contact-handled transuranic waste to the Waste Isolation Pilot Plant, dependent on availability to accept by the Waste Isolation Pilot Plant. Increase number of contact-handled transuranic waste shipments to the Waste Isolation Pilot Plant. Support treatment/storage/disposal of up to 7,103 m³ of newly generated low-level radioactive waste. Support treatment/storage/disposal of up to 57 m³ of mixed low-level radioactive waste. Support treatment/storage/disposal of up to 52 m³ of hazardous waste. Support treatment/storage/disposal of sanitary waste and upgrade of waste tracking reporting database. 	<ul style="list-style-type: none"> Increase is due to the disposition of legacy mixed waste and the dismantlement of excess temporary waste processing structures.

Soil and Water Remediation & Facility Deactivation and Decommissioning (PBS: SR-0030)

Overview

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

The scope of this PBS 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.

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

Soil and Water Remediation

The Soil and Water Remediation program includes the operation and maintenance of three (3) active soil and groundwater remedial systems, and the monitoring of 37 passive (natural attenuation) regulatory required soil and groundwater remedial systems to contain contaminant plumes within the Savannah River 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 75 closed waste sites (approximately 1,000 acres) and at 27 surplus facilities to prevent deterioration, environmental releases, or structural failure. The program also monitors, performs analysis and reports on over 2,000 groundwater wells (approximately 4,300 sampling activities) and five (5) major streams, the Savannah River Floodplain Swamp and the Savannah River to demonstrate effectiveness of remedial systems. Included is operation and maintenance of the Phytoremediation System operated by the US Forest Service via an interagency agreement and located at the Mixed Waste Management Facility. Provides financial assistance to the City of Savannah, Georgia for monitoring of tritium levels in the Savannah River upstream of the city's water intake facility.

Federal Facility Agreement

The FY 2023 Request also supports the next phase of regulatory projects from the rolling three-year commitments in the Federal Facility Agreement that is agreed to by the Department, South Carolina Department of Health and Environmental Control, and the Environmental Protection Agency. Included are activities performed under the financial assistance award issued to the Savannah River Ecology Laboratory for independent studies in support of the integrated operable unit program.

Area Completion

An integral part of the cleanup mission is the decommissioning of facilities constructed in support of nuclear materials production. This work was initially performed 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.

Cleanup and decommissioning will continue until all areas at the Savannah River Site are completed. Units at which waste is left are placed under post-closure care with institutional controls including access and land use restrictions, inspections, maintenance, long-term monitoring, and reporting. Groundwater corrective actions and effectiveness monitoring are performed as appropriate.

Building 235-F

Building 235-F at the Savannah River Site was part of the original construction in the early 1950s. The facility is a blast resistant, windowless, two-story, reinforced concrete structure about 222 feet long, 109 feet wide, and 28 feet high located in F-Area near the F Canyon.

Environmental Management/ Savannah River

Building 235-F houses several partially deactivated processing lines including the Plutonium Fuel Form facility, Actinide Billet Line, Plutonium Experimental Facility, and the old metallography lab glovebox.

A project to deactivate the 235-F facility was started in FY 2020 with plans to complete deactivation in FY 2022. The deactivation project involves the shutdown of all active structures, systems and components in Building 235-F along with electrical/mechanical isolation of the building. Once facility deactivation is completed, the 235-F decommissioning project would be initiated in PBS SR-0030.

An evaluation of potential closure alternatives identified permanent in situ decommissioning (ISD) as having the best balance of trade-offs when compared to the complete demolition and removal (D&R) of Building 235-F. ISD will be far less hazardous to the decommissioning workers than D&R, and protective of human health and the environment in the long term by encapsulating plutonium-238 contamination within the robust, grouted process areas of the facility. ISD is also estimated to cost over \$100 million less than D&R. The permanent decommissioning of Building 235-F will be a major step toward risk reduction and final closure of the nuclear F Area of SRS

Soil and Water Remediation & Facility Deactivation and Decommissioning (PBS: SR-0030)

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
\$47,963,000	\$60,455,000	+\$12,492,000
<u>Soil and Water Remediation (\$46,262,000)</u> <ul style="list-style-type: none"> Achieved compliance with over 71 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. Operated and maintained 41 regulatory-required soil and groundwater remedial systems (3 active & 37 passive and 1 suspended) to protect groundwater aquifers, site streams, and the Savannah River. 	<u>Soil and Water Remediation (\$48,455,000)</u> <ul style="list-style-type: none"> Achieve compliance with 78 agreed upon 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 40 regulatory-required soil and groundwater remedial systems (3 active & 37 passive) to protect human health, groundwater aquifers, site streams, and the Savannah River. 	<ul style="list-style-type: none"> Increase is mainly attributed to the initiation of the preliminary 235-F decommissioning scope of work.

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- Conducted post-closure and post-Record of Decision care, surveillance, and maintenance at 75 closed waste sites (approximately 1,000 acres) to prevent deterioration, and environmental releases.
 - Monitored, analyzed, and reported 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.
 - Performed surveillance and maintenance of Area Completion Projects' inactive facilities to maintain safe and stable facility conditions.
 - Continued oversight of activities performed under financial assistance awards with City of Savannah and Savannah River Ecology Laboratory, and the interagency agreement with US Forrest Service.
 - Issued Record of Decision for A-013 Outfall Operable Unit.
 - Prepared to implement activities defined in the Lower Three Runs Record of Decision.
 - Submitted Decommissioning Project Final Report for 690-N (Process Heat Exchanger Repair Facility)
 - Completed Removal Action (Neutralization) at D-Area Coal Storage Area 484-17D
- D Area Operable Unit (\$1,701,000)
- Continued Deactivation and Decommissioning activities of inactive facilities.
- Conduct post-closure and post-Record of Decision care, surveillance, and maintenance at 75 closed waste sites (approximately 1,000 acres) to prevent deterioration, and environmental releases.
 - Monitor, analyze, 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.
 - Conduct oversight of activities performed under financial assistance awards with City of Savannah and Savannah River Ecology Laboratory, and the interagency agreement with US Forest Service.
 - Initiation of Field Start for the Early Constructions and Operational Disposal Site L-3 and L-Area Rubble Pits (131-1L & 131-4L) Operable Unit.
 - Initiate the Remedial Action Start for the Lower Three Runs Integrator Operable Unit.
- 235-F Deactivation and Decommissioning (\$12,000,000)
- Supports preliminary cost estimate for 235-F decommissioning. Work on the decommissioning plan with design, regulatory and nuclear safety scope following afterwards.

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

Overview

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

This PBS covers scope for the surveillance and maintenance of non-operating nuclear facilities (currently consisting of F-Area Complex Facilities, as well as the Receiving Basin for Off-Site Fuels Facility in H-Area), deactivation of the F-Area Materials Storage Facility (235-F), and future deactivation of nuclear facilities currently operating at the Savannah River Site. The surveillance and maintenance end-state will be accomplished when the capabilities of the facilities are no longer needed (all remaining materials have been dispositioned), and deactivation has been completed and are ready to be turned over for decommissioning.

F-Area Complex

The F-Area Complex is comprised of the deactivated F Canyon building including the FB-Line, Building 235-F, large storage tanks used to hold various chemical solutions, industrial support facilities, administrative buildings, sand filter facilities, and supporting utilities including water, steam, electricity, industrial air, conditioned air, underground transfer piping, and sanitary waste. Like the H Canyon, the F Canyon was also built in the 1950s and is approximately the same size as H Canyon (1,028 feet long, 122 feet wide and 71 feet tall) with FB-Line located on top of the F Canyon. Although similar in size and capabilities to H Canyon, the missions for these two facilities were different with F Canyon focused on plutonium production and H Canyon focused on uranium recovery.

This PBS supports all general area maintenance, as well as emergency preparedness, firewater, utilities, lighting, building and grounds maintenance.

Receiving Basin for Offsite Fuels Facility

A project was initiated in 1997 to de-inventory the Receiving Basin for Off-Site Fuels Facility due to size limitations that would not support increased off-site receipts and transfer the spent nuclear fuel to L-Basin. This effort was completed in 2006 with the complete de-inventory and shutdown of the Receiving Basin for Off-Site Fuels Facility.

The Receiving Basin for Offsite Fuels surveillance and maintenance activities include 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.

Building 235-F

Building 235-F at the Savannah River Site was part of the original construction in the early 1950s. The facility is a blast resistant, windowless, two-story, reinforced concrete structure about 222 feet long, 109 feet wide, and 28 feet high located in F-Area near the F Canyon.

Building 235-F houses several partially deactivated processing lines including the Plutonium Fuel Form facility, Actinide Billet Line, Plutonium Experimental Facility, and the old metallography lab glovebox.

**Environmental Management/
Savannah River**

A project to deactivate the 235-F facility was started in FY 2020 with plans to complete deactivation in FY 2022. The deactivation project involves the shutdown of all active structures, systems and components in Building 235-F along with electrical/mechanical isolation of the building. As currently scoped, the deactivation project would not include large-scale dismantlement and removal of equipment or demolition of structures. Once facility deactivation is completed, the 235-F decommissioning project would be initiated in PBS SR-0030.

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

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
\$23,486,000	\$21,463,000	-\$2,023,000
<u>Facility Surveillance and Maintenance (\$17,764,000)</u> <ul style="list-style-type: none"> Continued surveillance and maintenance of the F-Area Complex Facilities including F-Canyon, FB Line, and 235-F, as well as the Receiving Basin for Off-Site Fuels Facility. 	<u>Facility Surveillance and Maintenance (\$13,392,561)</u> <ul style="list-style-type: none"> Continue surveillance and maintenance of the F-Area Complex Facilities including F-Canyon, FB Line, and 235-F, as well as the Receiving Basin for Off-Site Fuels Facility. 	<ul style="list-style-type: none"> Decrease is due to the completion of 235-F facility deactivation in FY 2022.
<u>235-F Deactivation (\$5,722,000)</u> <ul style="list-style-type: none"> Completed 235-F facility ventilation modifications. 	<u>F/H Laboratory Surveillance and Maintenance (\$8,070,439)</u> <ul style="list-style-type: none"> Supports utility costs for electricity, fire water, steam and sanitary waste for F/H Analytical Laboratory. 	

Infrastructure and Land Management (PBS: SR-0042)

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

The scope of this PBS supports general Site functions including land management activities to sustain natural resources and maintenance of Site's roads, bridges, and dams and supports the Savannah River Site forest management program to maintain and sustain a healthy forest that produces a marketable timber crop for harvesting and sales. Also covered in the scope of this PBS are general site infrastructure projects. 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.

General Site Infrastructure

This PBS supports the capital investment in the general site infrastructure which is defined as infrastructure that is non-program specific. The type of infrastructure includes utilities that connect to the various areas onsite; transportation systems between the various areas; communications systems connecting the various areas; health, safety, and environmental systems that serve the entire site, and emergency operations services.

The deteriorating infrastructure has increasingly resulted in reduced operational capability and higher repair or replacement costs. As a result, cannibalization of parts, costly piecemeal maintenance, temporary modifications, and in some cases, work-arounds have been performed in order to sustain functional performance of many facilities, equipment and systems. These practices have resulted in an excessive, expensive, and inefficient utilization of resources and increased the cost of future capital infrastructure investment.

The Emergency Operations Center Replacement Line-Item Project (18-D-402) relocates the primary and alternate Savannah River Site Operations Center (site 911 and communications center), and the Emergency Operations Center (Emergency Operations Center command and support center), from their current locations, and establishes newly constructed, state-of-the-art facilities. The primary Savannah River Site Operations Center and Emergency Operations Center are located in the basement of an abandoned, 70-year-old, 150,000 square feet administrative building, which is past its design life. The facility is on the Savannah River Site Decommissioning and Demolition list and will be turned over for closure once the emergency operations functions are relocated. The facility has a history of mold and mildew issues, water intrusion, sewer, and asbestos hazards. These hazards have already caused 90% of the facility to be condemned and continue to affect the health and wellbeing of the current occupants.

The Savannah River Security System Replacement Line-Item Project (19-D-701) replaces the Electronic Safeguards & Security System, which has exceeded its useful life, with the DOE standard Argus system. Components of the existing system are no longer commercially available, impacting system reliability and increasing security costs and risks.

The Advanced Manufacturing Collaborative Line-Item Project, proposed in FY 2020, is to support design and construction of a modern research and development facility accessible by commercial industry and academia. It will focus on developing safer, faster, and more cost effective nuclear chemical manufacturing and cleanup technologies and expertise to tackle the remaining challenges in the cleanup of radioactive and chemical waste from Cold War activities, nuclear research, and non-proliferation missions.

Land Management

Through an Interagency Agreement with the Savannah River Site Operations Office, the United States Forest Service, Savannah River manages approximately 170,000 acres of onsite natural resources and forest.

**Environmental Management/
Savannah River**

Through a Cooperative Agreement with the Savannah River Site, the Savannah River Ecology Laboratory operated by the University of Georgia conducts an interdisciplinary program of field and laboratory research onsite to enhance the understanding of the environment by acquiring and communicating knowledge that contributes to sound environmental stewardship, and to provide the public with an independent evaluation of the ecological effects of Savannah River Site operations on the environment. The Savannah River Ecology Laboratory was established in 1951 by the Atomic Energy Commission, which had concerns about the environmental impacts resulting from construction of the Savannah River Site and its operations. This Laboratory also continues to manage the Savannah River Site National Environmental Research Park which was established in 1972.

The scope of this PBS also supports other governmental organizations that supply cultural and natural resource management services to the Savannah River Site. The relationship of the following governmental organizations to the Site is through DOE awarded financial assistance (i.e., grants and cooperative agreements). The Federal Energy Regulatory Commission inspects the onsite earthen dams. The South Carolina Institute of Archaeology and Anthropology performs archaeology resource management and curation of archaeological artifacts for the Savannah River Site. The contractor provides cultural resource management and preservation from the period of the Cold War to present day.

Infrastructure and Land Management (PBS: SR-0042)

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
\$46,642,000	\$48,997,000	+\$2,355,000
<u>Land Management (\$16,504,000)</u> <ul style="list-style-type: none"> • Implemented site Natural Resource Management Plan and comply with applicable regulations. • Managed 65,000 acres for red-cockaded woodpecker habitat. The Forest Service aided in the growth of the endangered red-cockaded woodpecker population which started with four birds in 1986 and now stands at approximately 330. • Completed over 20,000 acres of prescribed forest fire burns. Prescribed burns help reduce accumulations of forest fuel, improve the 	<u>Land Management (\$18,429,000)</u> <ul style="list-style-type: none"> • Conduct all general area maintenance, as well as emergency preparedness, firewater, utilities, lighting, building and grounds maintenance. • Conduct general Site functions including general site infrastructure projects, land management activities to sustain natural resources and maintenance of Site’s roads, bridges, and dams. • Manage 65,000 acres for red-cockaded woodpecker habitat. The Forest Service aided in the growth of the endangered red-cockaded woodpecker population which started with four 	<ul style="list-style-type: none"> • The increase is due to an Increase in the direct funded scope in Land Management (+\$1,925,000). • Emergency Operations Center project (+20,062,000) –Increase is intended to provide initial funding for the fixed-price construction contract award and start of construction. • Security System Replacement Project (+4,153,000) –Increase is intended to provide funding for construction start of K Area Argus. • Advanced Manufacturing Collaborative Project (-\$23,785,000) –Decrease reflects completed funding of total project cost.

forestland health, manage habitats of threatened and endangered species, and restore native environments for trees such as the longleaf pine.

- Reintroduced native plants to enhance the restoration of the native savanna.
- Controlled non-native invasive plants and animals, such as feral hogs.
- Improved watershed conditions through the restoration of vegetation in old borrow pits and spoil piles, the stabilization of stream channels, and the restoration of Carolina Bays and wetlands in swamp areas on the Savannah River Site.
- Partnered with the Department of Energy, Savannah River Site contractors, and national conservation programs to host the annual Wounded Warrior/Mobility Impaired Ultimate Turkey Hunt and the Wounded Warrior/Mobility Impaired Fishing Challenge.
- Maintained the Savannah River Site's secondary roads, boundary, and wellness trails.
- Managed, maintained, and sustained a healthy forest that produces a marketable timber crop that is harvested and sold. Provide sound environmental stewardship and serve the public through an independent evaluation of the ecological effects of Savannah River Site operations on the environment.
- Continued to manage the SRS National Environmental Research Park.

Advanced Manufacturing Collaborative Project
(\$23,785,000)

- Continued activities required for Critical Decision documentation and construction activities.

birds in 1986 and now stands at approximately 330.

- Complete over 20,000 acres of prescribed forest fire burns. Prescribed burns help reduce accumulations of forest fuel, improve the forestland health, manage habitats of threatened and endangered species, and restore native environments for trees such as the longleaf pine.
- Reintroduce native plants to enhance the restoration of the native savanna.
- Control non-native invasive plants and animals, such as feral hogs.
- Improve watershed conditions through the restoration of vegetation in old borrow pits and spoil piles, the stabilization of stream channels, and the restoration of Carolina Bays and wetlands in swamp areas on the Savannah River Site.
- Partner with the Department of Energy, Savannah River Site contractors, and national conservation programs to host the annual Wounded Warrior/Mobility Impaired Ultimate Turkey Hunt and the Wounded Warrior/Mobility Impaired Fishing Challenge.
- Maintain the Savannah River Site's secondary roads, boundary, and wellness trails.
- Manage the Site timber assets.
- Provide independent evaluation of the ecological effects of Savannah River Site operations on the environment.
- Provide public outreach and education on the environment on the Savannah River Site.
- Oversee stewardship of Savannah River Site Set-Asides, 14,000 acres of ecological reserves.

19-D-701 - Savannah River Site Security System

Replacement Project (\$847,000)

- Started K Area Argus installation and construction.

18-D-402 – Emergency Operations Center

Replacement Project (\$5,506,000)

- Completed Final Design and award construction contract.

Capital Projects (30,568,000)

- Supports construction of K Area Argus.
- Supports construction award and start for the EOC/SRSOC facilities.

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

Overview

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

This PBS includes the management and disposition of nuclear materials and spent nuclear fuel, primarily located in H-, K-, and L- Areas at the Savannah River Site. The H-Area facilities continue to stabilize and disposition legacy EM-owned nuclear materials through the operation of H Canyon with Savannah River National Laboratory providing analytical support. This PBS also includes surveillance and maintenance of HB Line. 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 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-Area

H-Area supports the DOE complex by reducing proliferation risks of nuclear materials in storage throughout the world. H-Area is comprised of the H Canyon building including the HB-Line glovebox facility, large storage tanks containing various chemical solutions, industrial support facilities, administrative buildings, sand filter facility, and supporting utilities including water, steam, electricity, industrial and conditioned air systems, underground transfer piping, and sanitary waste.

H Canyon, constructed in the early 1950s, has been in continuous operation since 1955. It is 1,028 feet long, 122 feet wide and 71 feet tall, with several levels to accommodate the various stages of material stabilization, including control rooms to operate and maintain equipment and processes necessary to maintain the safety envelope, equipment and piping gallery for solution transport, storage, and disposition. Due to high levels of radiation, work in the canyon (including maintenance) is remotely performed by overhead bridge cranes. The HB-Line is located on top of H Canyon and was built in the early 1980s to support the nation's deep space exploration program and to recover legacy materials stored in H Canyon.

H Canyon, the nation's only hardened production scale, chemical separation facility remaining in the United States of America is integral to DOE's efforts to minimize and eliminate nuclear materials through safe dissolution and chemical separation, allowing removal and separation of specific isotopes for reuse if required or proper disposition of the material thereby reducing proliferation risks and long-term costs associated with storage of the materials.

K-Area

K-Area provides for the handling and interim storage of excess plutonium and other special nuclear materials and fulfills the U.S. commitment to international nonproliferation efforts in a safe and environmentally sound manner. The K-Area Material Storage Facility, built in the 1950s, was one of the five production reactors at the Savannah River Site. It was repurposed at the end of the Cold War to be the DOE Complex consolidated storage location for stabilized non-pit plutonium materials, which were declared surplus to the nation's defense needs, pending final 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. It is DOE EM's only Category 1 storage facility designated for interim safe storage of plutonium. It currently has a capacity for approximately 8,500 drums of special nuclear materials. In FY 2016, the capability to down blend, dilute through blending with an inert material, and package plutonium was established. The final disposition path for this material after down blend is the Waste Isolation Pilot Plant in Carlsbad, New Mexico.

The EM operational mission end-state will be accomplished when all remaining Office of Environmental Management owned inventories of special nuclear materials have been down blended and packaged for shipment to the Waste Isolation Pilot Plant. K-Area facilities are being used by the National Nuclear Security Administration

for expedited Pu removal from the State of South Carolina, so all activities are carefully coordinated between EM and National Nuclear Security Administration. Final disposition will be determined by EM and the National Nuclear Security Administration at the completion of the EM operation mission.

L-Area

L-Area provides for the wet storage of spent nuclear fuel. The L Reactor was one of the five production reactors at Savannah River Site. In 1996 the disassembly basin of L Reactor (an underwater storage facility), referred to as L-Basin, was repurposed to safely handle and securely store spent nuclear fuel originating from Atomic Energy Commission and DOE activities, as well as spent nuclear fuel originating from foreign and domestic research reactors pending disposition. These fuel receipts support the United States government's policy on minimizing highly enriched uranium around the world and programmatic missions of the Office of Nuclear Energy, Office of Science, and the National Nuclear Security Administration.

L-Basin has the capacity to receive, bundle, and store Material Test Reactor type fuels (3,650 bundle positions) and High Flux Isotope Reactor fuels (120 full cores) which supports the National Nuclear Security Administration nonproliferation program, Office of Nuclear Energy's domestic research program, along with the Office of Science's research programs and also the Department of Commerce (National Institute of Standards and Technology reactor). As of March 2022, L-Basin is approximately 80 percent full for Material Test Reactor type fuel storage, and 85 percent full for High Flux Isotope Reactor fuels.

The end-state will be accomplished when all remaining Savannah River Site inventories of spent nuclear fuel have been disposed and operating nuclear facilities have been turned over to PBS SR-0041 for final disposition.

Heavy Water

This PBS also includes the safe storage and eventual disposition of over 500,000 gallons of legacy heavy water remaining from production activities. The heavy water is currently stored in L-, K-, and C- Areas currently stored in both drums and tanks.

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

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
\$300,461,000	\$270,461,000	-\$30,000,000
<p><u>Surveillance and Maintenance– H-Area (\$183,862,000)</u></p> <ul style="list-style-type: none"> Operated and maintained a high state of readiness at the H Canyon facility required by 50 United States Code § 2633. Maintained HB Line in reversible lay-up condition. Provided portion of deactivation costs for F&H Analytical Laboratories based on historical usage by H-Canyon and HB Line. These analytical services are being consolidated from 772-F to Savannah River National Laboratory. 	<p><u>Surveillance and Maintenance– H-Area (\$155,725,000)</u></p> <ul style="list-style-type: none"> Operate and maintain a high state of readiness of the H Canyon facility required by 50 United States Code § 2633. Maintains HB Line in reversible lay-up condition. <p><u>Surveillance and Maintenance – K-Area (\$71,751,000)</u></p> <ul style="list-style-type: none"> Maintain K-Area to safely and securely Store special nuclear material. Perform critical maintenance on facility perimeter intrusion system. Continue to receive Gap plutonium from foreign countries in support of the National Nuclear Security Administration’s nonproliferation program. Support DOE’s commitment regarding expedited removal of plutonium from the State of South Carolina. 	<ul style="list-style-type: none"> The decrease is due to reduced number of planned dissolutions in H-Canyon.
<p><u>Surveillance and Maintenance – K-Area (\$73,614,000)</u></p> <ul style="list-style-type: none"> Maintained K-Area to store safely and securely special nuclear material. Performed critical maintenance on facility perimeter intrusion system. Continued to receive Gap plutonium from foreign countries in support of the National Nuclear Security Administration’s nonproliferation program. Supported DOE’s commitment regarding expedited removal of Pu from the State of South Carolina. 	<p><u>Surveillance and Maintenance – L-Area (\$42,985,000)</u></p>	

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- Characterized and stored material for Waste Isolation Pilot Plant disposal.

Surveillance and Maintenance – L-Area
(\$42,985,000)

- Provided safe storage for EM-owned spent nuclear fuel in L-Area Basin.
- Performed surveillance and maintenance of legacy heavy water to ensure safe storage.
- Supported receipts of research reactor spent nuclear fuel.

- Provide safe and secure storage for EM-owned spent nuclear fuel in L-Area Basin.
- Perform surveillance and maintenance of legacy heavy water to ensure safe storage.
- Support receipts of research reactor spent nuclear fuel.

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 34,300,000 gallons of legacy liquid radioactive waste containing approximately 227,000,000 curies currently stored in 43 underground storage tanks (as of December 2021).

The Liquid Waste Program has reduced risk so far (as of December 2021) by:

- Producing 4,288 canisters with 63,200,000 curies immobilized in glass through the Defense Waste Processing Facility;
- Processing 7,453,836 gallons of salt waste through the Actinide Removal Process and Modular Caustic Side Solvent Extraction Unit;
- Processing 2,385,664 gallons of salt waste (321,345 in Hot Commissioning and 2,064,319 during One Year Operation) through the Salt Waste Processing Facility;
- Processing 299,455 gallons of salt waste through Tank Closure Cesium Removal;
- Disposing over 28,900,000 gallons of low-activity waste in the Saltstone Disposal Units; and
- Emptying, cleaning, grouting, and removing from service 8 non-compliant high-level waste storage tanks, as required by the enforceable commitments in the Federal Facility Agreement.



Liquid Waste Operations

Since the Savannah River Site became operational, the separation of fissionable nuclear material from irradiated targets and fuels in the F and H Canyons resulted in the generation of over 164,039,661 gallons of radioactive waste. As of December 2021, approximately 34,300,000 gallons of radioactive waste are currently stored onsite in large underground waste storage tanks at the Savannah River Site. Most of the tank waste inventory is a complex mixture of chemical and radioactive waste generated during the acid-side separation of special nuclear materials and enriched uranium from irradiated targets and spent (used) fuel. Eight waste storage tanks have been closed to date. The remaining 43 waste storage tanks located in two separate locations—H-Tank Farm (27 tanks) and F-Tank Farm (16 tanks)—were placed into operation between 1954 and 1986.

The Savannah River Site plans to continue reducing the volume of tank waste using waste processing activities such as preparing tanks for waste removal by installing necessary equipment and infrastructure; removing, pre-treating, and batching remaining radioactive sludge and salt waste; vitrifying sludge and high curie/high actinide radioactive component in the salt waste at the Defense Waste Processing Facility into canisters and then storing the canisters in glass waste storage buildings; treating and disposing of low-level waste (decontaminated salt solution coming from salt waste processing) as saltstone; evaporating liquids to ensure storage tank space is available to receive additional legacy waste from ongoing nuclear material stabilization then treating and discharging evaporator overheads through the

Effluent Treatment Facility; emptying and permanently closing in place, all liquid radioactive waste storage tanks and support systems. These actions ensure risks to the environment and human health and safety from the liquid radioactive waste stored in tanks are eliminated or reduced to acceptable levels.

To make better use of available tank storage capacity, incoming liquid waste is evaporated to reduce its volume. This is important because most of the Savannah River Site new-style waste storage tanks are already near full capacity. Of the five installed evaporators, there are currently two operational evaporators in SRS—2H and 3H Evaporators are found in H-Area and began operations in 1982 and 2000, respectively. The evaporators reduce the volume of the liquid radioactive salt waste such that space within storage tanks is available for continuing liquid waste operations. Space in new style tanks is used for various operations for waste processing and disposal. The evaporators boil the liquid salt waste, reducing the waste volume to about 25-30 percent of the original volume. The water vapor is then sent to the Effluent Treatment Facility treats process wastewater that may be contaminated with small quantities of radionuclides and process chemicals. The wastewater is processed through the treatment plant and pumped to Upper Three Runs Creek for discharge at an NPDES permitted outfall. Tank 50 receives Effluent Treatment Facility residual waste for storage prior to treatment at Saltstone Production Facility and final disposition in Saltstone Disposal Units.

The Department started operating the Defense Waste Processing Facility in March 1996 to vitrify (convert) the high-level radioactive liquid waste into a stable solid glass form suitable for long-term storage and eventual off-site disposal. This reduces the risks associated with the continued storage of liquid waste at the Savannah River Site and prepares the waste for final disposal. As of December 2021, the Defense Waste Processing Facility has produced 4,288 canisters immobilizing 63,200,000 curies in glass. It is projected that the Defense Waste Processing Facility will produce, in total, approximately 8,121 canisters to immobilize more than 99% of all the radionuclides contained in both the salt and the sludge waste store in the radioactive waste storage tanks. The Savannah River Site has the capacity to store safely about 6,864 canisters, which includes double stacking in Glass Waste Storage Building 1. Engineering evaluation to perform canister double stacking in Glass Waste Storage Building 2 has been completed concluding that it is feasible to double stack. In FY 2022, a physical demonstration was successfully performed confirming the viability of double stacking canisters in Glass Waste Storage Building 2. The Department intends to proceed with implementation. The combined total of both facilities with double stacking is 9,204 canisters, eliminating the need for construction of additional storage.

To support higher glass throughput, the Defense Waste Processing Facility melter was retrofitted with four bubbler systems and the melter off-gas system was optimized in September 2010. The second step of Defense Waste Processing Facility production capacity improvement program addresses streamlining the Defense Waste Processing Facility feed preparation system. Several process improvements are under implementation to streamline the Defense Waste Processing Facility feed preparation system which are required to support Salt Waste Processing Facility operations at a feed rate greater than 7.2 Mgal per year

Closure activities for the tanks begin several years before the actual operational closing of the tanks. The bulk of the radioactive waste must be removed for treatment and stabilization using Savannah River Site processing facilities. This process is known as Bulk Waste Removal Efforts. Sludge is removed from the tank and transferred to the feed preparation tank (Tank 51), ensuring sludge waste batches are available for treatment at the Defense Waste Processing Facility without interruption. Following completion of bulk waste removal in a tank, the complex closure activities begin with removal of the remaining heel waste material using either mechanical or chemical cleaning methods to the extent practical, in accordance with requirements and closure plans established with the South Carolina Department of Health and Environmental Control and the Environmental Protection Agency. The final closure activity begins with workers pouring specially formulated grout (a cement-like substance) into the tanks. This special grout stabilizes the tank and is used to impede the leaching and migration of any waste residuals remaining in the tank. Over the course of several weeks, the tanks are filled with grout and tank top penetrations are sealed.

Salt Waste Processing

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, as salt waste constitutes 92% of the 34,300,000 gallons of liquid radioactive waste stored in the tank farms. The waste inventory requires dissolution with water to allow transfer from tanks to processing facilities and to meet processing parameters. It is expected that the salt waste inventory of about

31,700,000 gallons will become at least 99,000,000 gallons of salt solution requiring treatment and processing. In order to relieve tank space shortages and assure vitrification of the high-activity component or radionuclides in the liquid waste to continue uninterrupted, the Actinide Removal Process and Modular Caustic Side Solvent Extraction Unit began operation in April 2008. The Actinide Removal Process and Modular Caustic Side Solvent Extraction Unit facilities provided an interim processing capability to remove and treat salt waste from the tank farms and an effective opportunity to provide lessons learned and proof of technology for the Salt Waste Processing Facility. In preparation for the Salt Waste Processing Facility startup (i.e., processing of radioactive salt solution), the operations in the Actinide Removal Process and Modular Caustic Side Solvent Extraction Unit were suspended in June 2019 as planned. De-inventory and flush of the facilities are complete allowing final tie-ins of the Salt Waste Processing Facility to proceed. Decontamination and decommissioning of the Actinide Removal Process and Modular Caustic Side Solvent Extraction Unit will be performed under PBS-0030.

The Salt Waste Processing Facility Hot Commissioning began in October 2020 Hot Operations commenced on January 18, 2021 and has processed, as of December 31, 2021, a total of 2,385,664 gallons of salt waste (321,345 in Hot Commissioning and 2,064,319 during One Year Operations). The Salt Waste Processing Facility safely separates the waste into two streams – a small amount of high-activity radioactive waste sent to the Defense Waste Processing Facility for vitrification and poured into canisters and a very large amount of low-activity radioactive waste called decontaminated salt solution sent to Saltstone to be grouted and permanently disposed in the Saltstone Disposal Units. Nominal capacity of the Salt Waste Processing Facility will be 6,000,000 to 9,000,000 gallons processing rates per year after implementing the Next Generation Solvent in FY 2023. Processing salt waste through the Salt Waste Processing Facility is needed to disposition the majority of the waste stored in the tank farms (about 99 million gallons after salt dissolution), while maintaining adequate tank space required to optimize Defense Waste Processing Facility operations

In 2021, the Liquid Tank Waste Stabilization and Disposition program fully operated with the start of Salt Waste Processing Facility hot operations. Liquid Waste facilities modifications required to support increase in Salt Waste Processing Facility operating rates after the first year of operations continued in FY 2021. This was required to ensure proper integration to support the Salt Waste Processing Facility increase of salt processing rates after the second year of operations. In 2022, the Salt Was Processing Facility is planned to operate at 6 million gallons per year rate and process 3,000,000 gallons of available feed. In FY 2023, the Salt Waste Processing Facility will implement the change to Next Generation Solvent which will require a one-month outage in the second quarter. This change in solvent will enable Salt Was Processing Facility to increase the processing rate to 9 million gallons per year and process a total volume of 5,950,000 gallons in FY 2023.

Saltstone Disposal

Decontaminated salt solution from salt processing is sent to the Saltstone Production Facility, where it is treated, stabilized and permanently disposed of by mixing the salt solution with cement, fly ash and furnace slag forming a “grout.” The grout is poured into above-ground, cylindrical concrete cells called Saltstone Disposal Units where it solidifies into saltstone, a non-hazardous low-level waste form.

A new design is being utilized for the Saltstone Disposal Units #6 through #12. Each Saltstone Disposal Uni is a 375-foot diameter 43-foot tall single-cell design. Saltstone Disposal Unit 6 has a capacity of over 32.8 million gallons of saltstone grout or 18.7 million gal of feed. Saltstone Disposal Unit 7 through Saltstone Disposal Unit 12, has a capacity of about 34.5 million gallons (19.6 million gallons of feed). The large Saltstone Disposal Unit 6 began construction in December 2013, was construction complete in June 2018, and began filling in August 2018. Saltstone Disposal Unit 7 construction was complete in the third quarter of FY 2021. Construction activities of Saltstone Disposal Units 8 and 9 were initiated in FY 2020. Saltstone Disposal Unit 8 is forecast to become operational in FY 2023 and Saltstone Disposal Unit 9 in FY 2024. Saltstone Disposal Units 10-12 are forecast to complete Critical Decision-2/3 development in FY 2021 and begin site preparation activities in FY 2022 and construction in FY 2023. An additional SDU may be required at the end of the program and will be sized to meet the final forecast need. It takes 4 years to construct a Saltstone Disposal Unit and 16 to 18 months to fill it and the program will require one Saltstone Disposal Unit about every 16 months to support Salt Waste Processing Facility. Once all units are filled, they will be capped with an engineered cover consisting of several layers of impermeable materials, isolating it from the environment (which will be performed under PBS SR-0030).

The scope of this PBS includes the design, construction, and operation of the Saltstone Disposal Units for the final and permanent disposal in a saltstone waste form of the decontaminated salt solution (low-level waste) resulting from the salt waste processing. 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, while the walls, floor, and roof of the Saltstone Disposal Units are providing secondary containment.

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

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
\$904,926,000	\$939,160,000	+\$34,234,000

Liquid Waste Operations (\$686,990,000)

- Provided site-wide services and landlord support functions for day-to-day operations. Site-wide and landlord support services are pro-rated across the PBSs.
- Maintained Tank Farms, including evaporators, Defense Waste Processing Facility, including melter, and Saltstone Production Facility, in a safe configuration, staffed and ready for operations.
- Continued Liquid Waste Operations support of rotating training shift and support attrition in Tank Farms, Defense Waste Processing Facility, and Saltstone Facility and hiring of critical personnel to support greater salt waste preparation and processing operations.
- Performed Tank Farm operations activities, including waste transfers and removals.

Liquid Waste Operations (\$696,180,000)

- Pay PBS share of site-wide services and landlord support functions for day-to-day operations.
- Maintain Tank Farms, including evaporators, Defense Waste Processing Facility, including Melter, and Saltstone Production Facility, in a safe configuration, staffed and ready for operations.
- Complete modification of Glass Waste Storage Building #1 for double stacking operation with the modification of the last 300 spaces in.
- Perform Tank Farm operations activities, including waste removal and evaporator operations.
- Operate Defense Waste Processing Facility to produce 180-200 canisters (dependent on salt processing) of vitrified high-level waste.
- Complete modifications required to enable processing of cesium strip effluent in the Defense Waste Processing Facility slurry mix

- Increase in Liquid Waste Operations due to increase in Defense Waste Processing Facility and Saltstone critical labor to support ramp up in operations.
- Salt Waste Processing Operations increased by \$9,634,000 due to the significant increase in the number of tanks being prepared for waste removal to support feed preparation for the Salt Waste Processing Facility.
- Saltstone Disposal increased by \$10,722,000 due to an increase in construction activities associated with five Saltstone Disposal Units.
- Regulatory Commitments increased by \$4,499,000 due to increase in work preparing old style tanks 1,2, and 14 for waste removal and Tank 9 (Tank Closure Cesium Removal feed tank) to support increased processing rate in Tank Closure Cesium Removal and increased operations in Tank Closure Cesium Removal.

- Continued processing Sludge Batch 9 in Defense Waste Processing Facility; and qualify Sludge Batch 10.
- Prepared 4 of 5 and fed 2 Salt Waste Processing Facility Batches (dependent on SWPF operations).
- Operated Defense Waste Processing Facility to produce up to 59 canisters of 118 canisters (dependent on Salt Waste Processing Facility operations) of vitrified high-level waste.
- Modified spaces of additional 300 canisters for double stacking effort in Glass Waste Storage Building #1.
- Operated Saltstone to treat 3.143 million gallons out of 4.6 million gallons of low-level waste (dependent on Salt Waste Processing Facility operations).
- Continued preparation of Tank 33, 35 and 39 for future Sludge Batches to support Defense Waste Processing Facility operations.
- Provided portion of deactivation costs for F&H Analytical Laboratories based on historical usage by H-Canyon and HB Line.

Salt Waste Processing Operations (\$126,743,000)

- Initiated Salt Waste Processing Facility Hot Operations January 2021 and processed 1.986 million gallons by September 30, 2021.
- Operate Salt Waste Processing Facility at a nominal rate of 6 million gallons per year. (Operated January 18 to September 30 achieving about 47% of the processing rate for that period).
- Continued Defense Waste Processing Facility modifications and completed Saltstone Facility modifications to support increased operation rates in the Salt Waste Processing Facility.

- evaporator to increase glass throughput in support of Salt Waste Processing Facility operations at processing rate of up to 9 million gallons per year.
- Continue preparation of Tanks 33, 34 and 39 for Sludge Batches to feed the Defense Waste Processing Facility.
 - Complete processing in Defense Waste Processing Facility of Sludge Batch 9 and initiate processing Sludge Batch 10.
 - Complete compilation of Sludge Batch 11 and initiate sludge washing and qualification.

Salt Waste Processing Operations(\$136,347,000)

- Operate Salt Waste Processing Facility at 6 million gallons per year rate in the first quarter. Will go into a one-month outage in the second quarter to implement Next Generation Solvent to enable increase to 9 million gallons per year rate. Salt Waste Processing will operate achieving step increases in processing rate up to 9 million gallons per year the rest of the year. Plan to process a total volume of 5,950,000 gallons in FY 2023.
- Initiate salt dissolution in Tanks 3 and 27 using commercial submersible mixing pumps expedite salt dissolution needed for salt batches to feed the Salt Waste Processing Facility.
- Continue salt dissolution in Tank 44 using low volume mixing jets and complete installation of commercial submersible mixing pumps to expedite salt dissolution needed for salt batches to feed the Salt Waste Processing Facility. Initiate salt dissolution in Tanks 31 and 28 using low volume mixing jets. Initiate preparation of Tanks 25 and 45 and continue preparation of Tank 36 and 46, and 47 for salt dissolution

- Initiated salt dissolution in Tanks 27 and 44 to prepare salt batches to feed the Salt Waste Processing Facility.
- Completed Tank 42 modifications as a blend tank to support Salt Waste Processing Facility at 9Mgal/yr.
- Continued preparation of Tanks 3, 28, 31 and 47 needed for salt batches to feed the Salt Waste Processing Facility.
- Continued the East Hill utilities upgrade to remove temporary modifications and continue work on transfer systems, processing tanks ventilation and critical spare parts to support Salt Waste Processing Facility planned operations.
- Continued support for Saltstone Disposal Unit (SDU) Line Item OPC funded scope.

Saltstone Disposal (\$76,778,000)

- Completed Saltstone Disposal Unit 7 construction and became operational.
- Continued construction of Saltstone Disposal Units 8/9.
- Supported Saltstone Production Facility operations to support Salt Waste Processing Facility production rates.

Regulatory Commitments (\$14,415,000)

- Initiated preparation of Tank 2 and 14 to provide basis for negotiation of new Federal Facility Agreement milestones required by the Minor Modification for the 2019 Suspension Agreement of Federal Facility Agreement High-Level Waste Tank Milestones and provide feed for Salt Waste Processing Facility and Tank Closure Cesium Removal effort.

needed for salt batches to feed the Salt Waste Processing Facility.

- Continue the East Hill utilities upgrade to remove temporary modifications and continue work on transfer systems and processing tanks ventilation to support Salt Waste Processing Facility planned operations.
- Fund Other Project Cost scope for Salt Disposal Unit Line Item.

Saltstone Disposal (\$87,500,000)

- Complete construction of Saltstone Disposal Unit 8 and continue construction of Saltstone Disposal Unit 9.
- Complete site preparation activities and initiate construction preparation activities for Saltstone Disposal Unit 10-12.
- Support Saltstone Production Facility operations to support Salt Waste Processing Facility production rates by completing construction of Saltstone Disposal Units.

Regulatory Commitments (\$19,133,000)

- Initiate preparation of Tank 1 and continue preparation of Tanks 2 and 14 to provide basis for negotiation of new Federal Facility Agreement milestones required by the Minor Modification for the 2019 Suspension Agreement of Federal Facility Agreement High-Level Waste Tank Milestones and provide feed for Salt Waste Processing Facility and Defense Waste Processing Facility
- Continue operation of Tank Closure Cesium Removal Unit #1 in Tank 9 to meet commitments in South Carolina Department of Health and Environmental Control's Dispute Resolution Agreement for Alleged Violations of

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- Operated Tank Closure Cesium Removal Unit #1 in Tank 9 to gather operational data to determine path forward for the procurement of a second Tank Closure Cesium Removal Unit that supports use of this technology to meet commitments in South Carolina Department of Health and Environmental Control's Dispute Resolution Agreement for Alleged Violations of Class 3 Industrial Solid Waste Landfill Permit Facility.
 - Initiated closure activities in F-Tank Farm diversion boxes 5 and 6 scheduled to complete in FY 2022 to meet FFA commitment for closure as part of the newly approved Minor Modification for the 2019 Suspension Agreement of Federal Facility Agreement High-Level Waste Tank Milestones.
- Class 3 Industrial Solid Waste Landfill Permit Facility.
 - Prepare Tank 9 for installation of commercial submersible mixing pumps to accelerate salt dissolution in support of Tank Closure Cesium Removal operations.
 - Complete closure activities in F-Tank Farm diversion boxes 5 and 6 to meet Federal Facility Agreement commitment for closure as part of the newly approved Minor Modification for the 2019 Suspension Agreement of Federal Facility Agreement High-Level Waste Tank Milestones.

Savannah River Legacy Pensions (PBS: SR-0101)

Overview

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

The scope of this PBS enables Savannah River Site to meet its legacy pension obligations. These obligations are necessary to meet contributions to address legacy pension liability.

This is strictly the EM portion of the legacy pension. National Nuclear Security Administration will contribute with their own funding source.

Savannah River Legacy Pensions (PBS: SR-0101)

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
\$127,465,000	\$132,294,000	+\$4,829,000
<ul style="list-style-type: none"> Funded EM’s share of Savannah River Site’s legacy pension obligation. 	<ul style="list-style-type: none"> Funds EM’s share of Savannah River Site’s legacy pension obligation. 	<ul style="list-style-type: none"> Expected legacy pension obligation has increased.

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 PBS is to provide support to enable the Savannah River Site to perform its missions and cleanup objectives. Activities include 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 and support for Workforce Opportunities in Regional Careers grant.

The scope of this PBS also supports geological surveys and natural resource management, and DOE lease agreements (including those with the U.S. Army Corps of Engineers).

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

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
\$11,549,000	\$12,137,000	+\$588,000
<ul style="list-style-type: none"> • Provided payments in Lieu of Taxes to Aiken, Allendale, and Barnwell counties (\$6,475,376). • Provided support to South Carolina Department of Natural Resources for technical expertise in the conduct of geological surveys and natural resource management (\$155,796). • Provided support to South Carolina Department of Health and Environmental Control for oversight of environmental monitoring, Federal Facility Agreement, 	<ul style="list-style-type: none"> • Provide payments in Lieu of Taxes to Aiken, Allendale, and Barnwell counties (\$6,475,000). • Provide support to South Carolina Department of Natural Resources for technical expertise in the conduct of geological surveys and natural resource management (\$165,284). • Provide support to South Carolina Department of Health and Environmental Control for oversight of environmental monitoring, Federal Facility Agreement, Agreement in Principle, and Site Treatment Plan (\$3,850,469). 	<ul style="list-style-type: none"> • No significant change.

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- Agreement in Principle, and Site Treatment Plan (\$3,351,634).
 - Provided support to Georgia and South Carolina Emergency Management Support (\$363,013).
 - Supported Interagency Agreement for the Environmental Protection Agency, Region 4 oversight of the Federal Facility Agreement (\$300,000).
 - Provided support to the Site Specific Advisory Board (Savannah River Citizen’s Advisory Board) (\$298,681).
 - Supported DOE lease agreements, including those with the U.S. Army Corps of Engineers (\$17,000).
 - Supported Workforce Opportunities in Regional Careers grant (\$587,500).
 - Provide support to Georgia and South Carolina Emergency Management Support (\$532,344).
 - Support Interagency Agreement for the Environmental Protection Agency, Region 4 oversight of the Federal Facility Agreement (\$300,000).
 - Provide support to the Site-Specific Advisory Board (Savannah River Citizen’s Advisory Board) (\$209,403).
 - Support DOE lease agreements, including those with the U.S. Army Corps of Engineers (\$17,000).
 - Support Workforce Opportunities in Regional Careers grant (\$587,500).

Safeguards and Security (PBS: SR-0020)

Overview

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

This PBS funds the Safeguards and Security Program, which provides security support services for the 310 square-mile Savannah River Site, and the Cyber Security Program, which protects the networks, computers, programs and data within the Savannah River Site from attack, damage or unauthorized access.

Safeguards and Security Program

The scope of the Safeguards and Security Program provides total security services, including access control, property protection, law enforcement, criminal investigations, traffic control, canine explosives and drug detection, aviation support, river patrol, alarm equipment monitoring, and a Special Response Team.

This PBS provides for a trained protective force 24 hours a day seven days a week to perform the various necessary activities to protect Government property and the employees who work onsite.

The scope covered under this PBS will continue until DOE's mission at the Savannah River Site is complete.

These activities include:

- Control access to the General Site by operating perimeter barricades controlling personnel and vehicular access/egress, operating and maintaining special vehicle inspection equipment, and providing vendor/visitor escort requirements.
- Staff security posts and patrol designated areas within the 198,000 plus acres comprising the Savannah River Site.
- Protect Special Nuclear Material and vital facilities against unauthorized access, theft, loss of custody, or destruction of components for nuclear weapons, and espionage.
- Protect classified matter or Governmental property from loss or theft.
- Protect against other hostile acts that may affect national security, or the health and safety of employees, the public or the environment.
- Enforce the law and conduct criminal investigations.
- Operate alarm-monitoring centers. Monitor critical Savannah River Site facilities security alarm systems and dispatch response personnel for alarm assessment.
- Coordinate and provide security for the transport of nuclear material.
- Maintain a Special Response Team available at all times capable of resolving incidents that require force options that exceed the capabilities of Security Police personnel and/or existing physical security systems. Special Response Team personnel shall be ready to execute both defensive and offensive operations.
- Maintain tactical, explosive, and chemical/biological response teams to effectively respond to bomb or explosive incidents onsite and offsite. Have on staff a full-time Explosive Ordnance Disposal Technician.
- Provide aviation operations to include Federal Aviation Administration certified pilots and aircraft maintenance personnel necessary to effectively maintain and operate the two DOE helicopters. The primary mission of the aviation operations is to provide rapid transportation for the Special Response Team. Additional responsibilities include providing an airborne intelligence gathering/relay station, escort/response vehicle, routine patrol of the general site and law enforcement support.
- Provide canine operations. Provide care for DOE-supplied canines, which are trained and qualified in explosives detection and narcotics detection. Ensure that all assigned canine teams are certified annually by the United States Police Canine Association and pass annual Odor Recognition Proficiency Tests.

- Protect all on-site nuclear material movement. Responsible for operating shipment vehicles for classified offsite shipments.
- Maintain a professional training staff to provide basic and specialized security training, physical conditioning, weapons training and qualification, and area-specific field training. Facilities include classrooms, rifle and pistol ranges, multi-media learning laboratory, and specialized outdoor training sites. The security forces must train and maintain certifications and qualifications in security force competencies.

This scope of this PBS also supports the issuance and maintenance of the personnel badging program, issuing badges to over 11,000 onsite federal and contractor personnel as well as all site visitors.

Cyber Security Program

The Cyber Security Program at the Savannah River Site protects government information and technology systems in support of DOE missions executed at the Site.

Safeguards and Security (PBS: SR-0020)

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
\$164,251,000	\$152,194,000	-\$12,057,000

- Safeguards and Security Program (\$144,668,000)
- Supported required security force and resources necessary to guard and safely maintain Special Nuclear Material in accordance with DOE policy.
 - Ensured appropriate levels of protection for Department of Energy Savannah River Site facilities against theft or diversion of Special Nuclear Materials.
 - Prevented acts of radiological, chemical and biological sabotage.
 - Prevented theft or loss of classified matter and government property.
 - Prevented other hostile acts that may cause unacceptable impacts to national security, the health and safety of employees, the public or the environment.

- Safeguards and Security Program (\$145,407,000)
- Supports required security force and resources necessary to guard and safely maintain Special Nuclear Material in accordance with DOE policy.
 - Ensures appropriate levels of protection for Department of Energy Savannah River Site facilities against theft or diversion of Special Nuclear Materials.
 - Prevents acts of radiological, chemical and biological sabotage.
 - Prevents theft or loss of classified matter and government property.
 - Prevents other hostile acts that may cause unacceptable impacts to national security, the health and safety of employees, the public or the environment.

- Decrease is due to the National Nuclear Security Administration contribution for cyber security offsetting EM funding requirements.

-
- Supported infrastructure maintenance and upgrades.

Cyber Security (\$19,583,000)

- Protected government information and technology systems in support of DOE missions executed at the Site.
- Maintained the Savannah River Cyber Security capability in accordance with DOE Order 205.1B and emerging DOE cyber requirements.
- Supported identification, assessment and protection of mission critical information and information systems according to current threat vectors and risk posture.
- Supported Headquarters cyber security.

-
- Support infrastructure maintenance and upgrades.

Cyber Security (\$6,787,000)

- Protects government information and technology systems in support of DOE missions executed at the Site.
- Maintains the Savannah River Cyber Security capability in accordance with DOE Order 205.1B and emerging DOE cyber requirements.
- Supports identification, assessment and protection of mission critical information and information systems according to current threat vectors and risk posture.
- Supports Headquarters cyber security.

Savannah River National Laboratory Operations and Maintenance (PBS: SR-SRNL-0100)

Overview

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

The scope of this PBS enables the Savannah River Site to meet its operation, maintenance, and utilities obligations for Savannah River Nuclear Laboratory.

The PBS supports EM’s share of the operations, maintenance, and utilities for Savannah River Nuclear Laboratory facilities. National Nuclear Security Administration will contribute through their own funding source.

SRNL Infrastructure and Support (PBS: SR-SRNL-0100)

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
\$32,726,000	\$41,000,000	+\$8,274,000
<ul style="list-style-type: none"> The scope of this work was funded indirectly. 	<ul style="list-style-type: none"> Funds EM’s share of the Savannah River National Laboratory Operations and Maintenance. 	<ul style="list-style-type: none"> Increase due to maintenance cost to ensure reliability of equipment.

Savannah River National Laboratory Crosscut
(dollars in thousands)

Savannah River National Laboratory	FY 2021 Enacted	FY 2023 Request	FY 2023 Request vs FY2021 Enacted
Environmental Management			
Defense Environmental Cleanup			
Direct Funding -			
Savannah River	117,760	108,000	-9,760
EM Headquarters	19,000	25,850	+6,850
Office of River Protection	15,000	8,500	-6,500
Paducah / Portsmouth	1,100	250	-850
Carlsbad	1,000	500	-500
Oak Ridge	1,000	1,500	+500
Richland	2,500	2,000	-500
Los Alamos National Laboratory	500	1000	+500
Idaho	1,200	2,100	+900
Moab	0	150	+150
Total	159,560	149,850	-9,210

¹ Numbers are estimates only.

The Savannah River National Laboratory executes approximately \$300,000,000 per year supporting EM, the National Nuclear Security Administration, and other DOE offices such as Legacy Management, Science, Energy Efficiency and Renewable Energy, Advanced Research Projects Agency – Energy, and Nuclear Energy, and other federal agencies outside entities such as the Federal Bureau of Investigation. In addition to the direct support for the Office of Environmental Management at the Savannah River Site, the Savannah River National Laboratory also supports DOE Headquarters and other Environmental Management sites (Hanford, Paducah, Carlsbad, Oak Ridge, Los Alamos, and Idaho).

The FY 2023 numbers noted above are estimates based on executed FY 2021 work scope.

Specifically, for the Savannah River Site, the Savannah River National Laboratory provides support for environmental remediation and risk reduction; development of processes to remediate high- and low-level wastes; technical oversight of test programs; the conduct of studies and development of mitigation strategies to address deleterious effects on materials used in environmental waste processes; technical advice and technology development to address soil and groundwater radiological and chemical contamination; flowsheet development for spent (used) fuel processing; development of innovative processes to recycle or dispose spent fuel and targets, apply the collaborative innovation process to develop next generation nuclear materials processing system and technology development for all aspects of nuclear materials management and disposition. For National Nuclear Security Administration and other federal agencies, the laboratory provides key technical and planning input crucial to national security. Specifically, for National Nuclear Security Administration’s national security mission, Savannah River National Laboratory is responsible for Tritium Research and Development, Gas Transfer Research and Development, stockpile stewardship and tritium sustainment, rare isotope production, removal of weapons usable materials to advance nuclear security, development of materials disposition paths and supporting security initiatives related to

denuclearization, and support to the Savannah River Plutonium Processing Facility Design for pit production. The laboratory currently performs work related to climate adaptation and resilience assessments for EM and Office of Legacy Management infrastructure, remedial systems and the environment. Examples include Savannah River National Laboratory’s meteorological assets that are applied to forestry management, advanced materials development for renewable energy applications, and support for Office of Science initiatives that monitor atmospheric carbon and carbon uptake. Growth in climate-related R&D is anticipated under the new Savannah River National Laboratory independent Management and Operations contract.

Activities Supported by Savannah River National Laboratory Funding

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
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Savannah River

\$117,760,000

\$108,000,000

-\$9,760,000

- Developed and demonstrated flowsheets to enable Savannah River Site canyon processing.
- Developed Flowsheet development and alternatives evaluations for tank waste program.
- Developed and deployed Soil and Groundwater remediation technologies.
- Supported used fuel evaluations.
- Plutonium Surveillance Program – destructive and non-destructive characterization of 3013 canisters to determine national standards were met.
- Completed general operational facility support including material characterization, statistical analyses, equipment troubleshooting, evaluation of chemical processing issues, etc.
- Supported for 235-F deactivation and assessment activities.
- Supported tank waste technology development including means to separate the high activity radionuclides in order to disposition the high-level

- Develop and demonstrate flowsheets to enable Savannah River Site canyon processing.
- Flowsheet development and alternatives evaluations for tank waste program.
- Develop and deploy Soil and Groundwater remediation technologies.
- Support used fuel evaluations.
- Plutonium Surveillance Program – destructive and non-destructive characterization of 3013 canisters to determine national standards are being met.
- Continue general operational facility support including material characterization, statistical analyses, equipment troubleshooting, evaluation of chemical processing issues, etc.
- Support Tank waste technology development including means to separate the high activity radionuclides in order to disposition the high-level waste and the low concentration radionuclide

- Decrease from completion of the draft Performance Assessment for E-Area and completion of some soil and groundwater remediation scope.
- Less anticipated 235-F support for closure activities.

waste along with various unit operations such as filtering, grouting, retrieval, etc.

- Supported nuclear materials packaging development and documentation.
- Supported waste characterization including sludge and salt characterization to support facility operations and tank closure analysis.
- Supported waste qualification and demonstration.
- Supported waste form development.
- Supported mixing studies including modeling and testing in order to demonstrate waste tanks and processing tanks are adequately mixed.
- Supported analytical support for operations and technical development for Nuclear Materials processing.
- Supported waste certification program.
- Supported waste disposal activities.
- Revised low-level waste performance assessment activities.
- Developed and executed life extension and surveillance programs for Tank Farms.
- Supported to Salt Waste Processing Facility operations to include troubleshooting.
- Provided statistical support and analyses for the materials control and accountability program for special nuclear material.

streams along with various unit operations such as filtering, grouting, retrieval, etc.

- Nuclear materials packaging development and documentation.
- Waste characterization including sludge and salt characterization to support facility operations and tank closure analysis.
- Waste qualification and demonstration.
- Waste form development.
- Mixing studies including modeling and testing in order to demonstrate waste tanks and processing tanks are adequately mixed.
- Analytical support for operations and technical development for Nuclear Materials processing.
- Support waste certification program.
- Support waste disposal activities.
- Revise low-level waste performance assessment activities.
- Develop and execute life extension and surveillance programs for Tank Farms.
- Support to Salt Waste Processing Facility operations to include troubleshooting.
- Provide statistical support and analyses for the materials control and accountability program for special nuclear material.

EM Headquarters

\$19,000,000

- Supported nuclear Materials Packaging development and certifications.
- Supported to Headquarters on revisions to DOE Order 435.1 and in support of the International Atomic Energy Agency.
- Supported Technology development for used fuel management including dry storage.

\$25,850,000

- 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.
- Technology development for used fuel management including dry storage.

+\$6,850,000

- Increase in Mississippi State University and Minority Serving Institutions Partnership Program, scopes.
-

- Conceptual development of next generation nuclear materials processing and disposition systems.
- Supported technical studies for Headquarters including independent technical reviews, Technology Readiness Assessments, etc.
- Supported long-term performance/durability studies of high- and low-level waste forms.
- Continued technology Development and deployment of soil and groundwater remediation strategies and monitoring approaches.
- Developed deactivation and decommissioning facility assessment and in-situ decommissioning tools.
- Supported flowsheet Development – definition and testing of flowsheets for the processing of high-level waste including specific focused programs for troublesome components.
- Transferred and coordinated remediation approaches to Legacy Management sites.
- Coordinated Minority Serving Institutions Partnership grants.
- Developed and verified protectiveness levels of alternative waste forms for management of nuclear materials (EM-managed Plutonium).
- Provided critical resources in the development of the EM Strategic Plan.
- Developed response and framework in coordination with recommendations of the NAS S&T study.
- Provided engineering assessment resources to process/approach issues and events across the complex through SRNL decision support tools.
- Perform a Technical Assessment of Radioactive Waste Classification versus potential Disposal Options.
- Conducted follow-on activities to implement Competency Review Recommendations.
- Conceptual technology development of next generation nuclear materials processing and disposition systems.
- Technical studies on DOE-EM’s excess/orphaned nuclear materials with no identified disposition path.
- Technical studies for Headquarters including independent technical reviews, Technology Readiness Assessments, etc.
- Long-term performance/durability studies of low-level waste forms.
- Technology Development and deployment of soil and groundwater remediation strategies and monitoring approaches.
- Development of deactivation and 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.
- Transfer and coordination of remediation approaches to Legacy Management sites.
- Coordinate Minority Serving Institutions Partnership grants and sponsoring of post-doctoral program.
- Develop response and framework in coordination with recommendations of the National Academy of Science, Science and Technology study.
- Provide engineering assessment resources to process/approach issues and events across the complex through Savannah River National Laboratory decision support tools.
- Perform a Technical Assessment of Radioactive Waste Classification versus potential Disposal Options.
- Conduct follow-on activities to implement Competency Review Recommendations.

- Provided technical support to DOE-HQ and field offices for implementation of end-state contracts.
- Provide technical support to DOE-Headquarters and field offices for implementation of end-state contracts.
- Support for integration of the Technology Development and Deployment program across Science, EM, and Legacy Management; engineering assessment resources to process/approach issues and events across the complex; technical support to review of end-state contracts; and follow-on activities to maintain lab competencies.
- Help with Indefinite Delivery/Indefinite Quantity contract evaluations.
- Execution of the Regulatory Center of Excellence scope to assist DOE sites with stakeholder communication.

Office of River Protection

\$15,000,000

- Supported waste form development and qualification – formulation of grouts and glass and the development of strategies to demonstrate compliance.
- Supported mixing and sampling studies of tanks in the Tank Farm and Waste Treatment Plant to ensure adequate mixing of waste prior to and during processing of waste.
- Supported flowsheet Development and evaluation – definition and testing of flowsheets, operating parameters, etc. for the processing of high-level waste.
- Implemented strategies for staging and preparing waste to meet facility acceptance criteria.
- Provided representation on tank integrity panel and provide consultation on materials corrosion and compatibility.

\$8,500,000

- Waste form development and qualification – formulation of grouts and glass and the development of strategies to demonstrate compliance.
- Mixing and sampling studies of tanks in the Tank Farm 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.
- Implement strategies for staging and preparing waste to meet facility acceptance criteria.
- Provide representation on tank integrity panel and provide consultation on materials corrosion and compatibility.
- Tank Farm safety basis technical issue resolution (mixing and operations).

-\$6,500,000

- Decrease as Hanford FY 2021 National Defense Authorization Act – section 3125 and Mission Acceleration teams close out.

- Supported tank Farm safety basis technical issue resolution (mixing and operations).
- Supported for startup testing for Direct Feed Low Activity Waste.
- Developed alternative treatment methods and flowsheets to reduce the life cycle for the Hanford Mission.
- Provided consultation and technical support to the development of performance assessments and strategies for Tank Closure.
- Developed sludge retrieval and tank farm sampling technologies to reduce water load and minimize worker exposure.
- Developed flowsheets and processing strategies for direct feed High-Level Waste processing.
- Support for startup testing for Direct Feed Low Activity Waste.
- Development of alternative treatment methods and flowsheets to reduce the life cycle for the Hanford Mission.
- Consultation and technical support to the development of performance assessments and strategies for Tank Closure.
- Development of sludge retrieval and tank farm sampling technologies to reduce water load and minimize worker exposure.
- Develop flowsheets and processing strategies for direct feed High-Level Waste processing.
- Direct Feed Low Activity Waste Startup support

Paducah / Portsmouth

\$1,100,000

\$250,000

-\$850,000

- | | | |
|---|---|---|
| <ul style="list-style-type: none"> • Deployed models and technologies for remediation and closure. • Deactivation and decommissioning technology development and deployment. • Developed site specific hazard and risk profiles to enhance work planning, such as improving appropriate selection of tools, techniques, and workforce training. It also includes stakeholder engagement. • Supported resolution of subsurface contamination issues. • Provided packaging and transportation technical support. | <ul style="list-style-type: none"> • Deploy models and technologies for remediation and closure. • Deactivation and decommissioning technology development and deployment. • Develop site specific hazard and risk profiles to enhance work planning, such as improving appropriate selection of tools, techniques, and work force training. It also includes stakeholder engagement. • Support resolution of subsurface contamination issues. • Provide packaging and transportation technical support. | <ul style="list-style-type: none"> • Reflects reductions in work scope as issues have been resolved and work planning activities specified |
|---|---|---|

Carlsbad

\$1,000,000

\$500,000

-\$500,000

- | | | |
|---|--|---|
| <ul style="list-style-type: none"> • Provided remote inspection and robotics applications. • Supported operations of Waste Isolation Pilot Plant including assessments of modified procedures and protocols, as well as coordination of shipments and assessment of materials acceptable for disposal. • Provided engineering and chemistry support for waste packaging and storage. • Provided technical and program management support to the Office of the National TRU Program. | <ul style="list-style-type: none"> • Provide remote inspection and robotics applications. • Support operations of Waste Isolation Pilot Plant including assessments of modified procedures and protocols, as well as coordination of shipments and assessment of materials acceptable for disposal. • Provide engineering and chemistry support for waste packaging and storage. • Provide technical and program management support to the Office of the National Transuranic Waste Program. | <ul style="list-style-type: none"> • Reflects completion of work to support removal of Los Alamos transuranic waste stored at Waste Control Specialists. |
|---|--|---|

Oak Ridge

- | | | |
|---|--|--|
| \$1,000,000 | \$1,500,000 | +\$500,000 |
| <ul style="list-style-type: none"> • Deployed waste remediation technologies. • Provided engineering consultation and support for EM waste treatment missions. • Supported to evaluation of D&D and closure options for excess facilities. | <ul style="list-style-type: none"> • Deploy waste remediation technologies. • Provide engineering consultation and support for EM waste treatment missions. • Provide assistance with various technology deployments to support deactivation and decommissioning and mercury abatement/treatment and also provide technical support to regulatory strategies for facility deactivation and decommissioning. Key will be Savannah River National Laboratory technologies for identifying the locations and amounts of contamination to improve deactivation and decommissioning safety and efficiency. | <ul style="list-style-type: none"> • Reflects an increase in support for deactivation and demolition planning and remote inspection, including mercury treatment. |

Richland

- | | | |
|---|--|--|
| \$2,500,000 | \$2,000,000 | -\$500,000 |
| <ul style="list-style-type: none"> • Supported the DOE Low-Level Waste Disposal Facility Federal Review Group. • Materials consultation. • Deactivation & decommissioning technology development and deployment. | <ul style="list-style-type: none"> • Supports the DOE Low-Level Waste Disposal Facility Federal Review Group. • Materials consultation. • Deactivation and decommissioning technology development and deployment. | <ul style="list-style-type: none"> • Reflects reductions in scope as approaches are identified and implemented. |

- Developed enhanced characterization approaches for facility maintenance and planning for deactivation & decommissioning.
- Implemented enhanced approaches to in-situ groundwater management.
- Provided planning input to management and remediation of excess facilities and storage units, including regulatory framework for accelerated closure.
- Developed a closure strategy for Hanford to include soil and groundwater and excess facilities with RL and their contractors.

- Develop enhanced characterization approaches for facility maintenance and planning for deactivation and decommissioning.
- Implement enhanced approaches to in-situ groundwater management.
- Provide planning input to management and remediation of excess facilities and storage units, including regulatory framework for accelerated closure.
- Develop a closure strategy for Hanford to include soil and groundwater and excess facilities with Richland and their contractors.

Los Alamos National Laboratory

\$500,000

- Supported nuclear materials packaging studies, including disposition of drums at Waste Control Specialists.
- Supported technical assistance for groundwater remediation.
- Provided technical consultation to Los Alamos National Laboratory EM Office.
- Supported implement enhanced approaches to in-situ groundwater management.

\$1,000,000

- Nuclear materials packaging studies, including disposition of drums at waste control specialist.
- Technical assistance for groundwater remediation.
- Technical consultation to Los Alamos National Laboratory EM Office.
- Implement enhanced approaches to in-situ groundwater management.

+\$500,000

- Reflects an increase in support with chromium plume and treatment following discovery of additional chromium released in the groundwater. Increase also supports options analysis for preparing drums stored at Waste Control Specialists for removal and disposition at the Waste Isolation Pilot Plant.

Idaho National Laboratory

\$1,200,000

- Supported nuclear Materials Packaging and disposition Studies.
- Provided technical support to the Integrated Waste Treatment Unit facility in treatment of the Sodium Bearing Waste.
- Supported for disposition of other waste streams and nuclear materials.

\$2,100,000

- Nuclear Materials Packaging and disposition Studies.
- Provide technical support to the Integrated Waste Treatment Unit facility in treatment of the Sodium Bearing Waste.
- Support for disposition of other waste streams and nuclear materials.

+\$900,000

- Reflects an increase in support for waste form qualification and rad analysis qualification for Integrated Waste Treatment Unit and for Idaho calcine waste treatment.

- Testing to support disposition of Idaho calcine.

Moab

	\$0	\$150,000	+\$150,000
<ul style="list-style-type: none"> • No activity. 	<ul style="list-style-type: none"> • Independent assessment and technical consultation to the development of Groundwater Corrective Action Plan and groundwater management strategy. 	<ul style="list-style-type: none"> • Reflects an increase in technical support to the Moab Office on the development of Groundwater Corrective Action Plan and groundwater management strategy. 	

**Savannah River
Capital Summary (\$K)**

Total	Prior Years	FY 2021 Enacted	FY 2021 Actuals	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted
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Capital Operating Expenses Summary (including (Major Items of Equipment (MIE))

Capital Asset Projects > \$500K	0	0	0	0	0	0
Minor Construction (<\$25M)	23,245	13,138	0	937	0	+9,170
Total, Capital Operating Expenses	23,245	13,138	0	937	0	+9,170

Minor Construction (Total Project Cost (TPC) <\$25M)

Savannah River (Indirect Funded)

SRNL IGPPs ^a	17,895	11,895	0	0	0	6,000	+6,000
Y-755 Upgrade SRNL Stack Monitors, B, C, and Sand Filter Stacks	1,200	30	0	0	0	1,170	+1,170
Y-815 Delta V Control Room C-401 System Upgrade, 773-A	4,150	1,213	0	937	0	2,000	+2,000
Total, Savannah River	23,245	13,138	0	937	0	9,170	+9,170

Total, Capital Summary

23,245	13,138	0	937	0	9,170	+9,170
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^a Projects and allocation of the IGPP request are preliminary. Final projects will reflect emerging or identified risks. When the scope of these project is definitized, Congressional notification will be provided as required.

Savannah River
Construction Summary (\$K)

Total	Prior Years	FY 2021 Enacted	FY 2021 Actuals	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted	
18-D-401, Saltstone Disposal Unit #8 and #9, SR (SR-0014C)							
Total Estimate Cost (TEC)	255,345	28,077	65,500	65,500	65,500	49,832	-15,668
Other Project Costs (OPC)	24,655	8,909	4,155	4,155	4,155	4,125	-30
Total Project Cost (TPC) 18-D-401	280,000	36,986	69,655	69,655	69,655	53,957	-15,698
18-D-402, Emergency Operations Center, SR (SR-0042)							
Total Estimate Cost (TEC)	TBD	8,551	6,500	6,616	6,500	25,568	+19,068
Other Project Costs (OPC)	TBD	4,000	0	0	0	0	0
Total Project Cost (TPC) 18-D-402	TBD	12,551	6,500	6,616	6,500	25,568	+19,068
19-D-701, SR Security Replacement System, SR (SR-0042)							
Total Estimate Cost (TEC)	TBD	14,525	1,000	5,405	1,000	5,000	+4,000
Other Project Costs (OPC)	TBD	0	0	0	0	0	0
Operating Expense Funded (OPEX)	TBD	15,000	0	0	0	0	0
Total Project Cost (TPC) 19-D-701	TBD	29,525	1,000	5,405	1,000	5,000	+4,000
20-D-401, Saltstone Disposal Unit #10, #11 and #12, SR (SR-0014C)							
Total Estimate Cost (TEC)	453,200	500	562	366	562	37,668	+37,106
Other Project Costs (OPC)	42,800	400	950	950	950	4,250	+3,300
Total Project Cost (TPC) 20-D-401	496,000	900	1,512	1,216	1,512	41,918	+40,406

**18-D-401, Saltstone Disposal Units 8/9
Savannah River Site, Aiken, SC
Project is for Design and Construction**

1. Summary, Significant Changes, and Schedule and Cost History

Summary

The FY 2023 Request for the Saltstone Disposal Units 8/9 project is \$53,957,000 (Includes \$49,832,000 in Design and Construction costs and \$4,125,000 in Other Project Costs).

The most recent DOE Order 413.3B approved Critical Decision is Critical Decision 2/3, which was approved on May 1, 2019, with a Performance Baseline (PB) of \$280,000,000 and Critical Decision 4 of September 30, 2024.

Saltstone Disposal Units 8/9 will be designed and constructed based on successful completion of Saltstone Disposal Unit 6, and incorporation of Lessons Learned. To facilitate a streamlined approach, approval of Approve Project Performance Baseline (Critical Decision 2) and Approve Start of Construction (Critical Decision 3) was combined. Saltstone Disposal Units 8/9 will be designed and constructed as close to parallel as feasible to take advantage of efficiencies in mobilization and use of resources.

Significant Changes

This Construction Project Data Sheet is an update of the FY 2022 Congressional Construction Project Data Sheet and does not include a new start for the budget year.

In accordance with DOE Order 413.3B, the Federal Project Director at the appropriate level has been assigned.

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 2018	3/17/2017	4QFY2017	4QFY2017					
FY 2019	3/17/2017	12/11/2017	12/11/2017					
FY 2020	3/17/2017	12/11/2017	12/11/2017	2QFY2019		2QFY2019		
FY 2021	3/17/2017	12/11/2017	12/11/2017	05/01/2019		05/01/2019		4Q2024
FY 2022	3/17/2017	12/11/2017	12/11/2017	05/01/2019	4Q2023	05/01/2019		4Q2024
FY 2023	3/17/2017	12/11/2017	12/11/2017	05/01/2019	4Q2023	05/01/2019		4Q2024

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

CD-3 – Approve Start of Construction

**Environmental Management/
Savannah River/18-D-401 Saltstone
Disposal Unit #8/9**

Final Design Complete – Estimated/Actual date the project design will be /was completed
 D&D Complete – Completion of D&D work (see Section 5)
 CD-4 – Approve Start of Operations or Project Completion
 *D&D activities not part of this Project

Project Cost History

(\$ in thousands)

	TEC, Design	TEC, Construction	TEC, Total	OPC Except D&D	OPC, D&D	OPC, Total	TPC
FY 2018	TBD	TBD	TBD	TBD	N/A	TBD	TBD
FY 2019	TBD	TBD	TBD	TBD	N/A	TBD	TBD
FY 2020	TBD	TBD	TBD	TBD	N/A	TBD	TBD
FY 2021	7,200	240,571	247,771	32,229		32,229	280,000
FY 2022	7,200	240,571	247,771	32,229		32,229	280,000
FY 2023	7,200	240,571	247,771	32,229		32,229	280,000

2. 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 (LWSP). 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 Units 8/9 are the next in a series of units 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 Units 8/9 project will construct two (2) 375 feet in diameter, 43 feet high, 32,000,000 gallon cylindrical large tank disposal cells based on American Water Works Association design. This will include all infrastructure 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 LWSP.

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

**Environmental Management/
 Savannah River/18-D-401 Saltstone
 Disposal Unit #8/9**

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 cleanup 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 need date for all Saltstone Disposal Units is recorded in the Savannah River Site Liquid Waste System Plan (LWSP). 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., funding fluctuations, changes in technology, facility availability, etc.).

The project contingency is based upon previous experience and risks associated with the successful construction of Saltstone Disposal Unit 6 and recently completed SDU 7, which adapted 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 Order 413.3B, Program and Project Management for the Acquisition of Capital Assets.

Key Performance Parameters

The Threshold Key Performance Parameters represent the acceptable performance that the project must achieve. Achievement of the Threshold Key Performance Parameters will be a prerequisite for approval of Critical Decision 4, Project Completion. The Objective Key Performance Parameters represent the desired project performance.

Performance Measure	Threshold	Objective
Capacity	Provide saltstone grout containment capacity of no less than 30,000,000 gallons.	
Throughput	Provide infrastructure capable of delivering saltstone grout at 100 gallons per minute minimum.	
Leak Detection	Install a leak detection system in accordance with the Z-Area Industrial Solid Waste Landfill Permit requirements.	

3. Project Cost and Schedule

Financial Schedule

(dollars in thousands)

	Appropriations	Obligations	Costs
Design			
FY 2018	500	500	500
FY 2019	1,328	1,328	1,328

(dollars in thousands)

	Appropriations	Obligations	Costs
FY 2020	2,999	2,999	2,999
FY 2021	2,460	2,460	2,460
FY 2022	204	204	204
FY 2023	0	0	0
FY 2024	0	0	0
Total, Design	7,491	7,491	7,491
Construction			
FY 2019	6,249	6,249	6,249
FY 2020	17,001	17,001	17,001
FY 2021	63,040	63,040	63,040
FY 2022	65,296	65,296	65,296
FY 2023	49,832	49,832	49,832
FY 2024	46,436	46,436	46,436
Total, Construction	247,854	247,854	247,854
TEC			
FY 2018	500	500	500
FY 2019	7,577	7,577	7,577
FY 2020	20,000	20,000	20,000
FY 2021	65,500	65,500	65,500
FY 2022	65,500	65,500	65,500
FY 2023	49,832	49,832	49,832
FY 2024	46,436	46,436	46,436
Total, TEC	255,345	255,345	255,345

(dollars in thousands)

	Appropriations	Obligations	Costs
OPC			
FY 2018	2,409	2,409	2,409
FY 2019	3,250	3,250	3,250
FY 2020	3,250	3,250	3,250
FY 2021	4,155	4,155	4,155
FY 2022	4,155	4,155	4,155
FY 2023	4,125	4,125	4,125
FY 2024	3,311	3,311	3,311
Total, OPC	24,655	24,655	24,655
Total Project Cost (TPC)			
FY 2018	2,909	2,909	2,909
FY 2019	10,827	10,827	10,827
FY 2020	23,250	23,250	23,250
FY 2021	69,655	69,655	69,655
FY 2022	69,655	69,655	69,655
FY 2023	53,957	53,957	53,957
FY 2024	49,747	49,747	49,747
Total, TPC	280,000	280,000	280,000

Details of Project Cost Estimate

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Design	5,907	5,907	5,907
Contingency	1,293	1,293	1,293
Total, Design	7,200	7,200	7,200
Construction			
Site Preparation			
Equipment			
Other Construction	208,239	208,239	208,239
Contingency	32,332	32,332	32,332
Total, Construction	240,571	240,571	240,571
Total, TEC	247,771	247,771	247,771
<i>Contingency, TEC</i>			
	33,625	33,625	33,625
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning			
Conceptual Design			
Start-up			
Contingency	10,104	10,104	10,104
Other OPC	22,125	22,125	22,125
Total, OPC except D&D	32,229	32,229	32,229
	32,229	32,229	32,229

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total, OPC			
<i>Total, Contingency</i>	<i>10,104</i>	<i>10,104</i>	<i>10,104</i>
Total, TPC	280,000	280,000	280,000
<i>Total, Contingency</i>	<i>43,729</i>	<i>43,729</i>	<i>43,729</i>

Schedule of Appropriation Requests

Request		Prior Years	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	Total
FY 2018	TEC	0	500							500
	OPC	0	2,409							2,409
	TPC	0	2,909							2,909
FY 2019	TEC	0	500	7,577						8,077
	OPC	0	2,409	3,250						5,659
	TPC	0	2,909	10,827						13,736
Y 2020	TEC	0	500	7,577	20,000					28,077
	OPC	0	2,409	3,250	3,250					8,909
	TPC	0	2,909	10,827	23,250					36,985
FY 2021	TEC	0	500	7,577	20,000	65,500				93,577
	OPC	0	2,409	3,250	3,250	4,155				14,659
	TPC	0	2,909	10,827	23,250	69,655				106,641

Request		Prior Years	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	Total
FY 2022	TEC	0	500	7,577	20,000	65,500	65,500			159,077
	OPC	0	2,409	3,250	3,250	4,155	4,155			17,219
	TPC	0	2,909	10,827	23,250	69,655	69,655			176,296
FY 2023	TEC	0	500	7,577	20,000	65,500	65,500	49,832	46,436	255,345
	OPC	0	2,409	3,250	3,250	4,155	4,155	4,125	3,311	24,655
	TPC	0	2,909	10,827	23,250	69,655	69,655	53,957	49,747	280,000

4. Related Operations and Maintenance Funding Requirements

Start of Operation or Beneficial Occupancy – SDU 8	4QFY2023
Start of Operation or Beneficial Occupancy – SDU 9	1QFY2025
Expected Useful Life (number of years) (per Saltstone Disposal Unit)	5
Expected Future Start of D&D	Not in Project

Related Funding Requirements

(Dollars in Thousands)

COST ESTIMATED PER SALTSTONE DISPOSAL UNIT	Annual Costs		Life Cycle Costs	
	Current Total Estimate	Previous Total Estimate	Current Total Estimate	Previous Total Estimate
Operations	100	100	500	500
Maintenance	50	50	250	250
Total, Operations & Maintenance	150	150	750	750

Note: These numbers have been updated to reflect CD-2/3 approval

5. D&D Information

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.

6. Acquisition Approach

Currently, the approach assumes that the liquid waste Prime Contractor will be used to create the design, provide engineering and project management support, or other services required to execute the project. This project will be designed and constructed consistent with the successful execution of the Saltstone Disposal Unit 6 and Saltstone Disposal Unit 7 projects, incorporating best practices.

**18-D-402, Emergency Operations Center Replacement
Savannah River Site, Aiken, South Carolina
Project is for Design and Construction**

1. Summary, Significant Changes and Schedule and Cost History

Summary

The FY 2023 request for the Emergency Operations Center Replacement Project is \$25,568,000 in TEC funds to support construction activities.

The most recent DOE Order 413.3B approved Critical Decision is Critical Decision-1, which was approved on June 23, 2020, with a total cost range of \$83,000,000 to \$93,000,000 and Critical Decision -4 range of FY 2022 to FY 2028. The project has completed the majority of final design and is expected to receive CD-2/3 approval in FY 2022.

Significant Changes

This Construction Project Data Sheet is an update of the FY 2022 Congressional Budget Request and does not include a new start for the budget year.

A Federal Project Director Level 2 has been assigned to this project.

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 2018	01/05/2017	3Q FY2018	4Q FY2018	TBD	TBD	TBD	N/A	TBD
FY 2019	01/05/2017	3Q FY2018	4Q FY2018	TBD	TBD	TBD	N/A	TBD
FY 2020	01/05/2017	2Q FY2020	2Q FY2020	TBD	TBD	TBD	N/A	TBD
FY 2022	01/05/2017	2Q FY2020	06/23/2020	2Q FY2022	1Q FY2022	TBD	N/A	TBD
FY 2023	01/05/2017	6/23/2020	6/23/2020	4QFY022	02/24/2022	4QFY022	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

CD-3 – Approve Start of Construction

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Savannah River/18-D-402 Emergency
Operations Center**

Final Design Complete – Estimated/Actual date the project design will be /was completed

D&D Complete – Completion of D&D work (see Section 5)

CD-4 – Approve Start of Operations or Project Completion

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 2018	TBD	TBD	TBD	TBD	N/A	TBD	TBD
FY 2019	TBD	TBD	TBD	TBD	N/A	TBD	TBD
FY 2020	TBD	TBD	TBD	TBD	N/A	TBD	TBD
FY 2022	16,550	TBD	TBD	TBD	N/A	TBD	TBD
FY 2023	9,551	TBD	TBD	TBD	N/A	TBD	TBD

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

2. Project Scope and Justification

Scope

The scope of this project is to design and construct modern, code-compliant emergency management facilities necessary to respond to emergency event scenarios. The primary Emergency Operations Center (EOC) and alternate Savannah River Site Operations Center (SRSOC) facilities (Emergency Communications Centers) are required to support all emergency and non-emergency communications 24 hours per day, 365 days per year. The Emergency Operations Center is a required facility in which designated command staff are centralized to manage all site emergencies when formally activated.

The primary Savannah River Site Operations Center facilities and the Emergency Operations Center will be relocated from their current locations through a design-bid-build construction project.

Justification

Savannah River Site currently maintains a marginally habitable primary Savannah River Site Operations Center and Emergency Operations Center in the basement of a building that is past its useful life and on the Site's Decontamination and Decommissioning list. Once the new facilities are relocated, the building will be turned over for closure.

Because the existing primary facility housing emergency operations is on the Decontamination and Decommissioning list, the facility is only minimally supported by site maintenance services, which has resulted in mold and mildew formation causing some employees to be removed from their post due to health concerns. Asbestos is found throughout the facility, the majority of which has been roped off and vacated. The facility has experienced several failures related to water intrusion due to its below ground location and has ongoing utility failures due to the age of the utilities and deferred maintenance. The entire facility must continue to be heated and cooled to reduce the mold and mildew growth. The cost of replacing a Heating Ventilation and Air Conditioning unit for a facility of this size with only minimal occupancy is prohibitive. For the safety of the employees that work in these facilities, it is imperative they be relocated to a safer, healthier environment.

The risk of losing functionality in the emergency operations/facilities is high, the consequence of which would cause the Site to be in a minimal (essential personnel only) state of operations for an undetermined amount of time until the facilities could be returned to service.

DOE Order 151.1D requires the Site to maintain an emergency command center at all times. Nuclear Fire Protection Association 1221 requires the (Savannah River Site Operations Center) to be manned 24 hours per day, in addition to other specialized requirements. In its current state the facilities cannot comply with all requirements. In order to bring the facilities into compliance, all facilities must be relocated from their existing locations.

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.

Key Performance Parameters (Preliminary at Critical Decision-1)

The Key Performance Parameters represent the acceptable performance that the project must achieve. Achievement of the Key Performance Parameters will be a prerequisite for approval of Critical Decision -4, Project Completion.

The preliminary CD-1 Key Performance Parameters are as follows:

- Design new facilities to house the primary EOC and SRSOC, and alternate SRSOC functions at SRS;
- Construct new facilities to house the primary EOC and SRSOC, and alternate SRSOC functions at SRS;
- Design, construct and install adequate infrastructure to support the new facilities;
- Transfer and install existing equipment or procure and install new equipment identified in the design to support efficient emergency and communications operations. This includes potential procurement and remediation of cyber security vulnerabilities associated with new and existing equipment (patch and testing).

3. Project Cost and Schedule

Financial Schedule

(Dollars in thousands)

(dollars in thousands)

Appropriations	Obligations	Costs
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Design

FY 2018	500	500	0
FY 2019	1,259	1259	0
FY 2020	6,792	6,792	1,000
FY 2021	1,000	1,000	6,207
FY 2022	0	0	2,344
FY 2023	0	0	0
Total, Design	9,551	9,551	9,551

Construction

FY 2021	5,500	5,500	0
FY 2022	6,500	6,500	1,000
FY 2023	25,568	25,568	32,068
Outyears	TBD	TBD	TBD
Total, Construction	TBD	TBD	TBD

TEC

FY 2018	500	500	0
FY 2019	1,259	1259	0
FY 2020	6,792	6792	0
FY 2021	6,500	6,500	6,207

FY 2022	6,500	6,500	3,344
FY 2023	25,568	25,568	32,068
Outyears	TBD	TBD	TBD
Total, TEC	TBD	TBD	TBD

OPC

FY 2018	500	500	78
FY 2019	3,500	3,500	1,116
FY 2020	0	0	1,015
FY 2021	0	0	408
FY 2022	0	0	0
FY 2023	0	0	0
Outyears	TBD	TBD	TBD
Total, OPC	TBD	TBD	TBD

Total Project Cost (TPC)

FY 2018	1,000	1,000	78
FY 2019	4,759	4,759	1,116
FY 2020	6,792	6,792	2,015
FY 2021	6,500	6,500	6,615
FY 2022	8,999	8,999	3,344
FY 2023	25,568	25,568	32,068
Outyears	TBD	TBD	TBD
Total	TBD	TBD	TBD

Note: Funds for long-lead equipment may be requested prior to project baseline validation if approved by the Acquisition Executive.

Details of Project Cost Estimate

(dollars in thousands)

Current Total Estimate	Previous Total Estimate	Original Validated Baseline
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Total Estimated Cost

Design

Design	7,296	TBD	N/A
Contingency	2,255	TBD	N/A
Total, Design	<hr/> 9,551	TBD	N/A

Construction

Site Preparation	TBD	TBD	N/A
Equipment	TBD	TBD	N/A
Other Construction	TBD	TBD	N/A
Contingency	TBD	TBD	N/A
Total, Construction	<hr/> TBD	TBD	N/A

Total, TEC	TBD	TBD	N/A
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Contingency, TEC	TBD	TBD	N/A
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Other Project Cost (OPC)

OPC except D&D

Conceptual Planning	TBD	TBD	N/A
Conceptual Design	TBD	TBD	N/A
Start-up	TBD	TBD	N/A
Contingency	TBD	TBD	N/A
Total, OPC except D&D	<hr/> TBD	TBD	N/A

Total, OPC	TBD	TBD	N/A
Total, Contingency	TBD	TBD	N/A
Total, TPC	TBD	TBD	N/A
Total, Contingency	TBD	TBD	N/A

Schedule of Appropriations

Request		FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	Outyears	Total
FY 2018	OPC	500							500
	TEC	500							500
	TPC	1,000							1,000
FY 2019	OPC	500	3,500						4,000
	TEC	500	1,259						1,759
	TPC	1,000	4,759						5,759
FY 2020	OPC	500	3,500	0					4,000
	TEC	500	1,259	6,792					8,551
	TPC	1,000	4,759	6,792					12,551
FY 2022	OPC	500	3,500	0	0	0		TBD	TBD
	TEC	500	1,259	6,792	6,500	8,999		TBD	TBD
	TPC	1,000	4,759	6,792	6,500	8,999		TBD	TBD
FY 2023	OPC	500	3,500	0	0	0	0	TBD	TBD
	TEC	500	1,259	6,792	6,500	8,999	25,568	TBD	TBD

	TPC	1,000	4,759	6,792	6,500	8,999	25,568	TBD	TBD
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4. Related Operations and Maintenance Funding Requirements

Start of Operation or Beneficial Occupancy (fiscal quarter or date)	TBD
Expected Useful Life (number of years)	TBD
Expected Future Start of D&D	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

5. D&D Information

The new area being constructed in this project is replacing existing facilities; however, the costs of decommissioning and decontamination of the facilities that are being replaced are not included in the costs of this construction project.

Once the Savannah River Site Operations Center and Emergency Operations Center are relocated, the existing facility will be available for decommissioning and decontamination.

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

6. Acquisition Approach

A project execution alternative on which to complete a conceptual design was selected during FY 2018 by the Project Management Executive based on the Independent Analysis of Alternatives completed. The approved conceptual design package will be the basis for the Final Design. DOE will use the contractor to develop Final Design and will make a determination prior to Critical Decision-2 on the acquisition path for construction. The acquisition approach will be in alignment with the Acquisition Strategy approved at Critical Decision-1. The Acquisition Strategy reflects an expectation that the project will be designed and constructed as a firm fixed price contract in combination with certain activities being conducted by the SRS M&O contractor. SRS is using a design-bid-build approach to project construction. The Acquisition Strategy will be revisited and updated as part of Critical Decision -2.

**19-D-701, SR Security System Replacement Project
Savannah River Site, Aiken, South Carolina
Project is for Design and Construction**

1. Summary, Significant Changes and Schedule and Cost History

Summary

This project was originally executed as an operating expense funded project to replace the existing aging and at-risk security system at the Savannah River Site Category I and II nuclear facilities and the balance of the site where Electronic Safeguards and Security is utilized. Beginning in FY 2019, during execution of Phase I final design, Congress requested that the Total Estimated Cost of this project be appropriated in a capital Line Item construction account. This data sheet includes a full accounting of the total project cost expended in prior years, including the initial \$15M in operating expense cost funding (PBS 20) prior to FY 2019.

The FY 2023 request for the Savannah River Site Security System Replacement is \$5,000,000 to be used for K Area Argus Subproject construction.

A Federal Project Director Level 2 has been assigned to this project.

The most recent DOE Order 413.3B milestone approved for the project is Critical Decision 1, which was approved on June 28, 2016, with a cost range of \$49,423,000 to \$91,470,000 and a Critical Decision 4 range of FY 2022 to FY 2028.

This project is tailored, as allowed by DOE Order 413.3B, to be managed as four distinct subprojects within the overall cost range established at Critical Decision 1. Each of four subprojects will have their own baseline, total project cost, and independent Critical Decision 2, 3, and 4 approvals. The final Critical Decision 4 approval will constitute project completion.

The first subproject, H Area ARGUS, received combined Critical Decision 2 and 3 approvals on May 29, 2018 with a Total Project Cost of \$17.9M. CD-4 for this subproject was officially approved on May 12, 2020. The second subproject, K Area ARGUS, is actively developing final design and has a forecast for Critical Decision 2/3 approval of FY 2022. L Area Argus and the SRNL/General Site Argus subprojects will be executed as described below.

Significant Changes

This Construction Project Data Sheet is an update of the FY 2022 Construction Project Data Sheet and does not include a new start for the budget year.

Critical Milestone History

Overall Project 19-D-701

(Fiscal Quarter or Date)

Fiscal Year	CD-0	Conceptual Design Complete	CD-1	CD-2	Final Design Complete	CD-3A	CD-3	D&D Complete	CD-4
FY 2019	8/26/2015	8/08/2016	8/08/2016	TBD	TBD	N/A	TBD	N/A	TBD
FY 2020	8/26/2015	8/08/2016	8/08/2016	TBD	TBD	N/A	TBD	N/A	TBD
FY 2022	8/26/2015	8/08/2016	8/08/2016	TBD	TBD	N/A	TBD	N/A	TBD
FY 2023	8/26/2015	8/08/2016	8/08/2016	TBD	TBD	N/A	TBD	N/A	TBD

H Area Argus Subproject

(Fiscal Quarter or Date)

Fiscal Year	CD-0	Conceptual Design Complete	CD-1	CD-2	Final Design Complete	CD-3A	CD-3	D&D Complete	CD-4
FY 2019	8/26/2015	8/08/2016	8/08/2016	5/29/2018	5/29/2018	8/28/2017	5/29/2018	N/A	4/30/2020
FY 2020	8/26/2015	8/08/2016	8/08/2016	5/29/2018	5/29/2018	8/28/2017	5/29/2018	N/A	4/30/2020

K Area Argus Subproject

(Fiscal Quarter or Date)

Fiscal Year	CD-0	Conceptual Design Complete	CD-1	CD-2	Final Design Complete	CD-3A	CD-3	D&D Complete	CD-4
FY 2019	8/26/2015	8/08/2016	8/08/2016	TBD	TBD	TBD	TBD	N/A	TBD
FY 2020	8/26/2015	8/08/2016	8/08/2016	TBD	TBD	TBD	TBD	N/A	TBD
FY 2022	8/26/2015	8/08/2016	8/08/2016	4Q FY2022	4Q FY2022	4Q FY2021	4Q FY2022	N/A	TBD
FY 2023	8/26/2015	8/08/2016	8/08/2016	4Q FY2022	4Q FY2022	N/A	4Q FY2022	N/A	TBD

L Area Argus Subproject

(Fiscal Quarter or Date)

Fiscal Year	CD-0	Conceptual Design Complete	CD-1	CD-2	Final Design Complete	CD-3A	CD-3	D&D Complete	CD-4
FY 2019	8/26/2015	8/08/2016	8/08/2016	TBD	TBD	TBD	TBD	N/A	TBD
FY 2020	8/26/2015	8/08/2016	8/08/2016	TBD	TBD	TBD	TBD	N/A	TBD
FY 2022	8/26/2015	8/08/2016	8/08/2016	TBD	TBD	TBD	TBD	N/A	TBD
FY 2023	8/26/2015	8/08/2016	8/08/2016	TBD	TBD	TBD	TBD	N/A	TBD

Savannah River National Laboratory/General Site Subproject

(Fiscal Quarter or Date)

Fiscal Year	CD-0	Conceptual Design Complete	CD-1	CD-2	Final Design Complete	CD-3A	CD-3	D&D Complete	CD-4
FY 2019	8/26/2015	8/08/2016	8/08/2016	TBD	TBD	TBD	TBD	N/A	TBD
FY 2020	8/26/2015	8/08/2016	8/08/2016	TBD	TBD	TBD	TBD	N/A	TBD
FY 2022	8/26/2015	8/08/2016	8/08/2016	TBD	TBD	TBD	TBD	N/A	TBD
FY 2023	8/26/2015	8/08/2016	8/08/2016	TBD	TBD	TBD	TBD	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 Project Performance Baseline

CD-3 – Approve Start of Construction

Final Design Complete – Estimated/Actual date the project design will be /was completed

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

2. Project Cost History

Overall Project 19-D-701

Fiscal Year	OPEX, Total	TEC, Design	TEC, Construction	TEC, Total	OPC Except D&D	OPC, D&D	OPC, Total	TPC
FY 2019	15,000	TBD	TBD	TBD	TBD	N/A	TBD	TBD
FY 2020	15,000	TBD	TBD	TBD	TBD	N/A	TBD	TBD
FY 2022	15,000	2,829	TBD	TBD	TBD	N/A	TBD	TBD
FY 2023	15,000	TBD	TBD	TBD	TBD	N/A	TBD	TBD

H Area Subproject

Fiscal Year	OPEX, Total	TEC, Design	TEC, Construction	TEC, Total	OPC Except D&D	OPC, D&D	OPC, Total	TPC
FY 2019	15,000	0	2,937	2,937	0	N/A	0	17,937*
FY 2020	15,000	0	2,937	2,937	0	N/A	0	17,937*

*The total project cost for the H Area Subproject is \$17,937,000 which includes \$15,000,000 of operating expense cost (PBS 20) costs. These costs supported H Area execution prior to the project’s Line Item status, which was directed in FY 2019.

K Area Subproject

Fiscal Year	TEC, Design	TEC, Construction	TEC, Total	OPC Except D&D	OPC, D&D	OPC, Total	TPC
FY 2019	TBD	TBD	TBD	TBD	N/A	TBD	TBD
FY 2020	TBD	TBD	TBD	TBD	N/A	TBD	TBD
FY 2022	9,033	TBD	TBD	TBD	N/A	TBD	TBD
FY 2023	9,033	TBD	TBD	TBD	N/A	TBD	TBD

L Area Subproject

Fiscal Year	TEC, Design	TEC, Construction	TEC, Total	OPC Except D&D	OPC, D&D	OPC, Total	TPC
FY 2019	TBD	TBD	TBD	TBD	N/A	TBD	TBD
FY 2020	TBD	TBD	TBD	TBD	N/A	TBD	TBD
FY 2022	TBD	TBD	TBD	TBD	N/A	TBD	TBD
FY 2023	TBD	TBD	TBD	TBD	N/A	TBD	TBD

SRNL / General Site Subproject

Fiscal Year	TEC, Design	TEC, Construction	TEC, Total	OPC Except D&D	OPC, D&D	OPC, Total	TPC
FY 2019	TBD	TBD	TBD	TBD	N/A	TBD	TBD
FY 2020	TBD	TBD	TBD	TBD	N/A	TBD	TBD
FY 2022	TBD	TBD	TBD	TBD	N/A	TBD	TBD
FY 2023	TBD	TBD	TBD	TBD	N/A	TBD	TBD

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

3. Project Scope and Justification

Scope

The scope of this project is to replace the existing Electronic Safeguards and Security system with the DOE Standard ARGUS System at Savannah River Site in the following areas: H-Area, K-Area, L-Area, and the remaining portion of the Savannah River National Laboratory and general site areas.

Justification

The Savannah River Site Electronic Safeguards and Security system has exceeded its useful life. Field installation of the Electronic Safeguards and Security began in the late-1980's with the first subsystem operational in H-Area (December 1991). The last Electronic Safeguards and Security area to become operational was F-Area in 1994. Since then, a number of major upgrades have been implemented to improve the system and address issues with obsolescence. Although upgrades have been made, Electronic Safeguards and Security components, including those installed during the last upgrade, are no longer commercially available, making it difficult to maintain Electronic Safeguards and Security reliability. The existing Electronic Safeguards and Security system has experienced an increased failure rate, which has resulted in additional costly compensatory measures, including use of additional protective force resources, increased maintenance, and increased overtime costs.

The risk of catastrophic failure of the Electronic Safeguards and Security system poses critical operational risks to H-Area, L-Area, K-Area, and Savannah River National Laboratory. If there is an Area-wide failure of Electronic Safeguards and Security, additional security forces would need to be deployed and additional compensatory measures would need to be implemented that would severely slow down or stop operations in the Cat I/II facilities.

Key Performance Parameters

The Key Performance Parameters represent the acceptable performance that the project must achieve. Achievement of the Key Performance Parameters will be a prerequisite for approval of Critical Decision -4, Project Completion.

Performance Measure	Threshold	Objective
Replacement	Replace the vintage Electronic Safeguards and Security systems in H-Area, L-Area, K-Area and the SRNL and general site areas with the ARGUS security system that has been adopted by the Department as meeting the Safeguards and Security Alarm Management and Control System Standard.	Replace the current, obsolete Electronic Safeguards and SecurityE3S security system with the DOE Standard system, ARGUS.
Installation	Integrate crossover or tie-ins during the replacement of the Electronic Safeguards and Security systems with the associated Central Alarm Stations.	Complete installation with appropriate integration with other systems and facilities with minimal impacts of cost and schedule to other programs and missions.
Installation	Minimize interruptions and impact to Category II facility missions during installation, system tie-ins and operations of H-Area, L-Area, and K-Area and designated sections of Savannah River National Laboratory and the general site.	Project will not disrupt Category II facility operations schedules.

4. Project Cost and Schedule

Financial Schedule

Funding is appropriated at the Overall Project level and is allocated to the subprojects as indicated in the tables below.

H Area Subproject

(Dollars in thousands)

Budget Authority (Appropriations)	Obligations	Costs
--------------------------------------	-------------	-------

Total Estimated Cost (TEC)

Design

FY 2019	0	0	0
FY 2020	0	0	0
FY 2021	0	0	0
FY 2022	0	0	0
Total, Design	0	0	0

Construction

FY 2019	2,937	2,937	998
FY 2020	0	0	1,123
FY 2021	0	0	0
FY 2022	0	0	0
Total, Construction	2,937	2,937	2,121

**Environmental Management/
Savannah River/19-D-701 SR Security
System Replacement Project**

FY 2023 Congressional Budget Justification

	Budget Authority (Appropriations)	Obligations	Costs
TEC			
FY 2019	2,937	2,937	998
FY 2020	0	0	1,123
FY 2021	0	0	0
Total, TEC	2,937	2,937	2,121
OPC			
FY 2019	0	0	0
FY 2020	0	0	0
FY 2021	0	0	0
Total, OPC	0	0	0
OPEX^a			
FY 2015	10,000	10,000	137
FY 2016	0	0	1,234
FY 2017	0	0	2,916
FY 2018	5,000	5,000	1,887
FY 2019	0	0	5,771
FY 2020	0	0	3,066
FY 2021	0	0	0
Total, OPEX*	15,000*	15,000*	15,011
Total Project Cost (TPC)			
FY 2015 ^a	10,000	10,000	137
FY 2016	0	0	1,234
FY 2017	0	0	2,916
FY 2018 ^a	5,000	5,000	1,887
FY 2019	2,937	2,937	6,769
FY 2020	0	0	4,189
FY 2021	0	0	0
Total, TPC	17,937	17,937	17,132

Note: Funds for long-lead equipment may be requested prior to project baseline validation if approved by the Project Management Executive.

^a Funded by PBS SR-0020

* \$15M operating expense costs funding was originally provided in 2015 (\$10M) and 2018 (\$5M) as part of a PBS 20 operating expense funded project. The project was later determined by Congress to be a Line Item construction project in FY19 and all funding thereafter is either other project cost or total estimated cost. Most of the H Area Subproject was funded through PBS 20 operating expense costs.

K Area Subproject

(Dollars in thousands)

	Budget Authority (Appropriations)	Obligations	Costs
Total Estimated Cost (TEC)			
Design			
FY 2019	7,063	7,063	715
FY 2020	4,525	4,525	3,591
FY 2021	0	0	5,405
FY 2022	0	0	1,877
FY 2023	0	0	0
Outyears	0	0	0
Total, Design	11,588	11,588	11,588
Construction			
FY 2019	0	0	0
FY 2020	0	0	0
FY 2021	1,000	1,000	0
FY 2022	5,000	5,000	1,000
FY 2023	5,000	5,000	5,000
Outyears	TBD	TBD	TBD
Total, Construction	TBD	TBD	TBD
TEC			
FY 2019	7,063	7,063	715
FY 2020	4,525	4,525	3,591
FY 2021	1,000	1,000	5,405
FY 2022	5,000	5,000	1,000
FY 2023	5,000	5,000	5,000
Outyears	TBD	TBD	TBD
Total, TEC	TBD	TBD	TBD

Budget Authority (Appropriations)	Obligations	Costs
--------------------------------------	-------------	-------

OPC

FY 2019	0	0	0
FY 2020	0	0	0
FY 2021	0	0	0
FY 2022	0	0	0
FY 2023	0	0	0
Outyears	TBD	TBD	TBD
Total, OPC	TBD	TBD	TBD

Total Project Cost (TPC)

FY 2019	7,063	7,063	715
FY 2020	4,525	4,525	3,591
FY 2021	1,000	1,000	5,405
FY 2022	5,000	5,000	1,000
FY 2023	5,000	5,000	5,000
Outyears	TBD	TBD	TBD
Total, TPC	TBD	TBD	TBD

Note: Funds for long-lead equipment may be requested prior to project baseline validation if approved by the Project Management Executive.

L Area Subproject

(Dollars in thousands)

Budget Authority (Appropriations)	Obligations	Costs
--------------------------------------	-------------	-------

Total Estimated Cost (TEC)

Design

FY 2019	0	0	0
FY 2020	0	0	0
FY 2021	0	0	0
FY 2022	0	0	0
FY 2023	0	0	0
Outyears	TBD	TBD	TBD
Total, Design	TBD	TBD	TBD

Construction

FY 2019	0	0	0
FY 2020	0	0	0
FY 2021	0	0	0
FY 2022	0	0	0
FY 2023	0	0	0
Outyears	TBD	TBD	TBD
Total, Construction	TBD	TBD	TBD

TEC

FY 2019	0	0	0
FY 2020	0	0	0
FY 2021	0	0	0
FY 2022	0	0	0
FY 2023	0	0	0
Outyears	TBD	TBD	TBD
Total, TEC	TBD	TBD	TBD

Budget Authority (Appropriations)	Obligations	Costs
--------------------------------------	-------------	-------

OPC

FY 2019	0	0	0
FY 2020	0	0	0
FY 2021	0	0	0
FY 2022	0	0	0
FY 2023	0	0	0
Outyears	TBD	TBD	TBD
Total, OPC	TBD	TBD	TBD

Total Project Cost (TPC)

FY 2019	0	0	0
FY 2020	0	0	0
FY 2021	0	0	0
FY 2022	0	0	0
FY 2023	0	0	0
Outyears	TBD	TBD	TBD
Total, TPC	TBD	TBD	TBD

Note: Funds for long-lead equipment may be requested prior to project baseline validation if approved by the Project Management Executive.

SRNL/General Site Subproject

(Dollars in thousands)

	Budget Authority (Appropriations)	Obligations	Costs
Total Estimated Cost (TEC)			
Design			
FY 2019	0	0	0
FY 2020	0	0	0
FY 2021	0	0	0
FY 2022	0	0	0
FY 2023	0	0	0
Outyears	TBD	TBD	TBD
Total, Design	TBD	TBD	TBD
Construction			
FY 2019	0	0	0
FY 2020	0	0	0
FY 2021	0	0	0
FY 2022	0	0	0
FY 2023	0	0	0
Outyears	TBD	TBD	TBD
Total, Construction	TBD	TBD	TBD
TEC			
FY 2019	0	0	0
FY 2020	0	0	0
FY 2021	0	0	0
FY 2022	0	0	0
FY 2023	0	0	0
Outyears	TBD	TBD	TBD
Total, TEC	TBD	TBD	TBD

OPC

	Budget Authority (Appropriations)	Obligations	Costs
FY 2019	0	0	0
FY 2020	0	0	0
FY 2021	0	0	0
FY 2022	0	0	0
FY 2023	0	0	0
Outyears	TBD	TBD	TBD
Total, OPC	TBD	TBD	TBD

Total Project Cost (TPC)

FY 2019	0	0	0
FY 2020	0	0	0
FY 2021	0	0	0
FY 2022	0	0	0
FY 2023	0	0	0
Outyears	TBD	TBD	TBD
Total, TPC	TBD	TBD	TBD

Note: Funds for long-lead equipment may be requested prior to project baseline validation if approved by the Project Management Executive.

Overall Project (19-D-701)

(Dollars in thousands)

Budget Authority (Appropriations)	Obligations	Costs
--------------------------------------	-------------	-------

Total Estimated Cost (TEC)

Design

FY 2019	7,063	7,063	715
FY 2020	4,525	4,525	3,591
FY 2021	0	0	5,405
FY 2022	0	0	1,877
FY 2023	0	0	0
Outyears	TBD	TBD	TBD
Total, Design	TBD	TBD	TBD

Construction

FY 2019	2,937	2,937	998
FY 2020	0	0	1,123
FY 2021	1,000	1,000	0
FY 2022	5,000	5,000	1,000
FY 2023	5,000	5,000	5,000
Outyears	TBD	TBD	TBD
Total, Construction	TBD	TBD	TBD

TEC

FY 2019	10,000	10,000	1,713
FY 2020	4,525	4,525	4,714
FY 2021	1,000	1,000	5,405
FY 2022	5,000	5,000	1,000
FY 2023	5,000	5,000	5,000
Outyears	TBD	TBD	TBD
Total, TEC	TBD	TBD	TBD

	Budget Authority (Appropriations)	Obligations	Costs
--	--------------------------------------	-------------	-------

OPC

FY 2019	0	0	0
FY 2020	0	0	0
FY 2021	0	0	0
FY 2022	0	0	0
FY 2023	0	0	0
Outyears	TBD	TBD	TBD
Total, OPC	TBD	TBD	TBD

OPEXa

FY 2015	10,000	10,000	137
FY 2016	0	0	1,234
FY 2017	0	0	2,916
FY 2018	5,000	5,000	1,887
FY 2019	0	0	5,771
FY 2020	0	0	3,066
FY 2021	0	0	0
Outyears	0	0	0
Total, OPEX	15,000	15,000	15,011

Total Project Cost (TPC)

FY 2015	10,000	10,000	137
FY 2016	0	0	1,234
FY 2017	0	0	2,916
FY 2018	5,000	5,000	1,887
FY 2019	10,000	10,000	7,484
FY 2020	4,525	4,525	7,780
FY 2021	1,000	1,000	5,405
FY 2022	5,000	5,000	1,000

FY 2023	5,000	5,000	5,000
Outyears	TBD	TBD	TBD
Total, TPC	TBD	TBD	TBD

**Difference from TPC due to rounding

5. Details of Project Cost Estimate

H Area Subproject

(dollars in thousands)

Current Total Estimate	Previous Total Estimate	Original Validated Baseline
------------------------	-------------------------	-----------------------------

Total Estimated Cost (TEC) ^a

Design			
Design	TBD	TBD	TBD
Contingency	TBD	TBD	TBD
Total, Design	TBD	TBD	TBD
Contingency	TBD	TBD	TBD
Construction	TBD	TBD	TBD
Site Preparation	TBD	TBD	TBD
Equipment	TBD	TBD	TBD
Other Construction	TBD	TBD	TBD
Contingency	TBD	TBD	TBD
Total, Construction	TBD	TBD	TBD
Contingency	TBD	TBD	TBD
Total, TEC	TBD	TBD	TBD
Contingency, TEC	TBD	TBD	TBD

Other Project Cost (OPC)

OPC except D&D			
Conceptual Planning	TBD	TBD	TBD
Conceptual Design	TBD	TBD	TBD
Start-Up	TBD	TBD	TBD
Contingency	TBD	TBD	TBD
Other OPC	TBD	TBD	TBD
Total, OPC	TBD	TBD	TBD
Contingency, OPC	TBD	TBD	TBD

Operating Expense Costs (OPEX) H Area Subproject Only ^b

Conceptual Planning	221	275	221
Environmental Management/ Savannah River/19-D-701 SR Security System Replacement Project			

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Conceptual Design	1,234	1,924	1,234
Start-Up	3,473	412	3,473
Contingency	232	137	232
Design	1,753	5,063	1,753
Design Contingency	0	984	0
Other Project Costs	926	0	926
Site Preparation	0	0	0
Equipment	230	213	230
Other Construction ^a	4,074	11,489	4,074
Construction Contingency	2,857	2,943	2,857
Total, OPEX	15,000	23,440	15,000
Total H Area, TPC	17,937	23,440	17,937
Total H Area Contingency	3,089	4,064	3,089

a H Area was provided \$15M in OPEX funding to complete \$18M TPC baseline scope. \$2.937M TEC funding will be used from FY 2019 line item funding to execute construction scope for H Area and remaining prior year OPEX funding will be used to complete installation and close out the H Area Argus subproject.

b OPEX funding from PBS SR-0020 in prior years will be used to complete installation and close out the H Area Argus subproject. OPEX funding of \$15M from PBS SR-0020 was used to fund the H Area Argus subproject baseline from FY15 – FY18. FY 2019 TEC of \$2.937M TEC was obligated to complete H Area construction scope. No further funding requests will be needed to complete the H Area subproject.

K Area Subproject

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC) ^a			
Design			
Design	TBD	TBD	TBD
Contingency	TBD	TBD	TBD
Total, Design	TBD	TBD	TBD
Contingency	TBD	TBD	TBD
Construction	TBD	TBD	
Site Preparation	TBD	TBD	TBD
Equipment	TBD	TBD	TBD
Other Construction	TBD	TBD	TBD
Contingency	TBD	TBD	TBD
Total, Construction	TBD	TBD	TBD
Contingency	TBD	TBD	TBD
Total, TEC	TBD	TBD	TBD
Contingency, TEC	TBD	TBD	TBD

(dollars in thousands)

Current Total Estimate	Previous Total Estimate	Original Validated Baseline
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Other Project Cost (OPC)

OPC except D&D

Conceptual Planning

Conceptual Design

Start-Up

Contingency

Other OPC

TBD TBD TBD

TBD TBD TBD

TBD TBD TBD

TBD TBD TBD

TBD TBD TBD

TBD TBD TBD

Total, OPC

TBD TBD TBD

Contingency, OPC

TBD TBD TBD

TBD TBD TBD

TBD TBD TBD

Total K Area, TPC

TBD TBD TBD

Total K Area, Contingency

TBD TBD TBD

L Area Subproject

(dollars in thousands)

Current Total Estimate	Previous Total Estimate	Original Validated Baseline
------------------------	-------------------------	-----------------------------

Total Estimated Cost (TEC) ^a

Design

Design

Contingency

Total, Design

Contingency

TBD TBD TBD

TBD TBD TBD

TBD TBD TBD

TBD TBD TBD

Construction

Site Preparation

Equipment

Other Construction

Contingency

Total, Construction

Contingency

TBD TBD TBD

TBD TBD TBD

TBD TBD TBD

TBD TBD TBD

TBD TBD TBD

TBD TBD TBD

Total, TEC

TBD TBD TBD

Contingency, TEC

TBD TBD TBD

Other Project Cost (OPC)

OPC except D&D

Conceptual Planning

Conceptual Design

TBD TBD TBD

TBD TBD TBD

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Start-Up	TBD	TBD	TBD
Contingency	TBD	TBD	TBD
Other OPC	TBD	TBD	TBD
Total, OPC	TBD	TBD	TBD
Contingency, OPC	TBD	TBD	TBD
Total L Area, TPC	TBD	N/A	TBD
Total L Area, Contingency	TBD	N/A	TBD

SRNL/General Site Subproject

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC) ^a			
Design			
Design	TBD	TBD	TBD
Contingency	TBD	TBD	TBD
Total, Design	TBD	TBD	TBD
Contingency	TBD	TBD	TBD
Construction			
Site Preparation	TBD	TBD	TBD
Equipment	TBD	TBD	TBD
Other Construction	TBD	TBD	TBD
Contingency	TBD	TBD	TBD
Total, Construction	TBD	TBD	TBD
Contingency	TBD	TBD	TBD
Total, TEC	TBD	TBD	TBD
Contingency, TEC	TBD	TBD	TBD
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning	TBD	TBD	TBD
Conceptual Design	TBD	TBD	TBD
Start-Up	TBD	TBD	TBD
Contingency	TBD	TBD	TBD
Other OPC	TBD	TBD	TBD
Total, OPC	TBD	TBD	TBD
Contingency, OPC	TBD	TBD	TBD

(dollars in thousands)

Current Total Estimate	Previous Total Estimate	Original Validated Baseline
------------------------	-------------------------	-----------------------------

Total SRNL/Gen Site, TPC
Total SRNL/Gen Site, Contingency

TBD	TBD	TBD
TBD	TBD	TBD

Overall Project (19-D-701)

(dollars in thousands)

Current Total Estimate	Previous Total Estimate	Original Validated Baseline
------------------------	-------------------------	-----------------------------

Total Estimated Cost (TEC) ^a

Design
 Design
 Contingency
 Total, Design
 Contingency

TBD	N/A	TBD
TBD	N/A	TBD
TBD	N/A	TBD
TBD	N/A	TBD

Construction
 Site Preparation
 Equipment
 Other Construction
 Contingency
 Total, Construction
 Contingency

TBD	N/A	TBD
TBD	N/A	TBD
TBD	N/A	TBD
TBD	N/A	TBD
TBD	N/A	TBD
TBD	N/A	TBD

Total, TEC
Contingency, TEC

TBD	N/A	TBD
TBD	N/A	TBD

Other Project Cost (OPC)

OPC except D&D
 Conceptual Planning
 Conceptual Design
 Start-Up
 Contingency
 Other OPC

TBD	N/A	TBD
TBD	N/A	TBD
TBD	N/A	TBD
TBD	N/A	TBD
TBD	N/A	TBD

Total, OPC
Contingency, OPC

TBD	N/A	TBD
TBD	N/A	TBD

Operating Expense Costs (OPEX) H Area Subproject Only ^b

Conceptual Planning
 Conceptual Design

221	275	221
1,234	1,924	1,234

**Environmental Management/
 Savannah River/19-D-701 SR Security
 System Replacement Project**

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Start-Up	3,473	412	3,473
Contingency	232	137	232
Design	1,753	5,063	1,753
Design Contingency	0	984	0
Other Project Costs	926	0	926
Site Preparation	0	0	0
Equipment	230	213	230
Other Construction ^a	4,074	11,489	4,074
Construction Contingency	2,857	2,943	2,857
Total, OPEX	15,000	23,440	15,000

6. Schedule of Appropriation Requests (\$K)

Request	Type	Prior Years	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	Outyears	Total
FY 2019	TEC	0	10,000					TBD	TBD
	OPC	0	0					TBD	TBD
	OPE X	15,000							15,000
	TPC	15,000	10,000					TBD	TBD
FY 2020	TEC	0	10,000	4,525				TBD	TBD
	OPC	0						TBD	TBD
	OPE X	15,000							15,000
	TPC	15,000	10,000	4,525				TBD	TBD
FY 2021	TEC	0	10,000	4,525	1,000			TBD	TBD
	OPC	0	0	0				TBD	TBD
	OPE X	15,000	0	0	0				15,000
	TPC	15,000	10,000	4,525	1,000			TBD	TBD
FY 2022	TEC	0	10,000	4,525	1,000	1,000		TBD	TBD
	OPC	0	0	0	0	0		TBD	TBD
	OPE X	15,000	0	0	0	0			15,000
	TPC	15,000	10,000	4,525	1,000	1,000		TBD	TBD
FY 2023	TEC	0	10,000	4,525	1,000	5,000	5,000	TBD	TBD
	OPC	0	0	0	0	0	0	TBD	TBD
	OPE X	15,000	0	0	0	0	0	TBD	TBD
	TPC	15,000	10,000	4,525	1,000	5,000	5,000	TBD	TBD

7. Related Operations and Maintenance Funding Requirements

Start of Operation or Beneficial Occupancy (fiscal quarter or date)
 Expected Useful Life (number of years)
 Expected Future Start of D&D

2Q FY 2029
 20 Years
 N/A

**Environmental Management/
 Savannah River/19-D-701 SR Security
 System Replacement Project**

FY 2023 Congressional Budget Justification

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

8. D&D Information

The EM ARGUS project is a one-for-one replacement project of the EM Security System associated with the Cat I/II Nuclear Facilities at SRS. There are no plans in place to D&D the system. D&D will occur commensurate with the D&D schedule for the facilities in which the system is installed.

9. Acquisition Approach

The site Management and Operations contractor was determined to be the best contract alternative. The Management and Operations has security cleared personnel already trained and qualified to perform work in the various areas and facilities associated with the project, the ability to use resources interchangeably between areas, and the ability to “turn off” the resources if funding issues arise without losing the resources by having to renegotiate or sever a fixed price contract. The Management and Operations would simply redeploy the resources within the Management and Operations entity. The Management and Operations has also successfully installed the ARGUS system in other areas on site.

**20-D-401, Saltstone Disposal Units 10-12
Savannah River Site, Aiken, SC
Project is for Design and Construction**

1. Summary, Significant Changes, and Schedule and Cost History

Summary

The FY 2023 Request for the Saltstone Disposal Units 10-12 project is \$41,918,000 (includes \$37,668,000 of Design and Construction costs and \$4,250,000 of Other Project Cost funds).

The most recent DOE Order 413.3B approved Critical Decision is Critical Decision 2/3, which was approved on September 13, 2021, with a Total Project Cost of \$496,000,000 and Critical Decision 4 date of July 2030.

Saltstone Disposal Units 10-12 will be designed and constructed based on successful completion of Saltstone Disposal Unit 6, and incorporation of Lessons Learned. To facilitate a streamlined approach, approval of Approve Project Performance Baseline (Critical Decision 2) and Approve Start of Construction (Critical Decision 3) will be combined. Saltstone Disposal Units 10-12 will be designed and constructed as close to parallel as feasible to take advantage of efficiencies in mobilization and use of resources.

Significant Changes

This Construction Project Data Sheet is an update of the FY 2022 Congressional Construction Project Data Sheet and does not include a new start for the budget year.

In accordance with DOE Order 413.3B, the Federal Project Director at the appropriate level has been assigned.

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 2020	9/11/2017	12/21/2018	12/21/2018	TBD	TBD	TBD	N/A	TBD
FY 2022	9/11/2017	12/21/2018	12/21/2018	TBD	TBD	TBD	N/A	TBD
FY 2023	9/11/2017	12/21/2018	12/21/2018	9/13/2021	4QFY29	9/13/2021	N/A	4QFY30

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

CD-3 – Approve Start of Construction

Final Design Complete – Estimated/Actual date the project design will be /was completed

D&D Complete – Completion of D&D work (see Section 5)

CD-4 – Approve Start of Operations or Project Completion

PB – Indicates the Performance Baseline

* D&D activities not part of this Project

Project Cost History

(\$ in thousands)

	TEC, Design	TEC, Construction	TEC, Total	OPC Except D&D	OPC, D&D	OPC, Total	TPC
FY 2020	TBD	TBD	TBD	TBD	N/A	TBD	TBD
FY 2022	TBD	TBD	TBD	TBD	N/A	TBD	TBD
FY 2023	11,860	441,340	451,507	44,493	N/A	44,493	496,000

2. 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 Units 10-12 are 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 Units 10-12 project will construct three (3) 375 feet in diameter, 43 feet high, 32,000,000 gallon cylindrical large tank disposal cells based on American Water Works Association design. This will include all infrastructure 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 cleanup 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 need date for all Saltstone Disposal Units is 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., funding fluctuations, changes in technology, facility availability, etc.).

The project contingency is based upon previous experience and risks associated with the successful construction of Saltstone Disposal Unit 6 and recently completed Saltstone Disposal Unit 7, which adapted 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 Order 413.3B, Program and Project Management for the Acquisition of Capital Assets.

Key Performance Parameters

The Threshold Key Performance Parameters, represent the acceptable performance that the project must achieve. Achievement of the Threshold Key Performance Parameters will be a prerequisite for approval of Critical Decision 4, Project Completion. The Objective Key Performance Parameters represent the desired project performance.

Performance Measure	Threshold	Objective
Capacity	Provide saltstone grout containment capacity of no less than 30,000,000 gallons.	
Throughput	Provide infrastructure capable of delivering saltstone grout at 100 gallons per minute minimum.	
Leak Detection	Install a leak detection system in accordance with the Z-Area Industrial Solid Waste Landfill Permit requirements.	

3. Project Cost and Schedule

Financial Schedule

(dollars in thousands)

	Appropriations	Obligations	Costs
Design			
FY 2020	500	500	48
FY 2021	562	562	473
FY 2022	9,105	9,105	9,646
FY 2023	0	0	0
FY 2024	0	0	0
FY 2025	0	0	0
FY 2026	0	0	0
FY 2027	0	0	0
Outyears	0	0	0
Total, Design	10,167	10,167	10,167
Construction			
FY 2020	0	0	0
FY 2021	0	0	0
FY 2022	8,702	8,702	356
FY 2023	37,668	37,668	40,000
FY 2024	52,142	52,142	52,142
FY 2025	80,790	80,790	80,790
FY 2026	70,388	70,388	70,388
FY 2027	77,980	77,980	77,780
Out years	113,670	113,670	119,884
Total, Construction	441,340	441,340	441,340
TEC			
FY 2020	500	500	48

(dollars in thousands)

	Appropriations	Obligations	Costs
FY 2021	562	562	473
FY 2022	17,807	17,807	10,002
FY 2023	37,668	37,668	40,000
FY 2024	52,142	52,142	52,142
FY 2025	80,790	80,790	80,790
FY 2026	70,388	70,388	70,388
FY 2027	77,980	77,980	77,780
Outyears	113,670	113,670	119,884
	451,507	451,507	451,507
Total, TEC			
OPC			
FY 2018	0	0	218
FY 2019	0	0	1,191
FY 2020	400	400	657
FY 2021	950	950	1,439
FY 2022	4,400	4,400	4,400
FY 2023	4,250	4,250	4,250
FY 2024	4,383	4,383	4,383
FY 2025	6,149	6,149	6,149
FY 2026	5,997	5,997	5,997
FY 2027	6,387	6,387	6,387
Outyears	11,577	11,577	9,422
	44,493	44,493	44,493
Total, OPC			
Total Project Cost (TPC)			
FY 2018	0	0	218
FY 2019	0	0	1,191
FY 2020	900	900	705
FY 2021	1,512	1,512	1,912
FY 2022	23,900	23,900	16,095
FY 2023	41,918	41,918	44,250
FY 2024	56,525	56,525	56,525
FY 2025	86,939	86,939	86,939
FY 2026	76,385	76,385	76,385
FY 2027	84,367	84,367	84,167
Outyears	125,247	125,247	129,306
	496,000	496,000	496,000
Total, TPC			

Details of Project Cost Estimate

	(dollars in thousands)		
	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design			
Design	9,381	9,381	9,381
Contingency	786	786	786
Total, Design	10,167	10,167	10,167
Construction			
Site Preparation			
Equipment			
Other Construction	384,774	384,774	384,774
Contingency	27,354	27,354	27,354
Fee	29,213	29,213	29,213
Total, Construction	441,340	441,340	441,340
Total, TEC	451,507	451,507	451,507
Contingency, TEC	28,140	28,140	28,140
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning			
Conceptual Design	43,638	43,638	43,638
Start-up			
Contingency	855	855	855
Other OPC			
Total, OPC except D&D	44,493	44,493	44,493
Total, OPC	44,493	44,493	44,493
Total, Contingency	855	855	855
Total, TPC	496,000	496,000	496,000
Total, Contingency	28,995	28,995	28,995

Schedule of Appropriation Requests

Request		FY 2020	FY 2021	FY 2022	FY 2023	Outyears	Total
FY 2020	TEC	500				TBD	TBD
	OPC	500				TBD	TBD
	TPC	1,000				TBD	TBD

FY 2022	TEC	500	562	19,500		TBD	TBD
	OPC	500	950	4,400		TBD	TBD
	TPC	1,000	1,512	23,900		TBD	TBD
FY 2023	TEC	500	562	19,500	37,668	393,277	451,507
	OPC	500	950	4,400	4,250	34,393	44,493
	TPC	1,000	1,512	23,900	41,918	427,670	496,000

4. Related Operations and Maintenance Funding Requirements

Start of Operation or Beneficial Occupancy – SDU 10	May-2027
Start of Operation or Beneficial Occupancy – SDU 11	Dec-2028
Start of Operation or Beneficial Occupancy – SDU 12	Aug-2030
Expected Useful Life (number of years) (per Saltstone Disposal Unit)	5
Expected Future Start of D&D	N/A

Related Funding Requirements

(Dollars in Thousands)

COST ESTIMATED PER SALTSTONE DISPOSAL UNIT	Annual Costs		Life Cycle Costs	
	Current Total Estimate	Previous Total Estimate	Current Total Estimate	Previous Total Estimate
Operations	100		500	
Maintenance	50		150	
Total, Operations & Maintenance	150		750	

5. D&D Information

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.

6. Acquisition Approach

Currently, the approach assumes that the liquid waste Prime Contractor will be used to create the design, provide engineering and project management support, or other services required to execute the project. This project will be designed and constructed consistent with the successful execution of the Saltstone Disposal Unit 6, 7, and 8/9 projects, incorporating best practices and lessons learned.

Lawrence Livermore National Laboratory

Overview

Lawrence Livermore National Laboratory is a National Nuclear Security Administration multi-disciplinary research and development center focusing on weapons development, 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 the National Nuclear Security Administration in FY 2006. The EM-managed Lawrence Livermore National Laboratory Excess Facilities decommissioning and demolition effort commenced in 2018.

Lawrence Livermore National Laboratory Site 300 is a remote experimental testing facility which 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 (Operable Unit 5).

Long-Term Stewardship responsibility for Operable Units 1-8 was transferred to the National Nuclear Security Administration. EM's responsibility is the remaining perchlorate contamination in Building 850 groundwater and characterization and/or remedy selection, implementation for Building 865, Building 812 Firing Table and Building 812 Wastewater Outflow within Operable Unit 9. Upon completion of characterization and/or remedy selection and implementation for perchlorate contamination in Building 850 groundwater and for Building 865, these areas will be incorporated into Operable Units 5 and 8, respectively, and responsibility will be transferred to the National Nuclear Security Administration. 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 remedy selection and implementation for soil and groundwater for Building 865 (Operable Unit 8), Building 812 (Operable Unit 9 Firing Table and Wastewater Outflow), and the remaining perchlorate contamination in Building 850 (Operable Unit 5) groundwater are currently scheduled for completion by the end of FY 2031. Other cleanup work at Lawrence Livermore National Laboratory Site 300 are for site investigations, hydrogeologic studies, stakeholder liaisons and state grants payment.

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; the Comprehensive Environmental Response, Compensation and Liability Act; and the National Contingency Plan. The Federal Facility Agreement describes remedial investigations, action requirements plus a procedural framework to develop, implement, and monitor remedial actions. 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.

EM restoration work benefits at Lawrence Livermore National Laboratory Site 300 include the 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 clean up soil and groundwater using a risk-based methodology.

The 2018 Consolidated Appropriations Act, (Public Law 115-141), directed DOE to decommission and demolish the B280 Pool Type Reactor and other excess facilities at Lawrence Livermore National Laboratory. The Department annually screens excess facilities to identify the highest risks to missions, the workforce, the public, and the environment to support risk-informed decisions by senior leadership. The Department identified five of the top 10 list of the highest risk excess facilities at Lawrence Livermore National Laboratory. Continued deterioration of these facilities has increased the risks posed and has complicated the work necessary to dispose of the facilities.

Highlights of the FY 2023 Budget Request

Demolition planning efforts will continue on other National Nuclear Security Administration-owned high-risk contaminated excess facilities including Building 280 and Building 292 (Rotating Target Neutron Source Facility).

The majority of activities scheduled for FY 2023 for Site 300 support the development of remedial solutions for contamination at Building 812 (Firing Table and Wastewater Outflow), Building 850, and Building 865.

Continue stakeholder outreach and Tribal consultation on the Justice40 Initiative.

FY 2022 - FY 2023 Key Milestones/Outlook

- (December 2021) Complete Building 280 Reactor (Livermore Pool Type Reactor) Removal.
- (September 2023) Final Remedial Investigation/Feasibility Study for Building 865 part 2 – Metals in Soil.
- (March 2023) Commence Building 251 (Heavy Element Facility) demolition to slab.
- (June 2023) Commence Building 280 characterization.

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, LLC, for the operation of Lawrence Livermore National Laboratory is a Management and Operating 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 option 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 utilizes 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 Operating contract, with cleanup work typically performed by Lawrence Livermore National Security and its subcontractors. However, for the National Nuclear Security Administration-owned high-risk contaminated excess facilities, EM is using multiple contracting avenues to facilitate decommissioning and demolition. EM is partnering with the U.S. Army Corps of Engineers to accomplish the Building 280 reactor removal and demolition and issuing work authorizations under the National Nuclear Security Administration's Management and Operating contract to decommission and demolish Building 175 (Mars E-Beam Facility) and characterize Building 251. EM is also using a Nationwide Deactivation, Decommissioning and Removal Indefinite Delivery-Indefinite Quantity contract for Building 251 demolition to slab.

Strategic Management

Position the Department of Energy to meet the challenges of 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 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 are as follows:

- 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.
- 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 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted	FY 2023 Request vs FY 2021 Enacted (%)
Defense Environmental Cleanup					
NNSA Sites					
Lawrence Livermore National Laboratory					
VL-FOO-0013B-D / Solid Waste Stabilization and Disposition Support - Lawrence Livermore National Laboratory (Defense)	425	425	400	-25	-6%
VL-LLNL-0031 / Soil and Water Remediation-Lawrence Livermore National Laboratory - Site 300	1,339	1,339	1,442	+103	+8%
Subtotal, Lawrence Livermore National Laboratory	1,764	1,764	1,842	+78	+4%
LLNL Excess Facilities D&D					
CBC-LLNL-0040 / LLNL Excess Facilities D&D	35,000	35,000	12,004	-22,996	-66%
Total, NNSA Sites	36,764	36,764	13,846	-22,918	-62%

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

	FY 2021 Enacted	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted
Defense Environmental Cleanup			
NNSA Sites			
Lawrence Livermore National Laboratory			
VL-FOO-0013B-D / Solid Waste Stabilization and Disposition Support - Lawrence Livermore National Laboratory (Defense)			
• No significant change.	425	400	-25
VL-LLNL-0031 / Soil and Water Remediation-Lawrence Livermore National Laboratory - Site 300			
• The increase reflects resources needed to complete the Remedial Investigation/Feasibility Study for Building 865 part 2 – Metals in Soil.	1,339	1,442	+103
LLNL Excess Facilities D&D			
CBC-LLNL-0040 / LLNL Excess Facilities D&D			
• The decrease reflects completion of reactor removal activities at Building 280 and demolition of Building 175 to slab on grade and transition to characterization and start of Building 251 D&D and Building 175 slab and soil removal.	35,000	12,004	-22,996
Total, Lawrence Livermore National Laboratory	36,764	13,846	-22,918

Solid Waste Stabilization and Disposition Support (PBS:VL-FOO-0013B-D)

Overview

This PBS is within the Defense Environmental Cleanup appropriation.

The activities in this PBS support the EM cleanup activities at Site 300 that will be completed with build out for perchlorate in groundwater at the Building 850 firing table in Operable Unit 5; remedy selection and/or build out at Building 865 in Operable Unit 8; and remediation of contaminated soil and build out of the remedy for remediation of groundwater at the Building 812 Firing Table in Operable Unit 9. 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, the U.S. 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 the areas turned over to the National Nuclear Security Administration under Long-Term Stewardship currently projected for FY 2032.

Solid Waste Stabilization and Disposition Support - Lawrence Livermore National Laboratory (Defense) (PBS: VL-FOO-0013B-D)

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
\$425,000	\$400,000	-\$25,000
<ul style="list-style-type: none"> • Provided grants to the State of California Regional Water Quality Control Board and the California Department of Toxic Substances Control to support Comprehensive Environmental Response, Compensation, and Liability Act oversight. This funding was mandated by the Federal Facility Agreement signed by DOE, Environmental Protection Agency, and the State of California. 	<ul style="list-style-type: none"> • Provide grants to the State of California Regional Water Quality Control Board and the California Department of Toxic Substances Control to support 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. 	<ul style="list-style-type: none"> • No significant change.

Soil and Water Remediation (PBS: VL-LLNL-0031)

Overview

This PBS is 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)

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.

Waste characterization at DOE waste generator sites will be funded by their respective site and includes activities such as visual examination, real time radiography, nondestructive assay, dose to curie conversion, and flammable gas analysis. Certification of waste characterization activities of legacy transuranic waste at Savannah River Site, Oak Ridge National Laboratory, Lawrence Livermore National Laboratory, and Los Alamos National Laboratory will be funded by PBS Central Characterization Project (CB-0081), whereas the Idaho National Laboratory funds its waste characterization certification. Transportation certification is funded by PBS Central Characterization Project (CB-0081).

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

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
\$1,339,000	\$1,442,000	+\$103,000
<ul style="list-style-type: none"> • Continued the background investigation in support of the Building 812 and Building 865 Remedial Investigations/Feasibility Studies. 	<ul style="list-style-type: none"> • Finalize the Remedial Investigation/Feasibility Study for Building 865 part 2 – Metals in Soil. • Continue the Treatability Study for Enhanced In Situ Bioremediation of Perchlorate in Ground water at Building 850/Operable Unit 5. 	<ul style="list-style-type: none"> • The increase reflects resources needed to complete the Remedial Investigation/Feasibility Study for Building 865 part 2 – Metals in Soil.

LLNL Excess Facilities D&D (PBS: CBC-LLNL-0040)

Overview

This PBS is within the Defense Environmental Cleanup appropriation.

This PBS includes the characterization, deactivation and demolition of high-risk excess facilities. The Consolidated Appropriations Act, 2018 (Public Law 115-141), directed DOE to decommission and demolish excess facilities at the Lawrence Livermore National Laboratory. The Department identified the following facilities as among the top ten highest risks to missions, the workforce, the public, and the environment.

- Pool-Type Reactor, Building 280
- MARS-E Beam Facility, Building 175
- Rotating Target Neutron Source Facility, Building 292
- Heavy Element Facility, Building 251
- Pluto Project Testing and Fabrication Facility, Building 241

LLNL Excess Facilities D&D (PBS: CBC-LLNL-0040)

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
\$35,000,000	\$12,004,000	-\$22,996,000
<ul style="list-style-type: none"> • The Lawrence Livermore National Laboratory Management and Operating contractor commenced Building 175 demolition to slab activities. • The United States Army Corps of Engineers commenced removal of the reactor from within Building 280. • The Lawrence Livermore National Laboratory Management and operating contractor commenced characterization of Building 251. 	<ul style="list-style-type: none"> • Continue progress on demolition and disposition of Building 280, Building 251, and removal of the Building 280 and 175 slabs. • Commence characterization activities at additional excess facilities. 	<ul style="list-style-type: none"> • The decrease reflects completion of reactor removal activities at Building 280 and demolition of Building 175 to slab on grade and transition to characterization and start of Building 251 D&D and Building 175 slab and soil removal.

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- DOE issued a Deactivation, Decommissioning and Removal indefinite delivery, indefinite quantity Task Order for the demolition of Building 251 to slab.
 - The Lawrence Livermore National Laboratory Management and operating contractor characterized Legacy Slab 377 in preparation for slab/soil removal in FY 2022.

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 to mixed and low-level radioactive waste needing off-site disposal, transuranic waste has accumulated and been staged in preparation for off-site disposition to the Waste Isolation Pilot Plant.

Since 1989, the Environmental Management program at Los Alamos National Laboratory has been responsible for addressing the characterization and cleanup of environmental media (i.e., soil, groundwater and landfills known as Material Disposal Areas); decommissioning and demolition of process-contaminated facilities; and disposition of legacy waste. The Environmental Management Los Alamos Field Office's highest priorities for the cleanup mission are: safety, transparency, and efficiency.

Highlights of the FY 2023 Budget Request

In FY 2023, the Site will:

- Continue retrieval, size reduction and repackaging of the below-grade transuranic waste (Corrugated Metal Pipes) at Area G.
- Continue to characterize and certify transuranic waste and support shipments to Waste Isolation Pilot Plant.
- Complete all preparations at Waste Control Specialists LLC commercial radioactive waste treatment and disposal facility to move DOE transuranic waste from the below grade storage location to an above grade facility.
- Closeout Middle DP Road Site assuming successful completion of remediation in FY 2022 so Los Alamos County can develop the acreage in line with land transfer restrictions.
- Continue investigations under the Pajarito Watershed Campaign, addressing 147 Solid Waste Management Units and Areas of Concern.
- Complete the Southern External Boundary Consent Order Campaign, investigating and closing 60 soil related Solid Waste Management Units and Areas of Concern.
- Continue the Chromium Plume Control Interim Measure to control migration of a hexavalent chromium groundwater plume beneath Mortandad and Sandia canyons.
- Drill and install 4 groundwater monitoring wells required by the New Mexico Environment Department under the Chromium Interim Measure & Characterization and the Royal Demolition Explosives Characterization Consent Order Campaigns (two groundwater contamination plumes).
- Continue characterization, investigation and cleanup associated with Building 21-257, the Industrial Waste Lines, and the DP West Slabs at Technical Area 21.
- Continue investigation and modelling for the Royal Demolition Explosives plume in Cañon de Valle and begin development of proposed risk-based remedy.
- Initiate Decontamination and Demolition of Deactivated National Nuclear Security Administration excess high-risk facilities (Ion Beam Facility).
- Continue stakeholder outreach and Tribal consultation on the Justice40 Initiative.

FY 2022 and FY 2023 Key Milestones/Outlook

- (January 2022) Continue shipments of transuranic waste from Technical Area 54-Area G to the Waste Isolation Pilot Plant.
- (January 2022) Continue remediation activities of transuranic waste at Area G.
- (January 2022) Complete installation and collect first sample from Chromium Plume well R-72 and Submit Letter Report Documenting Completion and Collection of First Samples.

- (February 2022) Complete installation and collect first samples from Chromium Plume monitoring well R-71 and Submit Letter Report Documenting Completion and Collection of First Samples.
- (March 2022) Submit Drilling Work Plan for new Regional Well R-74 associated with the Royal Demolition Explosives plume.
- (March 2022) Submit Drilling Work Plan for New Chromium Groundwater Monitoring Well R-77.
- (March 2022) Submit Drilling Work Plan for Replacement of Groundwater Monitoring Well R-28.
- (June 2022) Initiate Technical Area 54 Transuranic Waste Storage and Treatment Facility (Dome 231) transuranic waste processing and Glove bag Drill and Drain Project.
- (August 2022) Initiate retrieval of below grade transuranic waste (Corrugated Metal Pipes) at Area G.
- (August 2022) Complete installation and collect first sample from Chromium Plume well R-73 and Submit Letter Report Documenting Completion and Collection of First Samples.
- (September 2022) Initiate the processing of below grade transuranic waste.
- (September 2022) Submit Chromium Interim Measures and Characterization Work Plan; a deep dive into the Interim Measures operation and gap analyses leading to remedy
- (September 2022) Initiate investigation at three of five aggregate areas under the Pajarito Watershed Campaign and submit Progress Reports under each investigation (144 Solid Waste management Units and Areas of Concern).
- (December 2022) Complete additional sampling and remediation at the Middle DP Road Site and submit Solid Waste Management Until Assessment Report to the New Mexico Environment Department.
- (January 2023) Continue shipments of transuranic waste from Technical Area 54 Area G to Waste Isolation Pilot Plant.
- (January 2023) Complete installation of Replacement Well R-28 and collect first samples and Submit Letter Report Documenting Completion of Replacement Well R-28 and Collection of First Samples.
- (March 2023) Drilling Work Plan for Replacement of Groundwater Monitoring Well R-42
- (May 2023) Complete installation of New Chromium Well R-77 and collect first samples and Submit Letter Report Documenting Completion and Collection of First Samples.
- (June 2023) Complete investigation and submit Phase II Investigation Report for North Ancho Canyon Aggregate Area, Southern External Boundary Campaign (17 Solid Waste management Units and Areas of Concern).
- (June 2023) Complete installation of Well R-74 and collect first samples and Submit Letter Report Documenting Completion and collection of first samples.
- (August 2023) Initiate drilling of Replacement Well for Groundwater Monitoring Well R-42
- (September 2023) Continue investigation and submit Progress Report for Phase II Investigation of North Ancho Canyon Aggregate Area, Southern External Boundary Campaign (17 Solid Waste management Units and Areas of Concern).
- (September 2023) Continued investigation of two of the three active aggregate areas under the Pajarito Watershed Campaign and submit Progress Reports (139 Solid Waste management Units and Areas of Concern).
- (September 2023) Complete investigation of the third active aggregate area under the Pajarito Watershed Campaign and submit Investigation Report (5 Solid Waste management Units and Areas of Concern).
- (September 2023) Complete characterization activities of Technical Area 21 former Radioactive Liquid Waste Facility (Building 257), industrial waste lines and DP West slabs under nuclear safety envelope created in FY 2021.
- (September 2023) Drilling Work Plan for Regional Well R-75.

Regulatory Framework

The primary regulatory drivers for Environmental Management at Los Alamos National Laboratory have been the 2016 Compliance Order on Consent (Consent Order), previously the 2005 Consent Order, and the National Pollutant Discharge Elimination System Individual Permit. The Consent Order provides the primary requirements for the environmental cleanup efforts at Los Alamos National Laboratory. The Consent Order established an enforceable scope, schedule, and milestones for corrective actions. The National Pollutant Discharge Elimination System Individual Permit regulates storm water

discharge from a total of 405 solid waste management units and areas of concern (Sites) and designated 250 Site Monitoring Areas as sampling locations for compliance monitoring purposes. The current 2010 Individual Permit has been administratively continued since 2015; a new Individual Permit is expected to be issued April 2022 and will provide relief with fewer inspections and a new category for sites with elevated natural background.

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 Toxic Substances Control Act; the Resource Conservation and Recovery Act; the Clean Air Act; the Settlement Agreement and Stipulated Final Order (chromium) 2007; and the settlement of the Administrative Compliance Order with New Mexico Environment Department.

Contractual Framework

In December 2017, the Department awarded the Los Alamos Legacy Cleanup Contract to Newport News Nuclear BWXT Los Alamos, LLC. The contract was transitioned on April 30, 2018, followed by five base years, then a three-year option to another two-year option, for a total of 10 years.

Strategic Management

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 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 for chromium contamination, however the Royal Demolition Explosives contamination area may fall into monitored natural attenuation and perhaps include some active remediation as the final remedy.
- 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 assumed that regulators will accept engineered cover as a final remedy for the seven large Material Disposal Areas.
- 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.

Los Alamos National Laboratory

Funding (\$K)

FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted	FY 2023 Request vs FY 2021 Enacted (%)
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Defense Environmental Cleanup

NNSA Sites

Los Alamos Excess Facilities D&D

CBC-LANL-0040 / Los Alamos Excess Facilities D&D

0	0	40,519	+40,519	N/A
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Los Alamos National Laboratory

VL-FAO-0101 / Miscellaneous Programs and Agreements in Principle
 VL-LANL-0013 / Solid Waste Stabilization and Disposition-LANL Legacy
 VL-LANL-0030 / Soil and Water Remediation-LANL

3,394	3,394	3,394	+0	+0%
101,579	101,579	116,256	+14,677	+14%
121,027	121,027	166,666	+45,639	+38%

Subtotal, Los Alamos National Laboratory

226,000	226,000	286,316	+60,316	+27%
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Total, NNSA Sites

226,000	226,000	326,835	+100,835	+45%
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Safeguards and Security

VL-LANL-0020 / Safeguards and Security

0	0	5,000	+5,000	N/A
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Total, Defense Environmental Cleanup

226,000	226,000	331,835	+105,835	+47%
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**Los Alamos National Laboratory
Explanation of Major Changes (\$K)**

FY 2021 Enacted	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted
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Defense Environmental Cleanup

Los Alamos

EMLA Cleanup Activities

VL-LANL-0013 / Solid Waste Stabilization and Disposition-LANL Legacy

- The increase is due to the acceleration, initiation, startup and operations of contact handled transuranic waste retrieval, treatment and disposition activities.
 - o Transuranic waste processing and Glove bag Drill and Drain Project.
 - o Retrieval of below grade transuranic waste (Corrugated Metal Pipes) at Area G.
 - o Size reduction and packaging of Corrugated Metal Pipes.

101,579 116,256 +14,677

VL-LANL-0030 / Soil and Water Remediation-LANL

- The increase will support installation of four new groundwater monitoring wells associated with both the Chromium and RDX groundwater plumes, continues investigation and remediation under the Pajarito Watershed Campaign under the 2016 Consent Order and supports expansion or enhancements to the Chromium Plume Control Interim Measure.
- Continues investigation and remediation of three aggregate areas under the Pajarito Watershed Campaign under the 2016 Consent Order (139 Solid Waste management Units and Areas of Concern).
- Supports expansion or enhancements to the Chromium Plume Control Interim Measure identified under the Chromium Interim Measures and Characterization Work Plan.

121,027 166,666 +45,639

EMLA Community and Regulatory Support

VL-FAO-0101 / Miscellaneous Programs and Agreements in Principle

- No change.

3,394 3,394 +0

Los Alamos Excess Facilities D&D

CBC-LANL-0040 / Los Alamos Excess Facilities D&D

- This increase will support the initiation of Decontamination and Demolition of Deactivated National Nuclear Security Administration excess high-risk facilities (Ion Beam Facility).

0 40,519 +40,519

Safeguards and Security

VL-LANL-0020 / Safeguards and Security

- Increase supports establishment of Safeguards and Security activities for EM off-site locations.

0 5,000 +5,000

FY 2021 Enacted	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted
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Total, Los Alamos National Laboratory	226,000	331,835	+105,835
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Solid Waste Stabilization and Disposition-LANL Legacy (PBS: VL-LANL-0013)

Overview

This Project Baseline Summary is within the Defense Environmental Cleanup appropriation.

The Solid Waste Stabilization and Disposition Project Baseline Summary, also known as the Legacy Waste Disposition Project Baseline Summary, 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 Project Baseline Summary scope is integrated with the Soil and Water Remediation Project Baseline Summary (PBS-VL-LANL-0030), which includes compliance activities associated with the New Mexico Environment Department renegotiated Compliance Order on Consent that was signed on June 24, 2016.

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

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
\$101,579,000	\$116,256,000	+\$14,677,000
<ul style="list-style-type: none"> Continued 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. Completed corrective actions necessary to support resumption of operations of processing lines at Waste Characterization Reduction Repackaging Facility, Dome 231, Dome 375 and Building 412. Continued treatment of 60 drums of remediated nitrate salt bearing wastes in fulfillment of the Nitrate Salt Bearing Waste Isolation Plan. Continued disposition of mixed low-level waste/low-level waste. Supported continued staging of a portion of the 3706 transuranic waste inventory at an offsite 	<ul style="list-style-type: none"> Continue Solid Waste Stabilization and activities at Los Alamos National Laboratory. Continue management and disposition of mixed low-level radioactive waste/low-level radioactive waste and transuranic waste. Continue Nuclear Safety activities required at Technical Area 54 Area G. Continue safe operations of transuranic waste processing lines at Technical Area 54 Area G. Continue activities to certify legacy transuranic waste for shipments to the Waste Isolation Pilot Plant. Support transuranic waste characterization activities such as Visual Examination, Real Time Radiography, Non Destructive Assay, Dose to Curie Conversion, and Flammable Gas Analysis. 	<ul style="list-style-type: none"> The increase is due to the acceleration, initiation, startup and operations of contact handled transuranic waste retrieval, treatment and disposition activities. <ul style="list-style-type: none"> Transuranic waste processing and Glove bag Drill and Drain Project. Retrieval of below grade transuranic waste (Corrugated Metal Pipes) at Area G. Size reduction and packaging of Corrugated Metal Pipes.

commercial facility, pending the resumption of operations at the Waste Isolation Pilot Plant.

- Support continued staging of a portion of transuranic waste inventory at an offsite commercial facility, pending possible shipments to the Waste Isolation Pilot Plant.
- Continue the retrieval and processing of below grade transuranic waste (corrugated metal pipes).

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

Overview

This Project Baseline Summary is within the Defense Environmental Cleanup appropriation.

The Los Alamos National Laboratory Soil and Water Remediation Project Baseline Summary scope includes identification, investigation and remediation of chemical and/or radiological contamination attributable to past Laboratory operations and practices. The remaining scope of the Project Baseline Summary includes characterization, monitoring, and protection of the surface and groundwater at the Laboratory and approximately 860 Solid Waste Management Units and Areas of Concern (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 Potential Release 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 two of the eight material disposal areas and over 100 Solid Waste Management Units and Areas of Concern.

In addition to the investigation and closure of solid waste management units, this Project Baseline Summary also implements a storm water mitigation and management program that is compliant with the February 2009 National Pollutant Discharge Elimination System Individual Permit issued by the Environmental Protection Agency.

Beginning in FY 2018, activities previously included in the Project Baseline Summary for Decontamination and Demolition were integrated into this Project Baseline Summary, 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. This specific Decontamination and Demolition scope will remain under PBS-0030; however, Decontamination and Demolition of Deactivated National Nuclear Security Administration excess high-risk facilities (Ion Beam Facility) will be covered under PBS-0040.

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

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
\$121,027,000	\$166,666,000	+\$45,639,000
<ul style="list-style-type: none"> Continued groundwater monitoring and reporting requirements consistent with the Framework Agreement, Consent Order on Compliance, and the Resource Conservation and 	<ul style="list-style-type: none"> Continue groundwater monitoring and reporting requirements consistent with the renegotiated Compliance Order on Consent (Consent Order) signed on June 24, 2016; install several 	<ul style="list-style-type: none"> The increase will support installation of four new groundwater monitoring wells associated with both the Chromium and RDX groundwater plumes, continues

Recovery Act Operating Permit; installed several monitoring wells under the Consent Order; continued storm-water sampling to protect the regional drinking water supplies, sediment monitoring, mitigation and reporting requirements consistent with the Individual Permit.

- Continued to provide critical database management and infrastructure support to meet Consent Order requirements.
- Conducted authorization basis surface inspections at several Nuclear Environmental Sites and implemented required changes.
- Completed Townsite cleanup of solid waste management units from the 1940s and 1950s production sites.
- Supported Technical Area-21/Delta Prime Site aggregate area and other aggregate area cleanups.
- Continued activities for Chromium plume investigation and interim measure progression towards a Corrective Measures Evaluation.
- Prepared groundwater Corrective Measures Evaluation report for high explosives plume in Cañon de Valle Royal Demolition Explosives.
- Conducted design studies on the Hexavalent Chromium Pump project for remediation of chromium contamination in Mortandad and Sandia canyons and installed infrastructure pipelines and vaults.

monitoring wells under the renegotiated Consent Order; continued operation and evaluation of sediment transport mitigation measures implemented under the Consent Order to protect the surface water drinking water supplies (City of Santa Fe and Santa Fe County).

- 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 storm water runoff discharge monitoring, mitigation and reporting requirements at 250 Site Monitoring Areas consistent with the National Pollutant Discharge Elimination System Individual Permit.
- Continue hexavalent chromium plume control Interim Measure.
- Continue hexavalent chromium plume center characterization activities through installation of three additional groundwater monitoring wells, modeling and hydrology studies in support of the Corrective Measures Evaluation.
- Continue investigation and closure activities at Technical Area 21.
- Install monitoring well within the deep groundwater high explosives (Royal Demolition Explosives) plume beneath Cañon de Valle to provide vertical plume delineation; continue negotiations with the New Mexico Environment Department on risk-based decision regarding remedial options.
- Complete Southern External Boundary Consent Order Campaign, investigating and closing 60 Solid Waste Management Units and Areas of Concern.

investigation and remediation under the Pajarito Watershed Campaign under the 2016 Consent Order and supports expansion or enhancements to the Chromium Plume Control Interim Measure.

- Continues investigation and remediation of three aggregate areas under the Pajarito Watershed Campaign under the 2016 Consent Order (139 Solid Waste management Units and Areas of Concern).
- Supports expansion or enhancements to the Chromium Plume Control Interim Measure identified under the Chromium Interim Measures and Characterization Work Plan.

-
- Continue Decontamination and Demolition of Technical Area 21 Building 21-257 and industrial waste line.
 - Continue characterization of the Delta Prime West Slabs remediation at Technical Area 21.
 - Continue or complete investigations for three of five aggregate areas under the Pajarito Watershed Campaign addressing 147 Solid Waste Management Units and Areas of Concern.
 - Close-out of the Middle DP Road Site Solid Waste Management Unit Assessment.
 - Continue vapor monitoring at Material Disposal Areas C and L.

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

Overview

This Project Baseline Summary is within the Defense Environmental Cleanup appropriation.

This Project Baseline Summary 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 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
\$3,394,000	\$3,394,000	+\$0
<ul style="list-style-type: none"> Supported the Regional Coalition activities. Supported the Natural Resource Damage Assessment including preliminary assessment development and Trustee Council activities. Supported the Los Alamos Pueblo Program to develop and implement environmental monitoring programs for air, soil, and water and establish an independent monitoring program. 	<ul style="list-style-type: none"> Support the New Mexico Agreement in Principle including Regional Coalition activities. Support the Natural Resource Damage Assessment including preliminary assessment development and Trustee Council activities. Support the Los Alamos Pueblo Project. 	<ul style="list-style-type: none"> No change.

Excess Facilities D&D (PBS: CBC-LANL-0040)

Overview

This Project Baseline Summary is within the Defense Environmental Cleanup appropriation.

This Project Baseline Summary includes the characterization, Decontamination and Demolition of Deactivated National Nuclear Security Administration excess high-risk facilities. The Department identified the following facilities as among the top ten highest risks to missions, the workforce, the public, and the environment.

- Ion Beam Facility, Building 03-0016

This project will end when demolition of these facilities is completed.

Los Alamos Excess Facilities D&D (PBS: CBC-LANL-0040)

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
\$0	\$40,519,000	+\$40,519,000

- | | | |
|--|--|--|
| <ul style="list-style-type: none"> • No activities. | <ul style="list-style-type: none"> ▪ Initiate Decontamination and Demolition of Deactivated National Nuclear Security Administration excess high-risk facilities (Ion Beam Facility). | <ul style="list-style-type: none"> • This increase will support the initiation of Decontamination and Demolition of Deactivated National Nuclear Security Administration excess high-risk facilities (Ion Beam Facility). |
|--|--|--|

Safeguards and Security (PBS: VL-LANL-0020)

Overview

This Project Baseline Summary is within the Defense Environmental Cleanup appropriation.

This Project Baseline Summary includes safeguards and security activities to efficiently and effectively protect sensitive information, government property, and the safety and security of employees, contractors, and the public.

Safeguards and Security (PBS: VL-LANL-0020)

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
\$0	\$5,000,000	+\$5,000,000
<ul style="list-style-type: none"> Safeguards and Security activities previously funded by the National Nuclear Security Administration. 	<ul style="list-style-type: none"> Establish safeguard and security activities as required by the Department of Homeland Security directive and as identified and authorized by the DOE HQ building security plan. 	<ul style="list-style-type: none"> Increase supports establishment of Safeguards and Security activities for EM off-site locations.

Nevada

Overview

The EM Nevada Program is comprised of soil and groundwater remediation, operation of waste disposal facilities, and community and regulatory support activities. Soil and groundwater remediation activities include assessment and completion of corrective actions for surface and near-surface soil contamination locations, and former underground test area locations and decontamination and decommissioning at industrial-type locations in accordance with the Federal Facility Agreement and Consent Order. Operation of waste disposal facilities supports the completion of cleanup at sites across the DOE complex. Community and regulatory support activities provide stakeholder and Tribal entity support in the State of Nevada for EM activities on the Nevada National Security Site and the Nevada Test and Training Range.

The EM Nevada Radioactive Waste Management Complex is an essential asset for the DOE. This one-of-a-kind waste disposal facility is the only federally owned location where low-level radioactive waste, mixed low-level radioactive waste (includes hazardous and radioactive waste components), and classified waste can be disposed from off-site generators. Without this facility, many DOE sites and DOE-related facilities would be unable to remediate legacy nuclear testing and research facilities and dispose of the contaminated materials.

Highlights of the FY 2023 Budget Request

The EM Nevada Program FY 2023 budget supports continued progress towards risk-informed closure of 82 remaining subsurface contaminated groundwater and 8 contaminated industrial-type sites; continued post-closure monitoring and maintenance; operation of the Radioactive Waste Management Complex; continued support for the State of Nevada regulatory oversight of EM activities; environmental and natural resource planning as it pertains to the site; and funding for the low-level radioactive waste fee agreement with the State of Nevada. The primary focus for FY 2023 is drilling and development of 2 wells in support of end-state closure of the remaining subsurface contaminated groundwater sites and facility demolition and closure in support of end-state closure of the remaining contaminated industrial-type sites.

Continue stakeholder outreach and Tribal consultation on the Justice40 Initiative.

FY 2022 and FY 2023 Key Milestones/Outlook

PBS VL-NV-0030:

- (December 2021) Provide Corrective Action Unit 101 Central Pahute Mesa Phase II Final Well Installation Presentation #1 to the State of Nevada.
- (December 2021) Provide Corrective Action Unit 102 Western Pahute Mesa Phase II Final Well Installation Presentation #1 to the State of Nevada.
- (June 2022) Submit Corrective Action Unit 101 Central Pahute Mesa Phase II Flow and Transport Model to the State of Nevada.
- (June 2022) Submit Corrective Action Unit 102 Western Pahute Mesa Phase II Flow and Transport Model to the State of Nevada.
- (June 2022) Submit Final CY 2021 Post-Closure Report to the State of Nevada.
- (August 2022) Submit Corrective Action Unit 101 Central Pahute Mesa CY 2021 Annual Groundwater Sampling Report to the State of Nevada.
- (August 2022) Submit Corrective Action Unit 102 Western Pahute Mesa CY 2021 Annual Groundwater Sampling Report to the State of Nevada.
- (September 2022) Provide Corrective Action Unit 101 Central Pahute Mesa Phase II Data Completion Presentation #8 to the State of Nevada.
- (September 2022) Provide Corrective Action Unit 102 Western Pahute Mesa Phase II Data Completion Presentation #8 to the State of Nevada.
- (December 2022) Provide Corrective Action Unit 101 Central Pahute Mesa Phase II Final Well Installation Presentation #2 to the State of Nevada.
- (December 2022) Provide Corrective Action Unit 102 Western Pahute Mesa Phase II Final Well Installation Presentation #2 to the State of Nevada.

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- (April 2023) Complete Corrective Action Unit 101 Central Pahute Mesa Phase II External Peer Review.
- (April 2023) Complete Corrective Action Unit 102 Western Pahute Mesa Phase II External Peer Review.
- (June 2023) Submit Final CY 2022 Post-Closure Report to the State of Nevada.
- (August 2023) Submit Corrective Action Unit 101 Central Pahute Mesa CY 2022 Annual Groundwater Sampling Report to the State of Nevada.
- (August 2023) Submit Corrective Action Unit 102 Western Pahute Mesa CY 2022 Annual Groundwater Sampling Report to the State of Nevada.
- (September 2023) Submit Corrective Action Unit 572 Test Cell C Ancillary Buildings and Structures Closure Report to the State of Nevada.

PBS VL-NV-0080:

- (September 2022) Continue disposal of low-level radioactive waste and mixed low-level radioactive waste; continue audits and certification programs; and maintain facilities and documents.
- (September 2023) Continue disposal of low-level radioactive waste and mixed low-level radioactive waste; continue audits and certification programs; and maintain facilities and documents.

PBS VL-NV-0100:

- (September 2022) Continue funding to the State of Nevada.
- (September 2023) Continue funding to the State of Nevada.

Regulatory Framework

EM Nevada Program work at the Nevada National Security Site and the Nevada Test and Training Range follows all applicable federal and state level regulations including, but not limited to:

- Federal Facility Agreement and Consent Order
- Resource Conservation and Recovery Act
- Safe Drinking Water Act
- Agreements in Principle with the State of Nevada
- Executive Order 12088
- DOE Order 435.1, Radioactive Waste Management
- DOE Order 458.1 Change 3 (Admin Change), Radiation Protection of the Public and the Environment

Contractual Framework

Program planning and management for the EM Nevada Program is conducted through the issuance and execution of contracts to large and small businesses. The EM Nevada Program 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 National Nuclear Security Administration contract at the Nevada National Security Site is a Management and Operating contract with Mission Support and Test Services, LLC. The contract has a base performance period of 2017 to 2024 with award term options through November 30, 2027. This contract includes the EM-funded operation of the waste disposal facilities and infrastructure support for the environmental cleanup scope. Work Authorizations are placed to cover EM work under the Management and Operating contract.

Navarro Research and Engineering, Inc. (Navarro) was awarded the EM Nevada Environmental Program Services (EPS) contract on June 17, 2020. Navarro will provide a variety of cleanup services at the Nevada National Security Site. EM competed the contract using the End State Contracting Model I (ESCM) in accordance with the 2018 EM Policy Directive for the End State Contracting Model. The End State Contracting Model contract is expected to significantly reduce risk and environmental liability to provide the best overall solution to EM Nevada's mission at Nevada National Security Site to accelerate completion and closure. Currently Navarro has been awarded Task Order #1 (contract transition) and Task Order #2 (complete groundwater corrective action investigation phase; drill two evaluation monitoring wells; pre-demolition characterization and hazardous reduction; maintain radioactive waste acceptance program; maintain post-

**Environmental Management/
Nevada**

FY 2023 Congressional Budget Justification

closure requirements; and overall program integration and management). Task Order #3 (demolition and closure for corrective action units 114 Engine Maintenance Assembly & Disassembly Facility and 572 Test Cell C Ancillary Buildings and Structures) is currently under development and is planned to be awarded in FY 2022.

Strategic Management

The EM Nevada Program positions the Department of Energy to meet the challenges of the nation's Manhattan Project and Cold War legacy responsibilities by:

- Planning and conducting 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.
- Providing safe, compliant, and cost-effective disposal for DOE-generated low-level radioactive waste and mixed low-level radioactive waste streams including classified waste, supporting the reduction in both the 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 the Nevada Test and Training Range. It includes 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 1,100 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. Groundwater 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 nation's national security mission and completion of cleanup at DOE sites across the United States including the Nevada National Security Site, by maintaining the capability to dispose of 1.2 million cubic feet of low-level radioactive waste, mixed low-level radioactive waste and classified waste annually.

Nevada

Funding (\$K)

FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted	FY 2023 Request vs FY 2021 Enacted (%)
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Defense Environmental Cleanup

NNSA Sites

Nevada

VL-NV-0030 / Soil and Water Remediation-Nevada	34,859	34,859	35,965	+1,106	+3%
VL-NV-0080 / Operate Waste Disposal Facility-Nevada	20,813	20,813	22,787	+1,974	+9%
VL-NV-0100 / Nevada Community and Regulatory Support	5,065	5,065	3,900	-1,165	-23%
Subtotal, Nevada	60,737	60,737	62,652	+1,915	+3%

Nevada
Explanation of Major Changes (\$K)

FY 2021 Enacted	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted
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Defense Environmental Cleanup

NNSA Sites

Nevada

VL-NV-0030 / Soil and Water Remediation-Nevada

The budget increase supports:

- Drilling and Development of 2 wells in support of Federal Facility Agreement and Consent Order and end-state closure of the remaining subsurface contaminated groundwater sites as well as demolition and Closure for Corrective Action Unit 572 Test Cell C Ancillary Buildings and Structures in support of Federal Facility Agreement and Consent Order and end-state closure of the remaining industrial-type contaminated sites.
- Remote groundwater sensing demonstration project.

34,859 35,965 +1,106

VL-NV-0080 / Operate Waste Disposal Facility-Nevada

- The budget increase supports cell closure activities in compliance with the Resource Conservation and Recovery Act Permits and DOE Order 435.1, Radioactive Waste Management.

20,813 22,787 +1,974

VL-NV-0100 / Nevada Community and Regulatory Support

- The decrease funds requirements for FY 2023.

5,065 3,900 -1,165

Total, Nevada	60,737	62,652	+1,915
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Soil and Water Remediation-Nevada (PBS: VL-NV-0030)

Overview

This PBS is within the Defense Environmental Cleanup appropriation.

The overall objective of this PBS is to provide for appropriate risk-based remediation of contaminated support facilities and soils, and groundwater modeling on the Nevada National Security Site and the U.S. Air Force's Nevada Test and Training Range surface and subsurface contamination of industrial and soil contaminated sites. The contamination is the result of atmospheric and underground nuclear tests. The cleanup is complex due to the number of sites, nature and extent of contamination, and site size/location. The surface contamination includes approximately 1,137 contaminated industrial-type sites and approximately 148 contaminated soil sites on the Nevada National Security Site and the Nevada Test and Training Range. The subsurface contamination includes approximately 879 groundwater contaminated 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.

Starting in FY 2023, activities at approximately 2,069 (96%) contaminated soil, industrial-type and groundwater sites are closed and activities at approximately 90 remaining sites are in progress.

Soil and Water Remediation-Nevada (PBS: VL-NV-0030)

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
\$34,859,000	\$35,965,000	+\$1,106,000

Groundwater Remediation:

- Corrective Action Units 101/102 Pahute Mesa:
 - o Completed Source Term Models.
 - o Continued annual groundwater data collection and sampling.
 - o Continued Flow and Transport Model development and Initiate External Peer Review Panel Selection.
- Corrective Action Unit 97 Yucca Flat/Climax Mine:

Groundwater Remediation:

- Continue annual groundwater data collection and sampling for Corrective Action Units 101/102 Pahute Mesa.
- Complete External Peer Review for Corrective Action Units 101/102 Pahute Mesa.
- Initiate Corrective Action Decision Document/Corrective Action Plan.
- Complete drilling and development of two (2) Model Evaluation Wells for Corrective Action Units 101/102 Pahute Mesa.
- Install a remote groundwater sensing

The budget increase supports:

- Drilling and Development of 2 wells in support of Federal Facility Agreement and Consent Order and end-state closure of the remaining subsurface contaminated groundwater sites as well as demolition and Closure for Corrective Action Unit 572 Test Cell C Ancillary Buildings and Structures in support of Federal Facility Agreement and Consent Order and end-state closure of the remaining industrial-type contaminated sites.
- Remote groundwater sensing

<ul style="list-style-type: none"> o Received State of Nevada Closure Approval 	<p>demonstration project on the Nevada National Security Site to detect the presence, levels, and characteristics of groundwater in the desert.</p>	<p>demonstration project.</p>
<p>Industrial Sites:</p> <ul style="list-style-type: none"> • Corrective Action Unit 114 Engine Maintenance Assembly & Disassembly Facility: <ul style="list-style-type: none"> o Continued pre-closure facility surveillance and maintenance. o Received State of Nevada approval of Streamlined Approach for Environmental Restoration Plan Rev #1. o Initiated Pre Demolition “Decommissioning and Decontamination” Activities. • Corrective Action Unit 572 Test Cell C Ancillary Buildings and Structures: <ul style="list-style-type: none"> o Received State of Nevada approval of Streamlined Approach for Environmental Restoration Plan. o Initiated Pre Demolition “Decommissioning and Decontamination” Activities. 	<p>Industrial Sites:</p> <ul style="list-style-type: none"> • Initiate Demolition and Closure Activities for Corrective Action Unit 114 Engine Maintenance Assembly & Disassembly Facility. • Complete Demolition and Closure Activities for Corrective Action Unit 572 Test Cell C Ancillary Buildings and Structures. <p>Post-Closure Long-term Monitoring:</p> <ul style="list-style-type: none"> • Continue post-closure monitoring of soils and industrial-type Nevada National Security Site sites. • Continue annual post-closure sampling and monitoring for closed groundwater sites. • Initiate Corrective Action Unit 111 Revegetation activities. 	
<p>Post-Closure Long-term Monitoring:</p> <ul style="list-style-type: none"> • Continued post-closure monitoring of soils and industrial-type Nevada National Security Site sites. • Continued post-closure sampling and monitoring for closed groundwater sites. 		

Operate Waste Disposal Facility-Nevada (PBS: VL-NV-0080)

Overview

This PBS is within the Defense Environmental Cleanup appropriation.

This PBS provides low-level radioactive waste, mixed low-level radioactive waste and classified material disposal capability to meet the needs of all DOE sites through FY 2030 for waste that requires offsite disposal and in instances where 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 upon total waste volumes from all DOE programs. Continuing the practice that began in FY 2009, non-EM programs will fund a share of this activity based on each program's share of the waste disposed at the Nevada National Security Site. The Site maintains the capability to dispose of low-level radioactive waste and mixed low-level radioactive waste (as allowed under permit conditions as administered by the State of Nevada), and dispose 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 of at the site of generation or at commercial facilities.

Operate Waste Disposal Facility-Nevada (PBS: VL-NV-0080)

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
\$20,813,000	\$22,787,000	+\$1,974,000
<ul style="list-style-type: none"> Continued 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. Continued audits and waste certification reviews in support of generator programs to ensure compliance with the Nevada National Security Site Waste Acceptance Criteria. Supported cleanup activities across the DOE complex by disposing of 539,422 cubic feet (15,275 cubic meters) of low-level and mixed low-level radioactive waste from DOE sites and 	<ul style="list-style-type: none"> Continue developing and maintaining plans, permits, safety basis, and technical and regulatory support for activities such as the Nevada National Security Site Resource Conservation and Recovery Act Part B Permit and DOE Order 435.1. 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. 	<ul style="list-style-type: none"> The budget increase supports cell closure activities in compliance with the Resource Conservation and Recovery Act Permits and DOE Order 435.1, Radioactive Waste Management.

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- approved generators.
 - Submitted Corrective Action Unit 577 Area 5 Chromium Containing Waste Disposal Cells Closure Report to the State of Nevada.
 - Support cleanup activities across the DOE complex by providing disposal capacity and services for approximately 1.2M cubic feet (34,000 cubic meters) of low-level radioactive, mixed low-level radioactive waste, and classified waste.
 - Continue cell closure activities for Corrective Action Unit 577 Area 5 Chromium Containing Waste Disposal Cells.
 - Complete low-level waste disposal Cell #29 construction.

Nevada Community and Regulatory Support (PBS: VL-NV-0100)

Overview

This PBS is 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 Facility Agreement and Consent Order fee; and a grant with the State of Nevada to perform programmatic oversight and environmental and natural resource planning. The Nevada Site Specific Advisory Board is chartered by the DOE as an EM Site-Specific Advisory Board.

Nevada Community and Regulatory Support (PBS: VL-NV-0100)

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
\$5,065,000	\$3,900,000	-\$1,165,000
<ul style="list-style-type: none"> • Provided support for State of Nevada regulatory oversight of EM Nevada Program work at the Nevada National Security Site. • Provided support for the State of Nevada grant to perform programmatic oversight to carry out environmental and natural resource planning as it pertains to the Site. • Provided funds for the low-level radioactive waste fee agreement with the State of Nevada. • Supported Site Specific Advisory Board requirements. 	<ul style="list-style-type: none"> • Provide support for State of Nevada regulatory oversight of EM Nevada Program work at 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 Site. • Provide funds for the low-level radioactive waste fee agreement with the State of Nevada. • Provide for Site Specific Advisory Board requirements. 	<ul style="list-style-type: none"> • The decrease funds requirements for FY 2023.

Sandia National Laboratories

Overview

Sandia National Laboratories is a multi-mission laboratory managed and operated by National Technology & Engineering Solutions of Sandia, LLC, a wholly owned subsidiary of Honeywell International Inc., for the U.S. Department of Energy's National Nuclear Security Administration. The Sandia National Laboratories-New Mexico site (Sandia- New Mexico) is adjacent to Albuquerque, New Mexico, on Kirtland Air Force Base. The Sandia- New Mexico Environmental Restoration Operations Project scope includes the remediation of inactive waste disposal and release sites. These sites have known releases of hazardous, radioactive, and mixed waste.

Sandia- New Mexico works closely with the New Mexico Environment Department to complete Resource Conservation and Recovery Act corrective actions at the last three Environmental Restoration sites using cost effective approaches that meet regulatory requirements. The remaining cleanup scope consists of three areas with contaminated groundwater in various stages of corrective action that require final remedies. All Environmental Restoration activities are regulated by the 2004 Compliance Order on Consent signed by DOE, the Sandia Corporation, and the New Mexico Environment Department.

Highlights of the FY 2023 Budget Request

In FY 2023, Resource Conservation and Recovery Act corrective action activities will continue at the three locations with contaminated groundwater: the Burn Site Groundwater Area of Concern, the Technical Area-V Groundwater Area of Concern, and the Tijeras Arroyo Groundwater Area of Concern. At the Technical Area-V Groundwater Area of Concern, FY 2023 funding will support the Current Conceptual Model/Corrective Measures Evaluation Report. At the Burn Site Groundwater Area of Concern, FY 2023 funding will support continuation of updating the Current Conceptual Model/Corrective Measures Evaluation Report. At the Tijeras Arroyo Groundwater Area of Concern, FY 2023 funding supports a public hearing associated with the selection of the final remedy.

Continue stakeholder outreach and Tribal consultation on the Justice40 Initiative.

FY 2022 and FY 2023 Key Milestones/Outlook

- (FY 2022) Submit the Corrective Measures Implementation Plan to New Mexico Environment Department for review for the Tijeras Arroyo Groundwater Area of Concern.
- (FY 2022) Install two additional contingency wells at the Burn Site Groundwater Area of Concern.
- (FY 2023) Begin updating Current Conceptual Model/Corrective Measures Evaluation Report for Technical Area-V Groundwater Area of Concern.
- (FY 2023) Continue updating Current Conceptual Model/Corrective Measures Evaluation Report for Burn Site Groundwater Area of Concern.

Regulatory Framework

The regulatory driver for completing this work is the Compliance Order on Consent signed in 2004 by DOE, the Sandia Corporation, and the New Mexico Environment Department. To date, 308 of 314 sites have been approved by the New Mexico Environment Department as being "corrective action complete," including the Mixed Waste Landfill. Three of the remaining six sites are considered "deferred active-mission" sites and bring a future cleanup liability.

The remaining three areas of groundwater contamination are being characterized to determine the remedial action to implement and are in various stages of the Resource Conservation and Recovery Act corrective action process. Each of the three areas of groundwater contamination (Burn Site, Tijeras Arroyo, and Technical Area-V) have unique hydro-geologic complexity, and all three have contamination levels that are above the maximum contaminant level drinking water standards. There are no near-term risks to public health. Delivery of final Corrective Measure Evaluation reports for each of the three areas to the New Mexico Environment Department are considered enforceable agreement milestones.

Contractual Framework

EM work at Sandia-New Mexico is performed under Work Authorizations against the National Nuclear Security Administration's Management and Operating contract with National Technology & Engineering Solutions of Sandia.

Strategic Management

Sandia-New Mexico's Environmental Restoration Operations mission is to complete all necessary corrective actions at the three groundwater areas of concern. Three additional soil release sites are considered "deferred active-mission" sites.

The status and closure goals are:

- (1) Burn Site Groundwater Area of Concern - four monitoring wells were installed at the Burn Site Groundwater Area of Concern at the end of FY 2019 and the beginning of FY 2020 to meet an enforceable agreement milestone. Based on quarterly sampling at the monitoring wells, the results concluded that additional wells were not required and the process of preparing the updated Conceptual Model Report and a Corrective Measures Evaluation Report was begun early FY 2022;
- (2) Tijeras Arroyo Groundwater Area of Concern -The New Mexico Environment Department is reviewing the revised and updated Current Conceptual Model and Corrective Measures Report; and
- (3) Technical Area-V Groundwater Area of Concern, Phase 1 injection was completed in FY 2019 as a part of the phased Interim Measure/Treatability Study and the Treatability Study was concluded in May 2021 based on conversations between DOE Sandia Field Office, New Mexico Environment Department, and Sandia National Laboratories; staff about to begin the process of updating the Current Conceptual Model and Corrective Measures Report.

Sandia Site Office

Funding (\$K)

FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted	FY 2023 Request vs FY 2021 Enacted (%)
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Defense Environmental Cleanup

NNSA Sites

Sandia National Laboratories

VL-SN-0030 / Soil and Water Remediation-Sandia

4,860 4,860 4,003 -857 -18%

Sandia Site Office
Explanation of Major Changes (\$K)

FY 2021 Enacted	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted
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Defense Environmental Cleanup

NNSA Sites

Sandia National Laboratories

VL-SN-0030 / Soil and Water Remediation-Sandia

- No significant change.

	4,860	4,003	-857
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Total, Sandia Site Office

	4,860	4,003	-857
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Soil and Water Remediation-Sandia (PBS: VL-SN-0030)

Overview

This PBS is within the Defense Environmental Cleanup appropriation.

The Sandia-New Mexico Environmental Restoration Operations mission is to pursue completion of all necessary corrective actions at the three groundwater areas of concern. The three groundwater areas (Burn Site, Tijeras Arroyo, and Technical Area-V) 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 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
\$4,860,000	\$4,003,000	-\$857,000
<ul style="list-style-type: none"> Installed additional groundwater wells and continue characterization at Burn Site Groundwater Area. Burn Site Groundwater updated Conceptual Model Report and a Corrective Measures Evaluation Report prepared and submitted to move towards formal regulatory closure. Continued field work implementation of the Interim Measure/Treatability Study at Technical Area-V Groundwater Area. Submitted the Corrective Measures Implementation Plan to New Mexico Environment Department for review for Tijeras Arroyo Groundwater Area. 	<ul style="list-style-type: none"> Begin updating Current Conceptual Model/Corrective Measures Evaluation Report for Technical Area-V Groundwater Area of Concern. Continue updating Current Conceptual Model/Corrective Measures Evaluation Report for Burn Site Groundwater Area of Concern and then submit to the New Mexico Environment Department for review. Support a public hearing associated with the selection of the final remedy for the Tijeras Arroyo Groundwater Area of Concern. 	<ul style="list-style-type: none"> No significant change.

Separations Process Research Unit

Overview

The Separations Process Research Unit (SPRU) site supported cleanup of radioactive and chemical waste resulting from Manhattan Project and Cold War activities and currently supports safely managing defense origin transuranic waste. Waste that is determined not to be transuranic after treatment will be disposed as low-level and mixed low-level waste. The remaining transuranic waste will be disposed at the Waste Isolation Pilot Plant (WIPP) in Carlsbad, New Mexico.

The Separations Process Research Unit is a former pilot plant used from 1950 to 1953 to research and develop chemical processes to separate plutonium from other radioactive material and was located at the Knolls Atomic Power Laboratory, Niskayuna, New York. During operations, it contaminated nuclear facilities and approximately 30 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 contaminated with radioactivity. The scope of the Separations Process Research Unit project was to decontaminate and remove the nuclear facilities (including the sub-grade building foundations and tank vaults), remediate the land areas, ship the resulting waste to the appropriate off-site disposal facilities, and transfer the areas back to the landlord, the Office of Naval Reactors.

The decommissioning contractor, AECOM (formerly URS Energy and Construction, Inc.), was awarded the demolition contract December 2007 and completed all site physical work in July 2019. Closeout reports were completed in FY 2020, and the land areas were transferred to Naval Reactors in December 2020.

The remaining scope of work at the Separations Process Research Unit site consists of completing final reports for the F-Yard cleanup; completing planning to address remaining transuranic waste; obtaining State acceptance of the final project Resource Conservation and Recovery Act report, contract claims resolution, and closeout.

Highlights of the FY 2023 Budget Request

The FY 2023 budget request of \$15,300,000 supports work associated with closing out the demolition contract and continuing work to safely maintain, evaluate, and develop processing plans to treat, transport, and dispose of Separations Process Research Unit transuranic waste.

FY 2022- FY 2023 Key Milestones/Outlook

- (FY 2022) Award the second contract phase for commercial shipping, treatment, and disposal as low-level waste of a portion of the Separations Process Research Unit transuranic waste.
- (FY 2022) Initiate Headquarters strategy for processing, shipping and disposal at Waste Isolation Pilot Plant of remaining Transuranic waste.
- (FY 2023) Continue working with DOE entities to complete planning for processing and certification at an interim treatment facility prior to shipping and disposal at Waste Isolation Pilot Plant.

Regulatory Framework

The Separations Process Research Unit generated 24 waste containers that are potential transuranic waste -- 22 of the containers are mixed Resource Conservation and Recovery Act hazardous waste regulated by the New York State Department of Environmental Conservation. The Separations Process Research Unit applied for a Resource Conservation and Recovery Act Part B permit in FY 2018 as part of a Consent Order and Agreement for long-term (greater than 90 days) storage of this waste. The storage permit application is with the New York State Department of Environmental Conservation.

Contractual Framework

Cleanup of F-yard was awarded to ARS, a Native-Alaskan owned company under a Fixed Price contract. A contract to operate and perform inspections of the transuranic waste storage area was awarded to North Wind Solutions, LLC. Development of a Processing Plan for commercial treatment and disposal of one-third to one-half of the transuranic waste as low level waste was awarded to three companies (Veolia, PermaFix, and Energy Solutions) under the nationwide indefinite delivery/indefinite quantity basic ordering

agreement (BOA) for waste treatment. A follow-up task order under this basic ordering agreement for treatment and disposal of this waste is planned to be awarded to one company in FY 2022 following the evaluation of the Processing Plans. Staff support contractors also assist with contract claims work and the preparation of documentation and performance of inspections for the transuranic waste storage area.

Strategic Management

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.

Challenges to the overall achievement of the Separations Process Research Unit site's strategic goals are:

- Currently, transuranic waste (and suspect transuranic waste) is temporarily stored at the Separations Process Research Unit site in outdoor conex boxes. Waste that is determined not to be transuranic after treatment will be disposed as low-level and mixed low-level waste. The remaining transuranic waste will be disposed at the DOE Waste Isolation Pilot Plant (WIPP) facility.
- DOE has not identified a definitive path for the remaining Separations Process Research Unit transuranic waste required to be disposed at Waste Isolation Pilot Plant. Award of a Processing Plan in FY 2022 for commercial treatment and disposal of a subset of the containers as low level and mixed low-level waste inform the decision process for the remaining transuranic containers required to go to Waste Isolation Pilot Plant.

Separations Process Research Unit

Funding (\$K)

FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted	FY 2023 Request vs FY 2021 Enacted (%)
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Defense Environmental Cleanup

NNSA Sites

Separations Processing Research Unit

VL-SPRU-0040 / Nuclear Facility D&D-Separations Process Research Unit

15,000	15,000	15,300	+300	+2%
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**Separations Process Research Unit
Explanation of Major Changes (\$K)**

	FY 2021 Enacted	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted
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Defense Environmental Cleanup

NNSA Sites

Separations Processing Research Unit

VL-SPRU-0040 / Nuclear Facility D&D-Separations Process Research Unit

- No significant change.

15,000	15,300	+300
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Total, Separations Process Research Unit

15,000	15,300	+300
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Nuclear Facility D&D-Separations Process Research Unit (PBS: VL-SPRU-0040)

Overview

This PBS is 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 land and facilities to the Knolls Atomic Power Laboratory for continued mission use by the Naval Reactors Program.

The contractor physically completed demolition of building and restored the land in FY 2019. Resolution of Contract Claims, and contract closeout continues. In addition, funding in FY 2022 and FY 2023 support final turn-over of the F-yard, and transportation, treatment, and further processing of Separations Process Research Unit transuranic waste.

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

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
\$15,000,000	\$15,300,000	+\$300,000
<ul style="list-style-type: none"> Completed Separations Process Research Unit Transuranic Waste Defense Determination January 2021, awarded task orders to develop transuranic waste processing plans in August 2021. 	<ul style="list-style-type: none"> Surveillance and maintenance activities to support storage for transuranic waste. Support treatment of a portion of the transuranic waste for low level and mixed low level waste disposal based on selected Processing Plan. 	<ul style="list-style-type: none"> No significant change.

West Valley Demonstration Project

Overview

Cleanup of the West Valley Demonstration Project will support the Department of Energy to meet the challenges of the nation's Manhattan Project and Cold War legacy responsibilities. The West Valley Demonstration Project is responsible for stabilizing and dispositioning low-level radioactive waste and transuranic waste and decontaminating and decommissioning of excess facilities, tanks, and equipment.

The West Valley Demonstration Project is conducted at the site of the only commercial nuclear fuel reprocessing facility to have operated in the United States. The Department'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 the high-level radioactive waste in a form suitable for transportation and disposal;
- Develop containers suitable for permanent disposal of the solidified high-level radioactive waste;
- Transport, in accordance with applicable law, high-level radioactive waste canisters to an appropriate Federal repository for permanent disposal;
- Dispose of low-level radioactive waste and transuranic waste produced by high-level radioactive waste solidification activities; and
- Decontaminate and decommission tanks and facilities used for solidification of high-level radioactive waste, as well as any material and hardware used in connection with the Project, in accordance with Nuclear Regulatory Commission requirements.

Highlights of the FY 2023 Budget Request

The major activities planned for the West Valley Demonstration Project for FY 2023 focus on the ongoing demolition of the Main Plant Process Building; continuing site operations and maintenance; installation of a new Guard House, and disposition of newly generated and legacy waste.

FY 2022 and FY 2023 Key Milestones/Outlook

- (2022) Complete Main Plant Process Building Deactivation activities.
- (2022) Begin Demolition of Main Plant Process Building.
- (2022) Complete shipment and disposal of Permeable Treatment Wall soils and Soil Containment Structure, and restoration of area.
- (2022) Complete demolition and waste disposal of the Load in/Load Out Facility.
- (2023) Continue installation of new Guard House.

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) requires 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.
- A 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 Project.

- Stipulation of Compromise Settlement agreement (1987) represents the legal compromise reached between the Coalition on West Valley Nuclear Waste and Radioactive Waste Campaign and DOE regarding development of a comprehensive Environmental Impact Statement for the Project and for on-site and off-site disposal of low-level radioactive waste.
- 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 Department with respect to project activities.
- The Final Environmental Impact Statement for Decommissioning and/or Long-Term Stewardship and the associated Record of Decision issued in April 2010. The Record of Decision was "Phased Decision-making" in which the decommissioning will be completed in two phases.

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:

- Phase 1 Decommissioning – Facility Disposition contract, which was awarded to CH2M Hill BWXT West Valley, LCC, has a contract period of performance from August 29, 2011, through an estimated completion date of August 29, 2024. There are no options on this cost-plus-award-fee contract.
- Probabilistic Performance Assessment contract was initially awarded in September 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. A modification to the contract is anticipated to be awarded in 2022.
- Technical Assistance Contract which 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.
- Supplemental EIS Development contract, which was awarded to SC&A in FY 2017 to evaluate alternatives for completing DOE's mission at West Valley Demonstration Project and bringing the site to closure.

Strategic Management

The Department has completed the first two mandates of the West Valley Demonstration Project Act - solidification of the liquid high-level radioactive waste and development of containers suitable for permanent disposal of the high-level radioactive waste. There are currently 278 high-level radioactive waste canisters that have been produced that are in safe storage in a cask storage system. The remaining work to be completed by DOE at West Valley includes: (1) storage and shipment of the high-level radioactive waste canisters for off-site disposal; (2) disposal of Project-generated low-level radioactive waste and transuranic waste; and (3) facility decontamination and decommissioning.

DOE will continue to focus on low-level radioactive waste 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, the Department 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 radioactive waste tanks until their final closure pathway is determined. The Main Plant Process Building is being deactivated and will be demolished consistent with the Environmental Impact Statement Record of Decision. The Vitrification Facility has been deactivated and demolished to grade-level. Below-grade removal of the Vitrification Facility will be consistent with the Environmental Impact Statement Record of Decision. All 46 unneeded buildings and facilities (balance of site facilities or BOSFs) have been removed.

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 radioactive 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 non-defense transuranic waste has been included within the Department's Final Environmental Impact Statement for the Disposal of Greater-Than-Class C Low-Level Radioactive Waste and Greater-Than-Class-C-Like Waste that was published in February 2016. The non-defense transuranic waste will be packaged and stored until a disposition path is available.

West Valley Demonstration Project

Funding (\$K)

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted	FY 2023 Request vs FY 2021 Enacted (%)
Defense Environmental Cleanup					
Safeguards and Security					
OH-WV-0020 / Safeguards and Security-West Valley	4,298	4,298	4,377	+79	+2%
Non-Defense Environmental Cleanup					
West Valley Demonstration Project					
OH-WV-0013 / Solid Waste Stabilization and Disposition-West Valley	9,110	9,110	23,547	+14,437	+158%
OH-WV-0040 / Nuclear Facility D&D-West Valley	79,003	79,003	66,335	-12,668	-16%
Subtotal, West Valley Demonstration Project	88,113	88,113	89,882	+1,769	+2%
Total, West Valley Demonstration Project	92,411	92,411	94,259	+1,848	+2%

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

FY 2021 Enacted	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted
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Defense Environmental Cleanup

Safeguards and Security

OH-WV-0020 / Safeguards and Security-West Valley

- No significant change.

4,298	4,377	+79
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Non-Defense Environmental Cleanup

West Valley Demonstration Project

OH-WV-0013 / Solid Waste Stabilization and Disposition-West Valley

- Increase supports waste processing, shipping and disposal of demolition debris created by the Main Plant Processing Building demolition, and processing/packaging and disposition of oversized legacy waste.

9,110	23,547	+14,437
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OH-WV-0040 / Nuclear Facility D&D-West Valley

- Decrease supports the incorporation of lessons learned from demolition activities across the complex to manage demolition debris piles to keep them as small as possible while supporting waste processing, shipping and disposal of demolition debris of the Main Plant Processing Building.

79,003	66,335	-12,668
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Total, West Valley Demonstration Project

92,411	94,259	+1,848
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Safeguards and Security-West Valley (PBS: OH-WV-0020)

Overview

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

The Safeguards and Security Program at the West Valley Demonstration Project protects government assets, information, and technology systems to support the cleanup of this spent fuel reprocessing facility. These activities provide for overall site access security and protection of personnel and government property.

This scope will continue until DOE’s mission at the West Valley Demonstration Project is complete. The Cyber Security Program at West Valley Demonstration Project protects government information and technology systems to support the cleanup of this spent fuel reprocessing facility.

Safeguards and Security-West Valley (PBS: OH-WV-0020)

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
\$4,298,000	\$4,377,000	+\$79,000
<ul style="list-style-type: none"> • Provided physical and cyber security by an on-site guard force to ensure the Department’s information resources are identified and protected. • Continued program management to oversee the security program, including training and qualifications for the West Valley Demonstration Project. 	<ul style="list-style-type: none"> • Provide physical security with an on-site guard force to ensure the Department's information resources are identified and protected. • Continue program management to oversee the security program including cybersecurity, training and qualifications for the West Valley Demonstration Project. 	<ul style="list-style-type: none"> • No significant change.

Solid Waste Stabilization and Disposition-West Valley (PBS: OH-WV-0013)

Overview

This PBS is 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 radioactive waste and transuranic waste produced as a result of high-level radioactive waste solidification activities. When this project is completed, all West Valley Demonstration Project-generated, low-level radioactive 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 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
\$9,110,000	\$23,547,000	+\$14,437,000
<ul style="list-style-type: none"> • Processed, shipped and disposed of legacy mixed low-level waste to be in compliance with the Site Treatment Plan. • Processed, shipped and disposed of legacy and remediation low-level waste. • Size-reduced and packaged remote-handled and contact-handled transuranic waste for onsite storage. 	<ul style="list-style-type: none"> • Store legacy transuranic waste. • Store newly generated transuranic waste. • Ship and dispose of all other newly generated waste, primarily the demolition debris created by the Main Plant Process Building. • Process and package oversized legacy waste. 	<ul style="list-style-type: none"> • Increase supports waste processing, shipping and disposal of demolition debris created by the Main Plant Processing Building demolition, and processing/packaging and disposition of oversized legacy waste.

Nuclear Facility D&D-West Valley (PBS: OH-WV-0040)

Overview

This PBS is 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 radioactive 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 the approved decommissioning plan. The decommissioning plan includes the relocation of 278 high-level radioactive 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). 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 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
\$79,003,000	\$66,335,000	-\$12,668,000
<ul style="list-style-type: none"> Maintained site services. Continued deactivation of highly contaminated cells in the Main Plant Process Building. Continued removal of excess ancillary facilities. 	<ul style="list-style-type: none"> Maintain Site Services. Continue demolition of the above grade portion of the Main Plant Process Building. Maintain the underground storage tanks, the Nuclear Regulatory Commission-Licensed Disposal Area, and the Permeable Treatment Wall. Manage and maintain site infrastructure. Conduct environmental monitoring. Install new Guard House. 	<ul style="list-style-type: none"> Decrease supports the incorporation of lessons learned from demolition activities across the complex to manage demolition debris piles to keep them as small as possible while supporting waste processing, shipping and disposal of demolition debris of the Main Plant Processing Building.

Energy Technology Engineering Center

Overview

The Energy Technology Engineering Center (ETEC) supports the Department's 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 was a collection of DOE facilities within Area IV of the Santa Susana Field Laboratory. The Boeing Company is the landowner. By the end of 2021, all DOE-owned buildings were demolished. Ongoing and planned activities at the site before site closure include remediation of soil and groundwater contamination which will be implemented after continued collaboration with the State of California.

The Energy Technology Engineering Center site priorities are driven by several compliance agreements, which drive both the timing and sequence of cleanup priorities as follows:

1. Issue remaining Records of Decision for soils.
2. Install final groundwater remedies.
3. Continue planning to clean up contaminated soil and groundwater in Area IV and the Northern Buffer Zone to a level that is protective of human health and the environment at the Santa Susana Field Laboratory.

Highlights of the FY 2023 Budget Request

The Energy Technology Engineering Center's FY 2023 request will enable the site to continue making progress toward completion of cleanup, including planning for groundwater and soil remediation. The site will continue to work with the State of California to gain approval of the Groundwater Corrective Measures Implementation Plan to either increase interim measures or initiate final groundwater remediation and the Soil Remedial Action Implementation Plan. The site will continue the current Groundwater Interim Measures for areas that exceed 1,000 parts per billion for trichloroethylene. Once the Record of Decision for soils is published, the site will continue its collaborations with the State of California for planning a timely initiation of the soil remediation. It is important to note that until the State of California completes the California Environmental Quality Act certification of the Programmatic Environmental Impact Report, the Department cannot initiate soil remediation.

FY 2022 & FY 2023 Key Milestones/Outlook

- (FY 2022) Continue planning of groundwater final remedy in collaboration the State of California.
- (FY 2022) Continue discussions with the State of California on planning soil remediation.
- (FY 2022/23) Submit Groundwater Corrective Measures Implementation Plan for approval from the State of California.

Regulatory Framework

Prior decontamination and demolition activities of the radiologically contaminated facilities at the Energy Technology Engineering Center were conducted under Atomic Energy Act authority. In May 2007, the U.S. District Court for the Northern District of California directed the Department 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, and for the State of California to complete an Environmental Impact Report in accordance with the California Environmental Quality Act (CEQA). The Resource Conservation and Recovery Act groundwater cleanup is regulated by Department of Toxic Substance Control consistent with a signed Consent Order issued by Department of Toxic Substance Control in August 2007. The Department completed negotiation of an Administrative Order on Consent with Department of Toxic Substance Control in December 2010 for all remaining soil characterization and remediation.

The Department has completed nearly all National Environmental Policy Act (NEPA) requirements for the Energy Technology Engineering Center site. In May 2008, the Department published a Notice of Intent to prepare an Environmental Impact Statement, which was subsequently amended in February 2014. The Department then issued the Draft Environmental Impact Statement in January 2017 and published the Final Environmental Impact Statement in December 2018, supported by extensive studies of the site for radiological and chemical contamination conducted by DOE and the U.S. Environmental Protection Agency. The Department has published two Records of Decision: the first for Building Demolition in September 2019, the second for Groundwater Remediation in November 2020. The final National Environmental Policy Act requirement for the Energy Technology Engineering Center site is for the Department to issue a Record of Decision for Soil Remediation.

Before any additional groundwater or soils cleanup is initiated, the Department will continue working with California's Department of Toxic Substance Control. The State approves the Department's remediation plans subject to the California Environmental Quality Act-required Program Environmental Impact Report, which is not yet completed for the Santa Susana Field Laboratory; California issued their Draft Program Environmental Impact Report in September 2017. Further cleanup of groundwater or soils will require California to complete and certify its Program Environmental Impact Report.

In the meantime, ongoing and additional interim remediation can continue with agreement from the State of California. In May 2020, DOE and Department of Toxic Substance Control executed an Order on Consent for Interim Actions that provided the framework for building demolition and agreed to demolish ten buildings. In October 2020, the DOE and Department of Toxic Substance Control extended that agreement which allowed for the demolition the final eight DOE-owned buildings by executing an Amendment to the Order on Consent. These interim actions have been completed with the demolition of all DOE-owned buildings and waste shipped off-site for disposal in FY 2022.

Contractual Framework

The Energy Technology Engineering Center demolition, surveillance and maintenance contractor will continue to perform general environmental monitoring, surveillance and maintenance in FY 2022-2023. The current contract expires in September 2022, with two six-month options that could extend through September 2023.

The regulatory/technical support contractor is supporting the development of the National Environmental Policy Act and other regulatory documentation. The contract expires in December 2022.

In December 2021, the DOE awarded a cooperative agreement with the Santa Ynez Band of Chumash Indians (SYBCI) that provides funds to the local federally recognized Tribe to study and develop educational materials documenting the cultural significance of the Burro Flats portion of the Santa Susana Field Laboratory and how the past, current, and future activities have affected and can help preserve the site. This award furthers the site's ongoing collaboration with the Tribe and supports the National Historic Preservation Act Section 106 Programmatic Agreement with the State of California Historic Preservation Officer that was signed in September 2019.

Strategic Management

The Department will continue to work with the State of California to achieve the cleanup of the Site.

Energy Technology Engineering Center

Funding (\$K)

FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted	FY 2023 Request vs FY 2021 Enacted (%)
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Non-Defense Environmental Cleanup

Small Sites

Energy Technology Engineering Center

CBC-ETEC-0040 / Nuclear Facility D&D-Energy Technology Engineering Center

12,000	12,000	26,409	+14,409	+120%
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**Energy Technology Engineering Center
Explanation of Major Changes (\$K)**

FY 2021 Enacted	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted
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Non-Defense Environmental Cleanup

Small Sites

Energy Technology Engineering Center

CBC-E TEC-0040 / Nuclear Facility D&D-Energy Technology Engineering Center

- Increase supports the completion of decontamination and decommissioning of remaining structures; completion of soils and groundwater planning activities as well as completion of the demolition of all 18 DOE buildings; and initiates soil remediation after the Record of Decision is published.

12,000	26,409	+14,409
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Total, Energy Technology Engineering Center

12,000	26,409	+14,409
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Nuclear Facility D&D-Energy Technology Engineering Center (PBS: CBC-ETEC-0040)

Overview

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

The purpose of this PBS scope is to: 1) clean up contaminated release sites; 2) perform remediation of both contaminated groundwater and soil; and 3) remove radioactive and hazardous waste from the site applying (when possible) waste minimization principles. Currently, decontamination, decommissioning, and demolition are complete. Soil and groundwater characterization has been 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 Energy Technology Engineering Center facilities. Additionally, the State of California issued a Consent Order in 2007 for groundwater remediation and an Administrative Order on Consent in 2010 for cleanup of soils to a background level established by the State.

The end-state is to complete cleanup of soils and groundwater for both radiological and chemical contamination. The site will then be transferred to The Boeing Company, which owns the land. The completion of the State Programmatic Environmental Impact Report will affect some of the cleanup activities at Energy Technology Engineering Center and the Department will continue to work with the State to achieve this cleanup.

Nuclear Facility D&D-Energy Technology Engineering Center (PBS: CBC-ETEC-0040)

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes Request vs FY 2021 Enacted	FY 2023
\$12,000,000	\$26,409,000		+\$14,409,000
<ul style="list-style-type: none"> Performed ongoing program support and landlord services. Supported Resource Conservation and Recovery Act facility investigation program for groundwater including sampling, analysis, and report preparations. Continued building demolition and waste disposal. 	<ul style="list-style-type: none"> Complete soils and groundwater planning activities. Complete Soil Remediation Action Implementation Plan. Initiate soil remediation planning after Record of Decision is published. Actual cleanup is dependent on State completion of the Programmatic Environmental Impact Report. Initiate groundwater remediation after implementation plan is approved by the State regulators and State completion of the Programmatic Environmental Impact Report. 	<ul style="list-style-type: none"> Increase supports the completion of decontamination and decommissioning of remaining structures; completion of soils and groundwater planning activities as well as completion of the demolition of all 18 DOE buildings; and initiates soil remediation after the Record of Decision is published. 	

Moab

Overview

The Moab Uranium Mill Tailings Remedial Action Project supports the Department's cleanup of radioactive and chemical waste resulting from the Manhattan Project and Cold War activities. The project involves the excavation and transportation of a 16 million ton pile of uranium mill tailings from near the Colorado River at the Moab, Utah site, and placement/disposal at an engineered disposal cell constructed at Crescent Junction, Utah. Through the end of calendar year 2021, the Project has shipped more than 12 million tons of material.

Direct maintenance and repair at the Moab Uranium Mill Tailings Remedial Action Project is estimated to be \$536,000.

Highlights of the FY 2023 Budget Request

EM's FY 2023 request supports efforts to accelerate site closure at the Moab site. The request supports safely excavating, transporting, and placing mill tailings from the Moab site to the disposal cell at Crescent Junction, Utah; work to place an interim cover over a portion of the disposal cell and work to expand the disposal cell; and extracting contaminated groundwater and injecting freshwater to protect the Colorado River.

FY 2022 & FY 2023 Key Milestones/Outlook

- (September 2022) Excavate, transport, and dispose of approximately 1,000,000 tons of tailings.
- (September 2023) Excavate, transport, and dispose of approximately 1,200,000 tons of tailings.

Regulatory Framework

Remediation must be performed in accordance with Title I of the Uranium Mill Tailings Radiation Control Act and the cleanup standards established under 40 CFR 192.

Contractual Framework

North-Wind Portage holds the Remedial Action Contract, which is a 10-year contract that utilizes cost reimbursement and fixed price task orders for cleanup activities. S&K Logistics Services holds the Technical Assistance Contract, a five-year firm-fixed-price and time-and-materials-type contract.

Strategic Management

The Department will work aggressively to complete cleanup at the Moab site. This involves the transport of uranium mill tailings away from their current location near the Colorado River and Arches National Park to a DOE disposal facility in Crescent Junction, Utah.

Moab

Funding (\$K)

FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted	FY 2023 Request vs FY 2021 Enacted (%)
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Non-Defense Environmental Cleanup

Small Sites

Moab

CBC-MOAB-0031 / Soil and Water Remediation-Moab

47,833	47,833	67,000	+19,167	+40%
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Moab
Explanation of Major Changes (\$K)

FY 2021 Enacted	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted
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Non-Defense Environmental Cleanup

Small Sites

Moab

CBC-MOAB-0031 / Soil and Water Remediation-Moab

<ul style="list-style-type: none"> • Increase reflects additional shipping by Union Pacific (primarily through the utilization of overtime/weekend/holidays) and the excavation/expansion of the disposal cell in Junction City. 	47,833	67,000	+19,167
Total, Moab	47,833	67,000	+19,167

Soil and Water Remediation-Moab (PBS: CBC-MOAB-0031)

Overview

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

The project scope includes remediating radioactive uranium mill tailings, mill debris, contaminated ground water, and contaminated vicinity properties at the former Atlas Minerals Corporation uranium ore processing site. The Department became responsible for this mission upon enactment of the Floyd D. Spence National Defense Authorization Act of 2001. 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 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
\$47,833,000	\$67,000,000	+\$19,167,000
<ul style="list-style-type: none"> Conducted Moab and Crescent Junction operation and maintenance. Operated interim remedial action for contaminated groundwater. Excavated tailings and transport (4 trains/week) from mill site to the disposal cell (over 1,000,000 tons). Performed operations and maintenance of the materials handling system and infrastructure. Continued equipment maintenance/replacement. Placed a portion of the interim cover. Excavated a portion of the disposal cell. 	<ul style="list-style-type: none"> Conduct Moab and Crescent Junction operation and maintenance. Operate interim remedial action for contaminated groundwater. Excavate tailings and transport (4 trains/week and additional shipments during the year on weekends or holidays) to the disposal cell (approximately 1,200,000 tons). Continue to support additional staff using overtime to accommodate increased shipping. Perform operations and maintenance of the materials handling system and infrastructure. Continue equipment maintenance/replacement. Place a portion of the interim cover. Excavate/expand a portion of the disposal cell to accommodate increased shipping. 	<ul style="list-style-type: none"> Increase reflects additional shipping by Union Pacific (primarily through the utilization of overtime/weekend/holidays) and the excavation/expansion of the disposal cell in Junction City.

Other Sites

Overview

In supporting the Department of Energy (DOE) to meet the challenges of the Nation's Manhattan Project and Cold War environmental legacy responsibilities, the Environmental Management (EM) Program manages 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 2023. The sites included in this section are in the final stages of cleanup and closure or have actually transitioned to the post-closure phase. Additionally, this account includes a site/facility for which DOE has no liability or mission requirement, but for which Congress has provided funds.

Lawrence Berkeley National Laboratory

Over the past nine years, Congress has provided approximately \$200 million in funding. DOE will continue utilizing these funds to deactivate, decommission and demolish various facilities in the Old Town and Bayview areas of Lawrence Berkeley National Laboratory and remove associated contaminated soil. As funds become available, additional cleanup will be performed in the Old Town and Bayview areas. There is no FY 2023 funding requested.

EM Consolidated Business Center

The EM Consolidated Business Center (EMCBC) provides a wide range of activities supporting DOE's national environmental cleanup mission, from financial management, contracting, technical support and information resource management. EMCBC also has 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. EMCBC serves as the lead EM office for new cleanup contract acquisitions required to support the EM program mission. Respectively, EMCBC administers Closure Sites activities for Rocky Flats, Fernald, Mound and provides oversight, technical, project controls, cybersecurity and legal/litigation support for the Separations Process Research Unit, EMCBC New York Project Support Office, Nevada, West Valley, Moab, Energy Technology Engineering Center, and EM work at Lawrence Berkeley National Laboratory and Brookhaven National Laboratory.

Highlights of the FY 2023 Budget Request

Continue regulatory support of the Fernald Closure Project, the ongoing Rocky Flats Closure Project's legal requirements, and small sites' litigation and support requirements.

Strategic Management

The EM program will conduct closure and post-closure administrative activities at a number of sites across the nation.

Other Sites

Funding (\$K)

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted	FY 2023 Request vs FY 2021 Enacted (%)
Defense Environmental Cleanup					
Closure Sites					
Closure Sites Administration					
CBC-0100-EM / Litigation Support	2,087	2,087	2,452	+365	+17%
CBC-0100-FN / CBC Post Closure Administration - Fernald	1,100	1,100	1,062	-38	-3%
CBC-0100-RF / CBC Post Closure Administration - Rocky Flats	1,800	1,800	553	-1,247	-69%
Subtotal, Closure Sites Administration	4,987	4,987	4,067	-920	-18%
Non-Defense Environmental Cleanup					
Small Sites					
Lawrence Berkeley National Laboratory					
CBC-LBNL-0040 / Decontamination and Decommissioning-Lawrence Berkeley National Laboratory	30,100	30,100	0	-30,100	-100%
Other Sites					
CBC-0040-EF / Excess Office of Science Facilities	10,000	10,000	0	-10,000	-100%
Total, Small Sites	40,100	40,100	0	-40,100	-100%
Total, Other Sites	45,087	45,087	4,067	-41,020	-91%

Other Sites
Explanation of Major Changes (\$K)

	FY 2021 Enacted	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted
Defense Environmental Cleanup			
Closure Sites			
Closure Sites Administration			
CBC-0100-EM / Litigation Support			
• No significant change.	2,087	2,452	+365
CBC-0100-FN / CBC Post Closure Administration - Fernald			
• Decrease reflects funding requirements for Fernald Workers II Settlement and post-closure administrative costs.	1,100	1,062	-38
CBC-0100-RF / CBC Post Closure Administration - Rocky Flats			
• Decrease reflects the reduction in anticipated litigation support/activities associated with the Rocky Flats site as the support requirements associated with the Cook case and other related litigation closes out.	1,800	553	-1,247
Non-Defense Environmental Cleanup			
Small Sites			
Lawrence Berkeley National Laboratory			
CBC-LBNL-0040 / Decontamination and Decommissioning-Lawrence Berkeley National Laboratory			
• No funding requested in FY 2023.	30,100	0	-30,100
Other Sites			
CBC-0040-EF / Excess Office of Science Facilities			
• No funding requested in FY 2023.	10,000	0	-10,000
Total, Other Sites	45,087	4,067	-41,020

Litigation Support (PBS: CBC-0100-EM)

Overview

EMCBC has responsibility to provide ongoing litigation support for all supported sites. The PBS scope is to provide litigation support related to Closure Sites (Rocky Flats, Fernald, and Mound), as well as legal/litigation support for all active EMCBC sites.

Litigation Support (PBS: CBC-0100-EM)

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
\$2,087,000	\$2,452,000	+\$365,000
<ul style="list-style-type: none"> • Provided ongoing litigation support to sites supported by the EM Consolidated Business Center. 	<ul style="list-style-type: none"> • Provide ongoing litigation support to sites supported by the EM Consolidated Business Center. 	<ul style="list-style-type: none"> • No significant change.

CBC Post Closure Administration – Fernald (PBS: CBC-0100-FN)

Overview

This PBS is 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 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
\$1,100,000	\$1,062,000	-\$38,000
<ul style="list-style-type: none"> • Ongoing Fernald Workers II class action lawsuit and contract closeout requirements. 	<ul style="list-style-type: none"> ▪ Fund the Fernald Workers II class action lawsuit and contract closeout at the Fernald closure site. 	<ul style="list-style-type: none"> • Decrease reflects funding requirements for Fernald Workers II Settlement and post-closure administrative costs.

CBC Post Closure Administration – Rocky Flats (PBS: CBC-0100-RF)

Overview

This PBS is 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 DOE or former Rocky Flats contractors is resolved. The PBS scope 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 labor for the vault classifiers.

CBC Post Closure Administration - Rocky Flats (PBS: CBC-0100-RF)

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
\$1,800,000	\$553,000	-\$1,247,000
<ul style="list-style-type: none"> Supported Rocky Flats Closure Project’s legal requirements and court orders for the Cook and Stone cases. Supported Rocky Flats records vault lease and records management costs. 	<ul style="list-style-type: none"> Support Rocky Flats Closure Project’s legal requirements. Support records vault lease and records management costs. Pay/Reimburse Workers’ Compensation claims and support Contract Closeout. 	<ul style="list-style-type: none"> Decrease reflects the reduction in anticipated litigation support/activities associated with the Rocky Flats site as the support requirements associated with the Cook case and other related litigation closes out.

Mission Support

Overview

EM's Mission Support activities encompass an array of functions that support the overall cleanup mission. These activities are typically managed through the Headquarters office(s) since they are supportive of various crosscutting EM and DOE initiatives.

Policy, Management, and Technical Support

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. This program also 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, Tribal Nations, and stakeholders regarding the EM program's activities.

Minority Serving Institutions Partnership Program

EM recognizes that successfully completing its legacy environmental cleanup mission will require maintaining a well-trained, technically skilled, and diverse workforce. EM has mission-specific workforce needs, requiring education and training beyond the traditional classroom coursework. Engagement with universities and colleges provides an opportunity to inform students on the real challenges of the EM mission and position a future workforce "pipeline." This innovative program was designed to help address EM's future workforce needs by partnering with academic, government, and DOE contractor organizations to mentor future minority scientists and engineers in the research, development, and deployment of new technologies that address EM's environmental cleanup challenges. Minority representation in critical science and engineering fields is an important part of EM's vision for this future workforce. EM has created and designed the Minority Serving Institutions Partnership Program at Minority Serving Institutions to engage students in research and related to science, technology, engineering, and mathematics efforts supporting EM's needs. Opportunities are provided to institutions of higher education that have been identified by the U.S. Department of Education as having a significant percentage of undergraduate minority students and those that serve certain populations of minority students under various programs created by Congress. These include:

- Historically Black Colleges and Universities;
- Hispanic-serving Institutions;
- Tribal Colleges and Universities;
- Alaska Native-serving Institutions or Native Hawaiian-serving Institutions;
- Predominantly Black Institutions;
- Asian American or Native American Pacific Islander-serving Institutions; and
- Native American-serving Nontribal Institutions.

The EM Minority Serving Institutions Partnership Program was designed to address DOE's future workforce needs by partnering with academic, government, and DOE contractor organizations to mentor future minority scientists and engineers in the research, development, and deployment of new technologies. Moving forward, EM plans to consolidate this existing Minority Serving Institutions Partnership Program to include the Minority Serving Institution and Historically Black Colleges and Universities, Science, Technology, Engineering, and Mathematics, Cybersecurity, and Manufacturing Consortium (Consortium) and include the following elements:

- Competitive research awards: Research contracts potentially awarded on EM mission-related research and award recipients will partner with national laboratories.
- Internships: 10-week summer internships hosted at DOE national laboratories, the Savannah River Site, and EM Headquarters.

- Savannah River Environmental Sciences Field Foundation: 10-week hands on summer program offering course credits. Research projects would be affiliated with the Savannah River Ecology Laboratory and the Savannah River National Laboratory.
- Consortium Program: This consortium builds on the program’s success, and expand activities to create jobs, job training and advancing education in science, technology, engineering, and mathematics, cybersecurity, manufacturing, health and environmental science, and technology development.
 - o Technology, Curriculum, and Professional Development Program: Grants and contracts potentially awarded related to instrumentation and specialized equipment. Workshops and site visits will be provided to ensure professional development training.
 - o EM/Minority Serving Institutions Shared Interest Research Partnership Program: Grants or contracts potentially awarded on targeted research.
 - o Postdoctoral Fellows Program: Candidates who obtain their PhD from a Minority Serving Institution or their undergraduate from a Minority Serving Institution are eligible to apply. Opportunities will be available across the EM cleanup complex.
 - o Graduate Fellowship Program: This is year-long fellowship program that includes salary, travel for conferences, and professional networking events.

Community Capacity Building

A Community Capacity Building Grant Program is being established to support disadvantaged communities by providing assistance and capacity building based on needs identified through stakeholder engagement and Tribal consultation. The goal is to provide resources to areas of high or persistent poverty that are not benefitting from the significant economic activity generated by EM in and around these communities. In certain cases, these communities were moved so that the U.S. Government could execute its mission during the Cold War. This program is designed to enhance existing activities and develop new activities as needed for disadvantaged communities. The Community Capacity Building Program will allow for an expansion of investments that have already proven effective and potential new activities supported by these communities:

- Site reindustrialization and land transfer for community investment and reuse: To create new jobs for the surrounding disadvantaged communities that have experienced job loss and ever-deepening economic hardship.
- Community restoration projects: To enable disadvantaged communities and Tribal Nations to restore important aspects of their communities.
- Community and Tribal Nations infrastructure projects: To provide infrastructure projects that are needed by disadvantaged communities and Tribal Nations to increase resilience such as green infrastructure and other investment.
- Educational capacity for stakeholders and Tribal members to assist with independent oversight of EM cleanup activities: To enable communities and Tribal Nations to have more of a voice related to EM cleanup activities and build additional trust with EM.

Technology Development

In FY 2023, the Technology Development Program will focus its efforts on facilitating the use of innovative solutions and state-of-the-art technology to reduce costs, accelerate schedules, protect human health and environment, and mitigate vulnerabilities. The infusion of new technology and innovative solutions are necessary to fill science and technology-rooted mission gaps and to improve or optimize baseline technologies.

The FY 2023 budget request is structured to address the need for near-term innovations and mission-enabling technologies. Near-term innovations represent new technologies and innovative solutions that are needed to 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. The technology program also includes investments that could impact the cost, risk, and duration of the overall lifecycle of the program.

Recognizing that many mission enabling technologies are commercially available in non-nuclear industry sectors, have been developed and exist in federal agencies to support highly specialized and mission-specific objectives, EM will seek to transfer these technologies to support nuclear cleanup. Technical assistance will look to leverage the technical expertise used at one site to other sites across the DOE complex with similar technical challenges.

Environmental Management/ Mission Support

EM collaborates and partners with technologists in other U.S. executive departments and independent agencies to leverage highly specialized expertise, government assets and facilities, and publicly funded programs. Access to non-DOE national laboratories and technology centers, non-DOE federally funded research and development centers, non-DOE testing facilities and proving grounds, as well as university affiliated research centers, can greatly increase opportunities for cleanup innovation and enhances cleanup capabilities.

Mercury Storage Facility

The Mercury Export Ban Act of 2008 (Public Law 110-414) as amended by the Frank R. Lautenberg Chemical Safety for the 21st Century Act (Public Law 114-182), 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, as amended, requires that a storage facility be operational by January 1, 2019. Additionally, DOE's mercury storage operations will be subject to the requirements of the Resource Conservation and Recovery Act. EM is responsible for designating a DOE facility for the long-term management and storage of elemental mercury and the Office of Legacy Management is responsible for operation of the facility. 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, and developed a Supplemental Environmental Impact Statement. The final Supplement to the Environmental Impact Statement was issued in October 2013. EM published a Supplement Analysis in June 2019 that analyzed changes that have occurred since 2011. EM published the Record of Decision, designating Waste Control Specialists LLC in Andrews, Texas, and the final rule on Mercury Management and Storage fees in December 2019. Nevada Gold Mines and Coeur Mining filed lawsuits in opposition to the fee rule and designation. DOE settled the Nevada Gold Mines lawsuit and entered into a settlement agreement that remanded the fee rule and removed the designation. DOE expects the conveyance of title of 112 metric tons of elemental mercury in FY 2022 pursuant to the Nevada Gold Mines legal settlement. DOE is performing additional National Environmental Policy Act environmental analyses. A designation and revised fee rule will follow the environmental analyses, enabling the acceptance of elemental mercury from domestic sources.

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, the 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 February 2022, 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.^[1]

^[1] DOE has fulfilled its reimbursement obligation to two of the ten sites, Rio Algom Mining LLC, and Western Nuclear, Inc. These companies will continue to complete their remediation efforts.

Mission Support

Funding (\$K)

FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted	FY 2023 Requested vs FY 2021 Enacted (%)
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Defense Environmental Cleanup

Innovation and Technology Development

Mission Support

HQ-TD-0100 / Technology Development

30,000 30,000 25,000 -5,000 -17%

Program Support

Mission Support

EM-HBCU-0100 / Minority Serving Institution Partnerships Program

6,000 6,000 56,000 +50,000 +833%

HQ-CCB-0100 / Community Capacity Building

0 0 40,000 +40,000 +100%

HQ-MS-0100 / Policy, Management, and Technical Support

6,979 6,979 7,239 +260 +4%

Subtotal, Mission Support

12,979 12,979 103,239 +90,260 +695%

Total, Defense Environmental Cleanup

42,979 42,979 128,239 +85,260 +198%

Non-Defense Environmental Cleanup

Mercury Storage Receipts

Mission Support

HQ-MSF /

3,000 3,000 3,000 +0 +0%

Management and Storage of Elemental Mercury

Mission Support

HQ-MSF-0100 / Management and Storage of Elemental Mercury

2,100 2,100 2,100 +0 +0%

Total, Non-Defense Environmental Cleanup

5,100 5,100 5,100 +0 +0%

Uranium Enrichment Decontamination and Decommissioning Fund

U/Th Reimbursements

Mission Support

HQ-UR-0100 / Reimbursements to Uranium/Thorium Licensees

5,000 5,000 24,400 +19,400 +388%

Total, Mission Support

53,079 53,079 157,739 +104,660 +197%

Environmental Management/

Mission Support

Mission Support
Explanation of Major Changes (\$K)

FY 2021 Enacted	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted
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Defense Environmental Cleanup

Innovation and Technology Development

Mission Support

HQ-TD-0100 / Technology Development

- The decrease reflects the planned reduction of new test bed programs at various sites.

30,000 25,000 -5,000

Program Support

EM-HBCU-0100 / Minority Serving Institution Partnerships Program

- Increase support for EM'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.

6,000 56,000 +50,000

HQ-CCB-0100 / Community Capacity Building

- This program will enhance existing activities and develop new activities that will create grants for disadvantaged communities around EM cleanup sites to reduce high or persistent poverty.

0 40,000 +40,000

HQ-MS-0100 / Policy, Management, and Technical Support

- Supports increase costs for the Strategic Sourcing Initiative.

6,979 7,239 +260

Non-Defense Environmental Cleanup

Management and Storage of Elemental Mercury

HQ-MSF-0100 / Management and Storage of Elemental Mercury

- No change.

2,100 2,100 +0

Mercury Storage Receipts

HQ-MSF /

- No change.

3,000 3,000 +0

Uranium Enrichment Decontamination and Decommissioning Fund

U/Th Reimbursements

HQ-UR-0100 / Reimbursements to Uranium/Thorium Licensees

- Increase will provide payment to licensees for anticipated and approved but unpaid outstanding claims.

5,000 24,400 +19,400

Total, Mission Support

53,079 157,739 +104,660

**Environmental Management/
Mission Support**

FY 2023 Congressional Budget Justification

FY 2021 Enacted	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted
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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.

Policy, Management, and Technical Support (PBS: HQ-MS-0100)

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
\$6,979,000	\$7,239,000	+\$260,000
<ul style="list-style-type: none"> • Provided support for DOE’s Strategic Sourcing Initiative to purchase commodities through a supply chain framework, which results in cost avoidance on purchases. • Provided support for various Secretarial and Departmental initiatives, including the Defense Contracts Audit Agency audits, Government Industry Data Exchange Program and Consolidated Accounting Investment System. • Provided expertise in the areas of safety, health and security, emergency management, quality assurance, nuclear criticality safety, and risk management. • Provided 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. 	<ul style="list-style-type: none"> • Continue support for DOE’s Strategic Sourcing Initiative to purchase commodities through a supply chain framework, which results in cost avoidance on purchases. • Continue support for various Secretarial and Departmental initiatives, including the Defense Contracts Audit Agency audits, Government Industry Data Exchange Program and Consolidated Accounting Investment System. • Continue to provide expertise in the areas of safety, health and security, emergency 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 	<ul style="list-style-type: none"> • Supports increase costs for the Strategic Sourcing Initiative.

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- Provided support to various advisory groups such as the Nuclear Regulatory Commission, National Academy of Sciences and Low-Level Radioactive Waste Forum, to obtain technical assistance and expertise that indirectly supports EM mission objectives.
 - Provided support to packaging and transportation stakeholders outreach grants.
 - Provided rapid response from technical experts or “External/Internal” review teams to address emerging, imminent technical issues impeding site cleanup and closure.
 - Provided technical solution projects designed to reduce near-term technical risks and technical assistance to include site troubleshooting, consulting, scientific or technical problem solving.

- 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.

Community Capacity Building (PBS: HQ-CCB-0100)

Overview

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

This program is designed to enhance existing activities and develop new activities for disadvantaged communities around DOE cleanup sites. EM will leverage activities that are designed to help communities reduce high or persistent poverty where a substantial portion of the populations is living below the poverty level. These include site reindustrialization and land transfer for community investment and reuse; community restoration and infrastructure projects; and educational capacity to assist with independent oversight of EM cleanup activities.

Community Capacity Building (PBS: HQ-CCB-0100)

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
\$0	\$40,000,000	+\$40,000,000
<ul style="list-style-type: none"> No request. 	<ul style="list-style-type: none"> This program is designed to enhance existing activities and develop new activities for disadvantaged communities around EM cleanup sites. EM will leverage activities that are designed to help communities reduce high or persistent poverty where a substantial portion of the populations is living below the poverty level. The Community Capacity Building Program will allow for an expansion of investments that have already proven effective and potential new activities supported by these communities. 	<ul style="list-style-type: none"> This program will enhance existing activities and develop new activities that will create grants for disadvantaged communities around EM cleanup sites to reduce high or persistent poverty.

Minority Serving Institutions 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 Institutions Partnership Program to attract, develop, and retain the technical workforce at its national laboratories, field sites, and offices required to execute its mission. The Program supports development of a future-focused workforce whereby improvements are sought in the technical training of the atomic energy workforce as well as in filling pipeline of the next generation of nuclear cleanup professionals through science, technology, engineering, and mathematics education, experiential learning, and apprenticeships.

The EM Minority Serving Institutions Partnership Program was designed to address DOE's future workforce needs by partnering with academic, government and DOE contractor organizations to mentor future minority scientists and engineers in the research, development, and deployment of new technologies. Moving forward, EM plans to consolidate this existing Minority Serving Institutions Partnership Program to include the Minority Serving Institution and Historically Black Colleges and Universities, Science, Technology, Engineering, and Mathematics, Cybersecurity, and Manufacturing Consortium and include the following elements:

- Competitive research awards: Research contracts potentially awarded on EM mission-related research and award recipients will partner with national laboratories.
- Internships: 10-week summer internships hosted at DOE national laboratories, the Savannah River Site and EM Headquarters.
- Savannah River Environmental Sciences Field Foundation: 10-week hands on summer program offering course credits. Research projects would be affiliated with the Savannah River Ecology Laboratory and the Savannah River National Laboratory.
- Consortium Program: This consortium builds on the program's success, and expand activities to create jobs, job training and advancing education in science, technology, engineering, and mathematics, cybersecurity, manufacturing, health and environmental science, and technology development.
 - o Technology, Curriculum, and Professional Development Program: Grants and contracts potentially awarded related to instrumentation and specialized equipment. Workshops and site visits will be provided to ensure professional development training.
 - o EM Minority Serving Institutions Shared Interest Research Partnership Program: Grants or contracts potentially awarded on targeted research.
 - o Postdoctoral Fellows Program: Candidates who obtain their PhD from a Minority Serving Institution or their undergraduate from a Minority Serving Institution are eligible to apply. Opportunities will be available across the EM cleanup complex.
 - o Graduate Fellowship Program: This is year-long fellowship program includes salary, travel for conferences and professional networking events.

Minority Serving Institution Partnerships Program (PBS: EM-HBCU-0100)

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
\$6,000,000	\$56,000,000	+\$50,000,000
<ul style="list-style-type: none"> Support for EM’s Minority Serving Institution Partnerships Program to attract, develop, and retain the technical workforce at its national laboratories and production plants required to execute its mission. 	<ul style="list-style-type: none"> Continue support for EM's s Minority Serving Institution Partnerships Program to attract, develop, and retain the technical workforce at its national laboratories, field sites, and offices required to execute its mission. 	<ul style="list-style-type: none"> Increase support for EM’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.

Technology Development (PBS: HQ-TD-0100)

Overview

This program is within the Defense Environmental Cleanup appropriation.

The Technology Development Program will facilitate the use of innovative solutions and state-of-the-art technology to reduce costs, accelerate schedules, and mitigate vulnerabilities. The infusion of new technology and innovative solutions are necessary to fill science and technology-rooted mission gaps and to improve or optimize baseline technologies.

The Technology Development Program provides the opportunity to reduce the aggregate cleanup cost, complete cleanup and close sites sooner and, more importantly, perform work and operate facilities more effectively and in a manner that assures public, worker and environmental safety. 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) public, worker, facility/asset, and environmental safety and security, (2) radioactive liquid and solid waste treatment, storage and disposal, (3) soil and groundwater remediation, (4) nuclear materials and spent fuel management and disposition, and (5) facility deactivation and decommissioning.

The FY 2023 Budget addresses strategic investing in fundamental research and seeking high-payoff, game-changing technologies and solutions that are smart and positively impact EM's lifecycle by: (1) reducing costs; (2) accelerating schedules; (3) mitigating mission uncertainties, vulnerabilities, and risks; and (4) minimizing the mortgage associated with long-term, post-closure and post-completion stewardship. High-payoff technologies are aimed at those that are outside the day-to-day program, target big challenges, and could result in breakthroughs. This includes continued pursuit of options to resolve high-payoff areas needing near-term solutions.

In FY 2023, existing technologies and innovative approaches used in other industry sectors will be evaluated and adapted as needed to clean up DOE-EM sites, which will save money by requiring minimal research and development, and potentially accelerate cleanup. Research and development will continue where appropriate for addressing the EM cleanup mission, particularly when basic phenomena are not adequately understood or there is a very high level of technical uncertainty. Early-stage applied research may lead to high-pay-off, game-changing solutions and may also provide insight on ways to improve existing environmental processes and facility operations. As such, EM will continue its activities in early-stage applied research as it serves as basis for new technological development, deployment on mission-relevant work, and technology transfer and commercialization.

In FY 2023, EM will continue to develop solutions and technologies that enable work to be performed safer, with better quality, and more efficiently, while focused on site closure. Mission-enabling and mission-enhancing technologies serve to equip EM with advanced tools. These technologies will improve quality, enhance environmental and facility operations, and reduce the environmental liability of legacy nuclear cleanup. They aim to enhance worker, nuclear, facility, industrial, and environmental safety. As the state-of-the-art in many other technology areas continue to advance, they offer alternatives or improvements to current baseline technologies.

Technology Development (PBS: HQ-TD-0100)

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
\$30,000,000	\$25,000,000	-\$5,000,000
<ul style="list-style-type: none"> Continue to establish test bed programs at various sites, across the EM complex, which will allow innovative technologies and approach to be evaluated to determine their usefulness for clean-up. Continue to provide technical assistance for the sites utilizing the technical subject matter experts that reside at DOE’s national laboratories, academia, private industry, and other Federal agencies. Continue to enhance and deploy technologies and workforce advancements in areas of worker safety, tank waste cleanup, soil/groundwater remediation, and facility decommissioning and decontamination. 	<ul style="list-style-type: none"> Continue established test beds programs at various sites, across the EM complex, that will allow evaluation of innovative technologies and approaches addressing the highest site priority needs. Continue to provide technical assistance for the sites utilizing the technical subject matter experts reside at DOE's national laboratories, academia, private industry, and other Federal agencies. Continue to enhance and deploy technologies and workforce advancements in areas of worker safety, tank waste cleanup, soil/groundwater remediation, and facility decommissioning and decontamination. 	<ul style="list-style-type: none"> The decrease reflects the planned reduction of new test bed programs at various sites.

Management and Storage of Elemental Mercury (PBS: HQ-MSF-0100)

Overview

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

In accordance with 42 U.S.C. 6939f, DOE is directed to designate and operate a facility or facilities for the purpose of long-term management and storage of elemental mercury generated within the United States.

Management and Storage of Elemental Mercury (PBS: HQ-MSF-0100)

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
\$2,100,000	\$2,100,000	+\$0
<ul style="list-style-type: none"> Funded long-term management and storage of elemental mercury generated within the United States. 	<ul style="list-style-type: none"> Continue to fund long-term management and storage of elemental mercury generated within the United States. 	<ul style="list-style-type: none"> No change.

Uranium/Thorium Reimbursements (PBS: HQ-UR-0100)

Overview

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 February 2022, 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. [1]

[1] DOE has fulfilled its reimbursement obligation to two of the ten sites, Rio Algom Mining LLC and Western Nuclear Inc. These companies will continue to complete their remediation efforts.

Reimbursements to Uranium/Thorium Licensees (PBS: HQ-UR-0100)

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
\$5,000,000	\$24,400,000	+\$19,400,000
<ul style="list-style-type: none"> Continued 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. Continued to provide payment to licensees of approved but unpaid claims from FY 2018 and prior. 	<ul style="list-style-type: none"> 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 claims for FY 2023 and prior. 	<ul style="list-style-type: none"> Increase will provide payment to licensees for anticipated and approved but unpaid outstanding claims.

Title X of the Energy Policy Act of 1992: Uranium/Thorium Reimbursement Program
 Status of Payments through Fiscal Year 2021 and Estimated Maximum Program Liability

(\$ Thousands)

<u>Licensees</u>	Total Payments FY 1994- FY 2021	Approved but Unpaid Claim Balances After FY 2021 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	1,485	0	679
Atlantic Richfield Company ^a	32,306	0	0
Atlas Corporation/Moab Mill Reclamation Trust ^a	9,694	0	0
Cotter Corporation/Colorado Legacy Land	3,566	868	3,343
Dawn Mining Company	15,841	3,309	3,309
Homestake Mining Company	103,331	2,735	44,593
Pathfinder Mines Corporation/Areva/Orano	10,790	0	313
Petrotomics Company ^a	2,850	0	0
Rio Algom Mining LLC ^b	48,081	0	0

<u>Licenses</u>	Total Payments FY 1994- FY 2021	Approved but Unpaid Claim Balances After FY 2021 Payments	Maximum Remaining Program Liability Including Estimated Costs in Approved Plans for Subsequent Remedial Action
Tennessee Valley Authority	20,762	4,368	4,368
Umetco Minerals Corporation-CO	65,095	14,325	25,895
Umetco Minerals Corporation-WY	25,514	320	1,453
Western Nuclear, Incorporated	33,636	0	0
Subtotal, Uranium	373,771	25,925	83,953
Thorium			
West Chicago ^C	399,464	447	179
Subtotal, Thorium	399,464	447	179
Total, Uranium and Thorium	773,235	26,372	84,132

^a Reimbursements have been completed to the Atlantic Richfield Company, the licensees of the Moab site, the Petrotoomics Company, the Rio Algom LLC, and the Western Nuclear, Inc. site.

^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.

Program Direction

Overview

Program Direction provides for the Federal workforce responsible for the overall direction and administrative support of the EM program, including both Headquarters and field personnel. The EM mission of safe cleanup of the environmental legacy of decades of nuclear weapons production and government-sponsored nuclear energy research 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., equity and environmental justice 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 DOE.

Highlights of the FY 2023 Budget Request

In FY 2023, EM will work diligently to ensure our programs have the appropriate expertise to meet mission requirements in the most efficient and effective manner possible. EM is working very aggressively to ensure key positions in various stages of the hiring process are filled and will focus on building core leadership skills at all levels of the organization. In FY 2021, EM created a staffing plan that identifies a full mapping of positions for Headquarters and each of the EM site offices. The staffing plan accounts for a total of 1,394 EM positions, allowing EM to support its mission to address the nation's Cold War environmental legacy resulting from five decades of nuclear weapons production and government-sponsored nuclear energy research. EM plans funding for 32 additional positions including 30 within the Office of the Chief Human Capital Officer and 2 within the Office of General Counsel that are not accounted for in the staffing plan.

Key assumptions in EM's staffing plan include:

- The higher position target accounts for EM's historical attrition rate of 10 percent. Additionally, with 30 percent of EM's workforce eligible to retire, the additional positions allow EM to plan for a potential increased rate of attrition.
- Supports career pathways and succession planning and builds acquisition management and project oversight capacity while ensuring an appropriate level of operational expertise across a variety of disciplines.
- Where appropriate, positions are downgraded and/or converted into career ladder positions to allow EM to recruit an increased number of junior staff to support succession planning.

EM also plans to:

- Participate with DOE's Office of Human Capital on utilizing the direct hire authority for mission critical occupations across the Department. EM will focus on ensuring that it has the technical talent to provide effective results for the program. This includes having acquisition professionals to deliver on end-state contracting, Federal project directors, nuclear engineers, and general engineers and scientists.
- Utilize the EM Pathways Programs and bringing in mission critical talent at lower grade levels in engineering and science and growing the technical skill sets to the mission challenges.

- Continue to hire interns to help mitigate the potential loss of talent with more than 38 percent of the current EM workforce available to retire in FY 2024.
- Enhance partnerships with Historically Black Colleges and Universities and other Minority Serving Institutions (Hispanic Serving Institutions and Tribal Colleges and Universities) having curricula in mission critical occupations is an excellent opportunity for students to gain experience in their academic disciplines and afford EM an opportunity to groom potential employees for its workforce. By participating in these programs, EM hopes to increase the number of talented students from underrepresented groups pursuing science and technology degrees and to help establish the next generation of creative and committed leaders in meeting the demands of our mission.

Funding (\$K)
Program Direction Summary

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted	FY 2023 Request vs FY 2021 Enacted (%)
Carlsbad					
Salaries and Benefits	10,613	10,613	11,863	+1,250	+12%
Travel	200	200	488	+288	+144%
Support Services	220	220	220	+0	+0%
Other Related Expenses	790	790	750	-40	-5%
Total, Carlsbad	11,823	11,823	13,321	+1,498	+13%
Idaho					
Salaries and Benefits	7,832	7,832	8,500	+668	+9%
Travel	60	60	194	+134	+223%
Support Services	160	160	200	+40	+25%
Other Related Expenses	1,752	1,752	1,390	-362	-21%
Total, Idaho	9,804	9,804	10,284	+480	+5%
Oak Ridge					
Salaries and Benefits	11,095	11,095	14,040	+2,945	+27%
Travel	110	110	158	+48	+44%
Support Services	2,265	2,265	2,265	+0	+0%
Other Related Expenses	1,556	1,556	1,250	-306	-20%
Total, Oak Ridge	15,026	15,026	17,713	+2,687	+18%
Portsmouth/Paducah Project Office					
Salaries and Benefits	9,222	9,222	9,970	+748	+8%
Travel	110	110	420	+310	+282%
Support Services	2,660	2,660	2,660	+0	+0%
Other Related Expenses	2,365	2,365	1,965	-400	-17%
Total, Portsmouth/Paducah Project Office	14,357	14,357	15,015	+658	+5%
Richland					
Salaries and Benefits	38,009	38,009	42,023	+4,014	+11%
Travel	190	190	578	+388	+204%
Support Services	800	800	800	+0	+0%

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted	FY 2023 Request vs FY 2021 Enacted (%)
Other Related Expenses	3,195	3,195	2,500	-695	-22%
Total, Richland	42,194	42,194	45,901	+3,707	+9%
River Protection					
Salaries and Benefits	20,100	20,100	23,695	+3,595	+18%
Travel	120	120	525	+405	+338%
Support Services	389	389	389	+0	+0%
Other Related Expenses	2,596	2,596	2,300	-296	-11%
Total, River Protection	23,205	23,205	26,909	+3,704	+16%
Savannah River					
Salaries and Benefits	38,962	38,962	45,652	+6,690	+17%
Travel	170	170	473	+303	+178%
Support Services	322	322	322	+0	+0%
Other Related Expenses	2,597	2,597	2,300	-297	-11%
Total, Savannah River	42,051	42,051	48,747	+6,696	+16%
Small Sites					
Salaries and Benefits	3,885	3,885	4,512	+627	+16%
Travel	65	65	158	+93	+143%
Support Services	420	420	420	+0	+0%
Other Related Expenses	500	500	450	-50	-10%
Total, Small Sites	4,870	4,870	5,540	+670	+14%
Nevada Site Office					
Salaries and Benefits	2,251	2,251	2,763	+512	+23%
Travel	25	25	68	+43	+172%
Support Services	100	100	100	+0	+0%
Other Related Expenses	245	245	230	-15	-6%
Total, Nevada Site Office	2,621	2,621	3,161	+540	+21%
Los Alamos Site Office					
Salaries and Benefits	6,171	6,171	7,341	+1,170	+19%
Travel	60	60	131	+71	+118%
Support Services	1,450	1,450	550	-900	-62%

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted	FY 2023 Request vs FY 2021 Enacted (%)
Other Related Expenses	600	600	550	-50	-8%
Total, Los Alamos Site Office	8,281	8,281	8,572	+291	+4%
Field					
Salaries and Benefits	148,140	148,140	170,359	+22,219	+15%
Travel	1,110	1,110	3,193	+2,083	+188%
Support Services	8,786	8,786	7,926	-860	-10%
Other Related Expenses	16,196	16,196	13,685	-2,511	-16%
Total, Field	174,232	174,232	195,163	+20,931	+12%
Headquarters Operations					
Salaries and Benefits	50,490	50,490	57,335	+6,845	+14%
Travel	600	600	1,785	+1,185	+198%
Support Services	21,638	21,638	17,968	-3,670	-17%
Other Related Expenses	1,000	1,000	690	-310	-31%
Total, Headquarters Operations	73,728	73,728	77,778	+4,050	+5%
Headquarters Working Capital Fund					
Other Related Expenses	11,867	11,867	11,869	+2	+0%
Consolidated Business Center					
Salaries and Benefits	24,326	24,326	27,511	+3,185	+13%
Travel	80	80	400	+320	+400%
Support Services	2,415	2,415	2,415	+0	+0%
Other Related Expenses	2,352	2,352	1,866	-486	-21%
Total, Consolidated Business Center	29,173	29,173	32,192	+3,019	+10%
Environmental Management					
Salaries and Benefits	222,956	222,956	255,205	+32,249	+14%
Travel	1,790	1,790	5,378	+3,588	+200%
Support Services	32,839	32,839	28,309	-4,530	-14%
Other Related Expenses	31,415	31,415	28,110	-3,305	-11%
Total, Environmental Management	289,000	289,000	317,002	+28,002	+10%
Full Time Equivalents	1,275	1,275	1,375	+100	+8%

Support Services and Other Related Expenses

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted
Support Services				
Technical Support				
Feasibility of Design Considerations	3,600	3,600	3,000	-600
System Definition	80	80	85	+5
Economic and Environmental Analysis	4,859	4,859	3,990	-869
Test and Evaluation Studies	80	80	84	+4
Surveys or Reviews of Technical Operations	8,600	8,600	6,950	-1,650
Total, Technical Support	17,219	17,219	14,109	-3,110
Management Support				
Directives Management Studies	1,900	1,900	1,672	-228
Automatic Data Processing	2,000	2,000	2,746	+746
Training and Education	166	166	150	-16
Analysis of DOE Management Processes	1,000	1,000	912	-88
Reports and Analyses Management and General Administrative Support	10,554	10,554	8,720	-1,834
Total, Management Support	15,620	15,620	14,200	-1,420
Total, Support Services	32,839	32,839	28,309	-4,530
Other Related Expenses				
Rent to GSA	3,739	3,739	2,760	-979
Rent to Others	1,300	1,300	1,167	-133
Communication, Utilities, Misc.	2,547	2,547	2,125	-422
Printing and Reproduction	10	10	10	-
Other Services	6,363	6,363	5,355	-1,008
Training	1,318	1,318	1,500	+182
Purchases from Gov. Accounts	481	481	345	-136
Operation and Maintenance of Equipment	395	395	282	-113

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted
Supplies and Materials	1,200	1,200	912	-288
Equipment	2,195	2,195	1,785	-410
Working Capital Fund	11,867	11,867	11,869	+2
Total, Other Related Expenses	31,415	31,415	28,110	-3,305

Program Direction (PBS: HQ-PD-0100)

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
\$277,133,000	\$305,133,000	+\$28,000,000
Salaries and Benefits	\$222,956,000	\$255,205,000
Supported Federal salaries and benefits for EM’s FTE usage of 1,213.	<ul style="list-style-type: none"> Supports Federal salaries and benefits for EM’s full-time equivalent level. 	<ul style="list-style-type: none"> Increase is based on projected payroll requirements and includes 4.6 percent pay raise and increase for Federal benefits.
Travel	\$1,790,000	\$5,378,000
Travel was reduced due to COVID-19.	<ul style="list-style-type: none"> The Request funds 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 detail assignments at EM sites and training and participation at professional conferences. 	<ul style="list-style-type: none"> Increase supports Federal travel requirements associated with oversight of safe cleanup, construction, and test activities at EM facilities.
Support Services	\$32,839,000	\$28,309,000
<ul style="list-style-type: none"> Supported services in the areas of administrative, procurement and human capital support; technical oversight support; information technology to support new systems; operation and maintenance of equipment; and operation and maintenance of facilities occupied by EM staff. 	<ul style="list-style-type: none"> The Request will fund services in the areas of administrative, procurement and human capital support; technical oversight support; information technology to support modernization of current systems; operation and maintenance of equipment; and operation and maintenance of facilities occupied by EM staff. 	<ul style="list-style-type: none"> Decrease aligns resources with planned support services requirements.
Other Related Expenses	\$19,548,000	\$16,241,000
<ul style="list-style-type: none"> Funded items such as training, supplies, and information technology equipment as well as field rent, utilities, communications, building and ground maintenance. EM continued efficiencies for the reintegration of Federal staff to Government-owned facilities. 	<ul style="list-style-type: none"> The Request will support fixed requirements associated with rent, utilities, and telecommunications; building and grounds maintenance; computer/video maintenance and support; IT equipment leases, purchases, and maintenance. Funds miscellaneous purchases such as supplies, materials, and subscriptions. 	<ul style="list-style-type: none"> Decrease aligns resources with planned requirements.

WCF Program Direction (PBS: HQ-PDWCF-0100)

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
\$11,867,000	\$11,869,000	+\$2,000
Other Related Expenses	\$11,867,000	\$11,869,000
<ul style="list-style-type: none"> Funded EM’s share of the Working Capital Fund in Program Direction’s other related expenses for services such as building occupancy, corporate business systems (only payroll segment), corporate training services, health services, overseas presence, supply, and telecommunications. 	<ul style="list-style-type: none"> The Request funds EM’s share of the Working Capital Fund in Program Direction’s other related expenses for services such as building occupancy, corporate business systems (only payroll services segment), corporate training services, health services, overseas presence, supply, and telecommunications. 	<ul style="list-style-type: none"> The increase will align with requirements in FY 2023 for the Departments Working Capital Fund.

**Environmental Management
Facilities Maintenance and Repair**

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 2021 Actual Cost	FY 2021 Planned Cost	FY 2022 Planned Cost	FY 2023 Planned Cost
Carlsbad	34,002	39,391	11,890	17,200
Idaho National Laboratory	33,643	25,608	26,120	26,642
Moab	342	515	523	536
Oak Ridge	41,336	41,046	114,123	64,882
Pacific Northwest National Laboratory	0	0	0	0
Paducah	32,292	32,849	27,885	28,666
Portsmouth	40,406	47,995	42,502	59,160
Richland Operations Office	100,603	109,402	190,991	212,800
Office of River Protection	130,224	173,063	96,630	119,229
Savannah River	198,335	187,015	72,524	203,277
Total, Direct-Funded Maintenance and Repair	611,183	656,884	583,188	732,392

Costs for Indirect-Funded Maintenance and Repair (including Deferred Maintenance Reduction)

(\$K)

	FY 2021 Actual Cost	FY 2021 Planned Cost	FY 2022 Planned Cost	FY 2023 Planned Cost
Carlsbad	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	6,149	6,149	6,600	6,600
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	51,995	57,620	53,566	75,540
Total, Indirect-Funded Maintenance and Repair	58,144	63,769	60,166	82,140

**Environmental Management Research and Development
Research and Development (\$K)**

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 vs FY 2021
Basic	0	0	0	+0
Applied	11,500	11,500	8,214	-3,286
Development	23,500	23,500	16,786	-6,714
Subtotal, R&D	<u>35,000</u>	<u>35,000</u>	<u>25,000</u>	<u>-10,000</u>
Equipment	0	0	0	+0
Construction	0	0	0	+0
Total, R&D	35,000	35,000	25,000	-10,000

**Environmental Management
Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR)**

	FY 2021 Enacted Transfer	FY 2022 Annualized CR Projected Transfer	FY 2023 Request Projected Transfer	FY 2023 vs FY 2021
Technology Development and Deployment				
SBIR	1,095	1,095	912	-183
STTR	0	0	0	+0
Oak Ridge				
SBIR	183	183	110	-73
STTR	0	0	0	+0
Total, SBIR	<u>1,278</u>	<u>1,278</u>	<u>1,022</u>	<u>-256</u>
Total, STTR	0	0	0	+0

Safeguards and Security by Activity (\$K)

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted	FY 2023 Request vs FY 2021 Enacted (%)
Carlsbad					
Protective Forces	4,418	4,418	4,418	+0	+0%
Physical Security Systems	716	716	716	+0	+0%
Security Investigations	63	63	63	+0	+0%
Program Management	273	273	273	+0	+0%
Subtotal, Carlsbad	5,470	5,470	5,470	+0	+0%
Cyber Security	1,336	1,336	1,336	+0	+0%
Total, Carlsbad	6,806	6,806	6,806	+0	+0%
Oak Ridge					
Protective Forces	4,285	4,285	4,414	+129	+3%
Physical Security Systems	1,850	1,850	1,906	+56	+3%
Information Security	600	600	618	+18	+3%
Personnel Security	700	700	721	+21	+3%
Security Investigations	200	200	206	+6	+3%
Material Control and Accountability	405	405	417	+12	+3%
Program Management	220	220	226	+6	+3%
Subtotal, Oak Ridge	8,260	8,260	8,508	+248	+3%
Cyber Security	1,000	1,000	3,492	+2,492	+249%
Total, Oak Ridge	9,260	9,260	12,000	+2,740	+30%
Paducah					
Protective Forces	5,462	5,462	5,766	+304	+6%
Physical Security Systems	632	632	650	+18	+3%
Information Security	841	841	865	+24	+3%
Personnel Security	583	583	600	+17	+3%
Security Investigations	229	229	236	+7	+3%
Security Infrastructure/Construction	5,105	5,105	4,708	-397	-8%
Program Management	1,877	1,877	2,045	+168	+9%
Subtotal, Paducah	14,729	14,729	14,870	+141	+1%
Cyber Security	1,477	1,477	1,336	-141	-10%
Total, Paducah	16,206	16,206	16,206	+0	+0%

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted	FY 2023 Request vs FY 2021 Enacted (%)
Portsmouth					
Protective Forces	7,290	7,290	10,184	+2,894	+40%
Physical Security Systems	1,180	1,180	702	-478	-41%
Information Security	690	690	424	-266	-39%
Personnel Security	613	613	424	-189	-31%
Security Investigations	242	242	144	-98	-41%
Security Infrastructure/Construction	594	594	434	-160	-27%
Program Management	800	800	609	-191	-24%
Subtotal, Portsmouth	11,409	11,409	12,921	+1,512	+13%
Cyber Security	5,281	5,281	3,769	-1,512	-29%
Total, Portsmouth	16,690	16,690	16,690	+0	+0%
Richland					
Protective Forces	61,266	61,266	61,448	+182	+0%
Physical Security Systems	8,847	8,847	8,847	+0	+0%
Information Security	1,090	1,090	1,090	+0	+0%
Personnel Security	2,047	2,047	2,047	+0	+0%
Security Investigations	857	857	675	-182	-21%
Material Control and Accountability	1,069	1,069	1,069	+0	+0%
Program Management	10,226	10,226	10,226	+0	+0%
Subtotal, Richland	85,402	85,402	85,402	+0	+0%
Cyber Security	10,898	10,898	10,898	+0	+0%
Total, Richland	96,300	96,300	96,300	+0	+0%
Savannah River					
Protective Forces	102,209	102,209	102,209	+0	+0%
Physical Security Systems	15,279	15,279	15,279	+0	+0%
Information Security	2,690	2,690	2,450	-240	-9%
Personnel Security	8,704	8,704	7,950	-754	-9%
Security Investigations	65	65	65	+0	+0%
Material Control and Accountability	5,702	5,702	5,199	-503	-9%
Security Infrastructure/Construction	3,189	3,189	0	-3,189	-100%
Program Management	12,040	12,040	12,040	+0	+0%
Transportation	215	215	215	+0	+0%
Subtotal, Savannah River	150,093	150,093	145,407	-4,686	-3%

Environmental Management

FY 2023 Congressional Budget Justification

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted	FY 2023 Request vs FY 2021 Enacted (%)
Cyber Security	21,118	21,118	6,787	-14,331	-68%
Total, Savannah River	171,211	171,211	152,194	-19,017	-11%
Los Alamos National Laboratory					
Protective Forces	0	0	500	+500	+100%
Physical Security Systems	0	0	500	+500	+100%
Information Security	0	0	750	+750	+100%
Personnel Security	0	0	50	+50	+100%
Security Investigations	0	0	75	+75	+100%
Material Control and Accountability	0	0	50	+50	+100%
Security Infrastructure/Construction	0	0	250	+250	+100%
Program Management	0	0	500	+500	+100%
Subtotal, Los Alamos National Laboratory	0	0	2,675	+2,675	+100%
Cyber Security	0	0	2,325	+2,325	+100%
Total, Los Alamos National Laboratory	0	0	5,000	+5,000	+100%
West Valley Demonstration Project					
Protective Forces	3,642	3,642	3,709	+67	+2%
Program Management	306	306	312	+6	+2%
Subtotal, West Valley Demonstration Project	3,948	3,948	4,021	+73	+2%
Cyber Security	350	350	356	+6	+2%
Total, West Valley Demonstration Project	4,298	4,298	4,377	+79	+2%
Total, Safeguards and Security	320,771	320,771	309,573	-11,198	-3%

Safeguards and Security (\$K)

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted	FY 2023 Request vs FY 2021 Enacted (%)
Protective Forces	188,572	188,572	192,648	+4,076	+2%
Physical Security Systems	28,504	28,504	28,600	+96	+0%

Environmental Management

FY 2023 Congressional Budget Justification

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted	FY 2023 Request vs FY 2021 Enacted (%)
Information Security	5,911	5,911	6,197	+286	+5%
Personnel Security	12,647	12,647	11,792	-855	-7%
Security Investigations	1,656	1,656	1,464	-192	-12%
Material Control and Accountability	7,176	7,176	6,735	-441	-6%
Security Infrastructure/Construction	8,888	8,888	5,392	-3,496	-39%
Program Management	25,742	25,742	26,231	+489	+2%
Transportation	215	215	215	+0	+0%
Subtotal, Safeguards and Security	279,311	279,311	279,274	-37	+0%
Cyber Security	41,460	41,460	30,299	-11,161	-27%
Total, Safeguards and Security	320,771	320,771	309,573	-11,198	-3%

DEPARTMENT OF ENERGY
Funding by Site Detail
Defense Environmental Cleanup FY 2023
(Dollars in Thousands)

FY 2021 Enacted Requested Total	FY 2022 Annualized CR Requested Total	FY 2023 Request Detail Requested Total
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Carlsbad Area Office

Program Direction - Defense Environmental Cleanup	11,823	11,823	13,321
Safeguards and Security - Defense Environmental Cleanup	6,806	6,806	6,806
Total Carlsbad Area Office	18,629	18,629	20,127

Consolidated Business Center

Closure Sites Administration	2,087	2,087	2,452
Program Direction - Defense Environmental Cleanup	34,043	34,043	37,732
Total Consolidated Business Center	36,130	36,130	40,184

East Tennessee Technology Park (K25)

Safeguards and Security - Defense Environmental Cleanup	9,260	9,260	12,000
Total East Tennessee Technology Park (K25)	9,260	9,260	12,000

Fernald Environmental Management Project

Closure Sites Administration	1,100	1,100	1,062
Total Fernald Environmental Management Project	1,100	1,100	1,062

Hanford Site

Central Plateau Remediation	670,000	670,000	650,240
River Corridor and Other Cleanup Operations	232,479	232,479	135,000
18-D-404 Modification of Waste Encapsulation and Storage Facility	15,000	15,000	3,100
22-D-401 L-888, 400 Area Fire Station	0	0	3,100
22-D-402 L-897, 200 Area Water Treatment Facility	0	0	8,900
23-D-404 181D Export Water System Reconfiguration and Upgrade	0	0	6,770
23-D-405 181B Export Water System Reconfiguration and Upgrade	0	0	480
Construction - Richland	15,000	15,000	22,350
Richland	917,479	917,479	807,590
Safeguards and Security - Defense Environmental Cleanup	96,300	96,300	96,300
Total Hanford Site	1,013,779	1,013,779	903,890

Idaho National Laboratory

Idaho Cleanup and Waste Disposition	430,000	430,000	350,658
22-D-403 Idaho Spent Nuclear Fuel Staging Facility	0	0	8,000
22-D-404 Additional ICDF Landfill Disposal Cell and Evaporation Ponds Project	0	0	8,000
23-D-402 - Calcine Construction	0	0	10,000
Construction - Idaho	0	0	26,000
Idaho Community and Regulatory Support	3,500	3,500	2,705
Idaho National Laboratory (INL)	433,500	433,500	379,363
Total Idaho National Laboratory	433,500	433,500	379,363

Idaho Operations Office

Program Direction - Defense Environmental Cleanup	9,804	9,804	10,284
Total Idaho Operations Office	9,804	9,804	10,284

Lawrence Livermore National Laboratory

Lawrence Livermore National Laboratory (LLNL)	1,764	1,764	1,842
LLNL Excess Facilities D&D	35,000	35,000	12,004
NNSA Sites and Nevada Off-Sites	36,764	36,764	13,846
Total Lawrence Livermore National Laboratory	36,764	36,764	13,846

Los Alamos National Laboratory

DEPARTMENT OF ENERGY
Funding by Site Detail
Defense Environmental Cleanup FY 2023
(Dollars in Thousands)

	FY 2021 Enacted Requested Total	FY 2022 Annualized CR Requested Total	FY 2023 Request Detail Requested Total
Los Alamos National Laboratory (LANL)	226,000	226,000	286,316
Los Alamos Excess Facilities D&D	0	0	40,519
NNSA Sites and Nevada Off-Sites	226,000	226,000	326,835
Safeguards and Security - Defense Environmental Cleanup	0	0	5,000
Total Los Alamos National Laboratory	226,000	226,000	331,835
Nevada Field Office			
Program Direction - Defense Environmental Cleanup	2,621	2,621	3,161
Total Nevada Field Office	2,621	2,621	3,161
Nevada Operations Office			
Nevada Site	5,065	5,065	3,900
NNSA Sites and Nevada Off-Sites	5,065	5,065	3,900
Total Nevada Operations Office	5,065	5,065	3,900
Nevada National Security Site			
Nevada Site	55,672	55,672	58,752
NNSA Sites and Nevada Off-Sites	55,672	55,672	58,752
Total Nevada National Security Site	55,672	55,672	58,752
NNSA Albuquerque Complex			
Program Direction - Defense Environmental Cleanup	8,281	8,281	8,572
Total NNSA Albuquerque Complex	8,281	8,281	8,572
Oak Ridge National Laboratory			
U233 Disposition Program	55,000	55,000	47,628
OR Nuclear Facility D&D	254,132	254,132	334,221
Oak Ridge (OR)	309,132	309,132	381,849
Total Oak Ridge National Laboratory	309,132	309,132	381,849
Oak Ridge Office			
Program Direction - Defense Environmental Cleanup	15,026	15,026	17,713
Total Oak Ridge Office	15,026	15,026	17,713
Oak Ridge Reservation			
OR Cleanup Disposition	112,471	112,471	62,000
Oak Ridge (OR)	112,471	112,471	62,000
Total Oak Ridge Reservation	112,471	112,471	62,000
Oak Ridge Reservation (Off-Site)			
OR Community and Regulatory Support	5,900	5,900	5,300
Oak Ridge (OR)	5,900	5,900	5,300
Total Oak Ridge Reservation (Off-Site)	5,900	5,900	5,300
Office of River Protection			
Waste Treatment Immobilization Plant Commissioning	50,000	50,000	462,700
Rad Liquid Tank Waste Stabilization and Disposition	784,000	784,000	801,100
23-D-403, Hanford 200 West Area Tank Farms Risk Management Project	0	0	4,408
18-D-16 Waste treatment and immobilization plant - LBL/Direct Feed LAW	786,000	786,000	0
01-D-16D High-Level Waste Facility	25,000	25,000	316,200
01-D-16E Pretreatment Facility	0	0	20,000
Construction - Office of River Protection	811,000	811,000	340,608

DEPARTMENT OF ENERGY
Funding by Site Detail
Defense Environmental Cleanup FY 2023
(Dollars in Thousands)

	FY 2021 Enacted Requested Total	FY 2022 Annualized CR Requested Total	FY 2023 Request Detail Requested Total
Office of River Protection (ORP)	1,645,000	1,645,000	1,604,408
Program Direction - Defense Environmental Cleanup	23,205	23,205	26,909
Total Office of River Protection	1,668,205	1,668,205	1,631,317
Paducah Gaseous Diffusion Plant			
Program Direction - Defense Environmental Cleanup	14,357	14,357	15,015
Safeguards and Security - Defense Environmental Cleanup	16,206	16,206	16,206
Total Paducah Gaseous Diffusion Plant	30,563	30,563	31,221
Portsmouth Gaseous Diffusion Plant			
Safeguards and Security - Defense Environmental Cleanup	16,690	16,690	16,690
Total Portsmouth Gaseous Diffusion Plant	16,690	16,690	16,690
Richland Operations Office			
Richland Community and Regulatory Support	8,621	8,621	10,013
Richland	8,621	8,621	10,013
Program Direction - Defense Environmental Cleanup	42,194	42,194	45,901
Total Richland Operations Office	50,815	50,815	55,914
Rocky Flats Site			
Closure Sites Administration	1,800	1,800	553
Total Rocky Flats Site	1,800	1,800	553
Sandia Site Office			
Sandia National Laboratory (SNL)	4,860	4,860	4,003
NNSA Sites and Nevada Off-Sites	4,860	4,860	4,003
Total Sandia Site Office	4,860	4,860	4,003
Savannah River National Laboratory			
Savannah River National Laboratory O&M	0	0	41,000
Savannah River Sites	0	0	41,000
Total Savannah River National Laboratory	0	0	41,000
Savannah River Operations Office			
SR Community and Regulatory Support	11,549	11,549	12,137
Savannah River Sites	11,549	11,549	12,137
Program Direction - Defense Environmental Cleanup	42,051	42,051	48,747
Safeguards and Security - Defense Environmental Cleanup	171,211	171,211	152,194
Total Savannah River Operations Office	224,811	224,811	213,078
Savannah River Site			
Nuclear Material	349,724	349,724	270,461
Solid Waste Stabilization and Disposition	50,071	50,071	45,509
Soil and Water Remediation	56,412	56,412	60,455
Risk Reduction Deactivation and Surveillance	27,264	27,264	21,463
Infrastructure and Land Management	16,529	16,529	18,429
18-D-402 Emergency Operations Center Replacement, SR	6,500	6,500	25,568
Savannah River Risk Management Operations	506,500	506,500	441,885
19-D-701 SR Security Systems Replacement	1,000	1,000	5,000
20-D-402 Advanced Manufacturing Collaborative Facility (AMC)	25,000	25,000	0
Construction - Savannah River Sites	26,000	26,000	5,000
Savannah River Legacy Pensions	0	0	132,294
Radioactive Liquid Tank Waste Stabilization	910,832	910,832	851,660

DEPARTMENT OF ENERGY
Funding by Site Detail
Defense Environmental Cleanup FY 2023
(Dollars in Thousands)

	FY 2021 Enacted Requested Total	FY 2022 Annualized CR Requested Total	FY 2023 Request Detail Requested Total
20-D-401 Saltstone Disposal Unit #10, 11, 12	562	562	37,668
18-D-402 Saltstone disposal unit #8/9	65,500	65,500	49,832
17-D-402 Saltstone Disposal Unit #7	10,716	10,716	0
Construction - Radioactive Liquid Tank Waste	76,778	76,778	87,500
Savannah River Sites	1,520,110	1,520,110	1,518,339
Total Savannah River Site	1,520,110	1,520,110	1,518,339
Separations Process Research Unit			
Separations Processing Research Unit	15,000	15,000	15,300
NNSA Sites and Nevada Off-Sites	15,000	15,000	15,300
Total Separations Process Research Unit	15,000	15,000	15,300
Washington Headquarters			
Program Direction - Defense Environmental Cleanup	85,595	85,595	89,647
Program Support - Defense Environmental Cleanup	12,979	12,979	103,239
Technology Development and Deployment	30,000	30,000	25,000
Total Washington Headquarters	128,574	128,574	217,886
Waste Isolation Pilot Plant			
Waste Isolation Pilot Plant (WIPP)	313,260	313,260	371,943
21-D-401 Hoisting Capability Project	10,000	10,000	0
15-D-411 Safety Significant Confinement Ventilation System, WIPP	35,000	35,000	59,073
15-D-412 Exhaust Shaft, WIPP	55,000	55,000	25,000
Construction - Waste Isolation Pilot Plant	100,000	100,000	84,073
Total Waste Isolation Pilot Plant	413,260	413,260	456,016
Total Waste Isolation Pilot Plant	413,260	413,260	456,016
West Valley Demonstration Project			
Safeguards and Security - Defense Environmental Cleanup	4,298	4,298	4,377
Total West Valley Demonstration Project	4,298	4,298	4,377
Y-12 Site Office			
OR Technology Development and Deployment	5,000	5,000	3,000
14-D-403 Outfall 200 Mercury Treatment Facility	20,500	20,500	0
17-D-401 On-site Waste Disposal Facility	22,380	22,380	35,000
Construction - Oak Ridge	42,880	42,880	35,000
Oak Ridge (OR)	47,880	47,880	38,000
Total Y-12 Site Office	47,880	47,880	38,000
Undesignated LPI			
Federal Contribution to the Uranium Enrichment D&D Fund	0	0	417,000
Total Undesignated LPI	0	0	417,000
Total Funding by Site - Defense Environmental Cleanup	6,426,000	6,426,000	6,914,532

DEPARTMENT OF ENERGY
 Funding by Site Detail
 Uranium Enrichment Decontamination and Decommissioning Fund FY 2023
 (Dollars in Thousands)

FY 2021 Enacted Requested Total	FY 2022 Annualized CR Requested Total	FY 2023 Request Detail Requested Total
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East Tennessee Technology Park (K25)			
Oak Ridge Reservation (D&D Fund)	134,701	134,701	92,946
Pension and Community and Regulatory Support	25,000	25,000	20,000
Total East Tennessee Technology Park (K25)	159,701	159,701	112,946
Paducah Gaseous Diffusion Plant			
Paducah Gaseous Diffusion Plant (D&D Fund)	240,000	240,000	199,269
Pension and Community and Regulatory Support	2,099	2,099	2,782
Total Paducah Gaseous Diffusion Plant	242,099	242,099	202,051
Portsmouth Gaseous Diffusion Plant			
Portsmouth Gaseous Diffusion Plant (D&D Fund)	367,193	367,193	432,354
20-U-401 On-site Waste Disposal Facility	16,500	16,500	48,040
15-U-408 On-Site Waste Disposal Facility, Portsmouth	46,639	46,639	0
Construction - Uranium D&D Fund	63,139	63,139	48,040
Pension and Community and Regulatory Support	3,868	3,868	2,630
Total Portsmouth Gaseous Diffusion Plant	434,200	434,200	483,024
Washington Headquarters			
Uranium Enrichment D&D Fund-U Th Reimbursements	5,000	5,000	24,400
Total Washington Headquarters	5,000	5,000	24,400
Total Funding by Site - Uranium Enrichment Decontamination and Decommissioning Fund	841,000	841,000	822,421

GENERAL PROVISIONS—DEPARTMENT OF ENERGY

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) 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.

(e) 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.

(f)

(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.

(g) The unexpended balances of prior appropriations provided for activities in this Act may be available to the same appropriation accounts for such activities established pursuant to this title. Available balances may be merged with funds in the applicable established accounts and thereafter may be accounted for as one fund for the same time period as originally enacted.

SEC. 302. 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 2023 until the enactment of the Intelligence Authorization Act for fiscal year 2023.

SEC. 303. 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 Enterprise Assessments to ensure the project is in compliance with nuclear safety requirements.

SEC. 304. 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. 305. Notwithstanding section 161 of the Energy Policy and Conservation Act (42 U.S.C. 6241), upon a determination by the President in this fiscal year that a regional supply shortage of refined petroleum product of significant scope and duration exists, that a severe increase in the price of refined petroleum product will likely result from such shortage, and that a draw down and sale of refined petroleum product would assist directly and significantly in reducing the adverse impact of such shortage, the Secretary of Energy may draw down and sell refined petroleum product from the Strategic Petroleum Reserve. Proceeds from a sale under this section shall be deposited into the SPR Petroleum Account established in section 167 of the Energy Policy and Conservation Act (42 U.S.C. 6247), and such amounts shall be available for obligation, without fiscal year limitation, consistent with that section.

SEC. 306. Subparagraphs (B) and (C) of section 40401(a)(2) of Public Law 117–58, paragraph (3) of section 16512(r) of title 42, United States Code, and section (I) of section 17013 of title 42, United States Code, shall not apply for fiscal year 2023.

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TITLE V—GENERAL PROVISIONS
(INCLUDING TRANSFER OF FUNDS)

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. None of the funds made available by this Act may be used in contravention of Executive Order No. 12898 of February 11, 1994 (Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations).

SEC. 503. (a) None of the funds made available in this Act may be used to maintain or establish a computer network unless such network blocks the viewing, downloading, and exchanging of pornography. (b) Nothing in subsection (a) shall limit the use of funds necessary for any Federal, State, Tribal, or local law enforcement agency or any other entity carrying out criminal investigations, prosecution, or adjudication activities.

SEC. 504. Of the unavailable collections currently in the United States Enrichment Corporation Fund, \$405,421,000 shall be transferred to and merged with the Uranium Enrichment Decontamination and Decommissioning Fund and shall be available only to the extent provided in advance in appropriations Acts.