

Department of Energy FY 2024 Congressional Justification



Environmental Management

Department of Energy

FY 2024 Congressional Justification



Environmental Management



FY 2024 Congressional Budget Request

Volume 6

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DEPARTMENT OF ENERGY
Appropriation Summary
(Dollars in Thousands)

	FY 2022	FY 2023	FY 2024	FY 2024 President's Budget vs. FY 2023	
	Enacted ⁽¹⁾	Enacted ^{(1), (2), (3)}	President's Budget	Enacted	
				\$	%
Department of Energy Budget by Appropriation					
Energy Efficiency and Renewable Energy	3,200,000	3,460,000	3,826,116	+366,116	+10.6%
Electricity	277,000	350,000	297,475	-52,525	-15.0%
Cybersecurity, Energy Security and Emergency Response	185,804	200,000	245,475	+45,475	+22.7%
Strategic Petroleum Reserve	219,000	207,175	280,969	+73,794	+35.6%
Naval Petroleum and Oil Shale Reserves	13,650	13,004	13,010	+6	+0.0%
SPR Petroleum Account	7,350	-2,051,900	0	+2,051,900	+100.0%
Northeast Home Heating Oil Reserve	6,500	7,000	7,150	+150	+2.1%
Total, Petroleum Reserve Accounts	246,500	-1,824,721	301,129	+2,125,850	+116.5%
Total, Cybersecurity, Energy Security, and Emergency Response	432,304	-1,624,721	546,604	+2,171,325	+133.6%
Nuclear Energy (270) ^{(1), (2), (3)}	1,505,000	1,623,000	1,384,887	-238,113	-14.7%
Fossil Energy and Carbon Management	825,000	890,000	905,475	+15,475	+1.7%
Uranium Enrichment Decontamination and Decommissioning (UED&D)	860,000	879,052	857,482	-21,570	-2.5%
Energy Information Administration	129,087	135,000	156,550	+21,550	+16.0%
Non-Defense Environmental Cleanup	333,863	358,583	348,700	-9,883	-2.8%
Science ⁽²⁾	7,475,000	8,100,000	8,800,400	+700,400	+8.6%
Office of Technology Transitions	19,470	22,098	56,550	+34,452	+155.9%
Office of Clean Energy Demonstrations	20,000	89,000	215,300	+126,300	+141.9%
Federal Energy Management Program	0	0	82,200	+82,200	N/A
Grid Deployment Office	0	0	106,600	+106,600	N/A
Office of Manufacturing & Energy Supply Chains	0	0	179,490	+179,490	N/A
Office of State and Community Programs	0	0	705,000	+705,000	N/A
Advanced Research Projects Agency - Energy	450,000	470,000	650,200	+180,200	+38.3%
Nuclear Waste Fund Oversight	27,500	10,205	12,040	+1,835	+18.0%
Departmental Administration	240,000	283,000	433,475	+150,475	+53.2%
Indian Energy Policy and Programs	58,000	75,000	110,050	+35,050	+46.7%
Inspector General	78,000	86,000	165,161	+79,161	+92.0%
Title 17 Innovative Technology Loan Guarantee Program	29,000	-136,018	-126,524	+9,494	+7.0%
Advanced Technology Vehicles Manufacturing Loan Program	5,000	9,800	13,000	+3,200	+32.7%
Tribal Energy Loan Guarantee Program	2,000	4,000	6,300	+2,300	+57.5%
Total, Credit Programs	36,000	-122,218	-107,224	+14,994	+12.3%
Energy Projects	0	221,969	0	-221,969	-100.0%
Total, Energy Programs	15,966,224	15,305,968	19,732,531	+4,426,563	+28.9%
Weapons Activities	15,920,000	17,116,119	18,832,947	+1,716,828	+10.0%
Defense Nuclear Nonproliferation	2,354,000	2,490,000	2,508,959	+18,959	+0.8%
Naval Reactors ⁽¹⁾	1,918,000	2,081,445	1,964,100	-117,345	-5.6%
Federal Salaries and Expenses	464,000	475,000	538,994	+63,994	+13.5%
National Nuclear Security Administration Rescissions	-288,133	0	0	0	N/A
Total, National Nuclear Security Administration	20,367,867	22,162,564	23,845,000	+1,682,436	+7.6%
Defense Environmental Cleanup	6,710,000	7,025,000	7,073,587	+48,587	+0.7%
Other Defense Activities	985,000	1,035,000	1,075,197	+40,197	+3.9%
Defense Uranium Enrichment D&D	573,333	586,035	427,000	-159,035	-27.1%
Total, Environmental and Other Defense Activities	8,268,333	8,646,035	8,575,784	-70,251	-0.8%
Nuclear Energy (050)	149,800	150,000	177,733	+27,733	+18.5%
Total, Atomic Energy Defense Activities	28,786,000	30,958,599	32,598,517	+1,639,918	+5.3%
Southeastern Power Administration	0	0	0	0	N/A
Southwestern Power Administration	10,400	10,608	11,440	+832	+7.8%
Western Area Power Administration	90,772	98,732	99,872	+1,140	+1.2%
Falcon and Amistad Operating and Maintenance Fund	228	228	228	0	N/A
Colorado River Basins Power Marketing Fund	0	0	0	0	N/A
Total, Power Marketing Administrations	101,400	109,568	111,540	+1,972	+1.8%
Federal Energy Regulatory Commission	0	0	0	0	N/A
Total, Energy and Water Development and Related Agencies	44,853,624	46,374,135	52,442,588	+6,068,453	+13.1%
Excess Fees and Recoveries, FERC	-9,000	-9,000	-9,000	0	N/A
Title XVII Loan Guar. Prog Section 1703 Negative Credit Subsidy Receipt	-10,000	-14,000	-7,000	+7,000	+50.0%
UED&D Fund Offset	-573,333	-586,035	-427,000	+159,035	+27.1%
Discretionary Funding by Appropriation	44,261,291	45,765,100	51,999,588	+6,234,488	+13.6%
DOE Budget Function	44,261,291	45,765,100	51,999,588	+6,234,488	+13.6%
NNSA Defense (050) Total	20,367,867	22,162,564	23,845,000	+1,682,436	+7.6%
Non-NNSA Defense (050) Total	8,418,133	8,796,035	8,753,517	-42,518	-0.5%
Defense (050)	28,786,000	30,958,599	32,598,517	+1,639,918	+5.3%
Science (250)	7,475,000	8,100,000	8,800,400	+700,400	+8.6%
Energy (270)	8,000,291	6,706,501	10,600,671	+3,894,170	+58.1%
Non-Defense (Non-050)	15,475,291	14,806,501	19,401,071	+4,594,570	+31.0%

⁽¹⁾ Funding does not reflect the mandated transfer of \$92.75 million in FY 2022 and \$99.75 million in FY 2023 from Naval Reactors to the Office of Nuclear Energy for operation of the Advanced Test Reactor.

⁽²⁾ Funding does not reflect the mandated transfer of \$20 million from the Office of Nuclear Energy to the Office of Science for Nuclear Facilities Oak Ridge National Laboratory Operations and Maintenance.

⁽³⁾ FY 2023 Enacted levels for base funding includes \$300 million for the Office of Nuclear Energy that was enacted in Division M, Additional Ukraine Supplemental Appropriations, of the Consolidated Appropriations Act, 2023 (P.L. 117-328). This funding is a part of the total \$12.5 billion governmentwide originally intended to be base appropriations that was designated as emergency requirements for purposes of the 2023 Omnibus agreement.

**Environmental Management
Proposed Appropriations Language**

Defense Environmental Cleanup

For Department of Energy expenses, including the purchase, construction, and acquisition of plant and capital equipment and other expenses necessary for atomic energy defense environmental cleanup activities in carrying out the purposes of the Department of Energy Organization Act (42 U.S.C. 7101 et seq.), including the acquisition or condemnation of any real property or any facility or for plant or facility acquisition, construction, or expansion, [\$7,025,000,000]\$7,073,587,000, to remain available until expended: Provided, That of such amount, [\$317,002,000]\$326,893,000 shall be available until September 30, [2024] 2025, for program direction. (Energy and Water Development and Related Agencies Appropriations Act, 2023.)

(INCLUDING TRANSFER OF FUNDS)

For an additional amount for atomic energy defense environmental cleanup activities for Department of Energy contributions for uranium enrichment decontamination and decommissioning activities, [\$586,035,000]\$427,000,000, to be deposited into the Defense Environmental Cleanup account, which shall be transferred to the "Uranium Enrichment Decontamination and Decommissioning Fund". (Energy and Water Development and Related Agencies Appropriations Act, 2023.)

Non-Defense Environmental Cleanup

For Department of Energy expenses, including the purchase, construction, and acquisition of plant and capital equipment and other expenses necessary for nondefense environmental cleanup activities in carrying out the purposes of the Department of Energy Organization Act (42 U.S.C. 7101 et seq.), including the acquisition or condemnation of any real property or any facility or for plant or facility acquisition, construction, or expansion, [and the purchase of one passenger motor vehicle, \$358,583,000]\$348,700,000, 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] 2024 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. (Energy and Water Development and Related Agencies Appropriations Act, 2023.)

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, [\$879,052,000]\$857,482,000, to be derived from the Uranium Enrichment Decontamination and Decommissioning Fund, to remain available until expended, of which [\$14,800,000]\$24,400,000 shall be available in accordance with title X, subtitle A, of the Energy Policy Act of 1992. (Energy and Water Development and Related Agencies Appropriations Act, 2023.)

**Environmental Management
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	FY 2022 Enacted	FY 2023 Enacted	FY 2024 Request
Defense EM Funded UE D&D Fund Contribution	573,333	586,035	427,000
Defense Environmental Cleanup	6,710,000	7,025,000	7,073,587
Non-Defense Environmental Cleanup	333,863	361,583	351,700
Uranium Enrichment Decontamination and Decommissioning Fund	860,000	879,052	857,482
Subtotal, Environmental Management	8,477,196	8,851,670	8,709,769
Mercury Storage Receipts	0	-3,000	-3,000
D&D Fund Offset	-573,333	-586,035	-427,000
Total, Environmental Management	7,903,863	8,262,635	8,279,769

Overview

The Office of Environmental Management (EM) mission is to complete the safe cleanup of the environmental legacy brought about from decades of nuclear weapons development and government-sponsored nuclear energy research. EM's priority is to ensure the safety and health of the public and EM's workforce while continuing to protect the environment. The EM 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, other Minority Serving Institutions, and Tribal Colleges and Universities; expand consultation with Tribal Nations and increase engagement with communities and stakeholders; and sustain union jobs. Approximately 95% of EM's budget is spent on contractors. EM's new contracts exemplify DOE's commitment to continue supporting a highly skilled, diverse workforce that provides more than 27,000 jobs in safe and healthy workplaces complex wide. In late 2022, DOE released its first ever Diversity, Inclusion, and Accessibility Strategic Plan to underscore the Department's commitment to creating a workplace that celebrates Americans of all backgrounds. The plan outlines actions to sustain an inclusive and accessible work environment by strengthening recruitment, retention and promotion, while removing inequitable barriers to advancement and development opportunities.

To advance cleanup, EM will utilize science-based approaches; apply best practices and lessons learned; identify, develop, and deploy practical technological science-based solutions; and look for innovative and sustainable practices that make cleanup safer, more efficient, and more cost-effective.

EM Progress

One of the largest environmental remediation efforts in the world, the program helps and protects 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 is enhancing management focus and strategic planning for technology research and development efforts to make them more efficient and impactful to our most challenging cleanup activities. A network of national labs and Savannah River National Laboratory developed a roadmap for accelerating the tank waste mission at Hanford. Investments have been made to further protect groundwater, accelerate tank waste treatment, and enhance worker safety through the development of wearable robotic devices. EM continues to consider ways to improve on approaches that address remaining cleanup challenges, accelerate cleanup, and offer a significant return on investment.

In the field, EM realized a set of accomplishments in 2022, some years in the making, that not only have immediate risk reduction benefits but help position sites for more progress. EM reached a milestone by completing legacy cleanup activities at the Brookhaven National Laboratory. Brookhaven marks the 92nd site where legacy cleanup has been completed, leaving just 15 to go in the EM program.

The Hanford Site began large-scale treatment of tank waste for the first time, a new game-changing tank waste treatment capability is nearly operational in Idaho, and record amounts of tank waste are being treated at the Savannah River Site. Other risk reduction priorities were achieved in 2022, including increased shipments of legacy transuranic, or transuranic, waste from Los Alamos, surpassing an EM priority; a transuranic waste retrieval effort in Idaho finished 18 months ahead of schedule; a seventh former plutonium reactor at Hanford cocooned, leaving just one more to go; and another million tons of uranium mill tailings moved away from the Colorado River at Moab. Processing of the remaining inventory of uranium-233 got underway at Oak Ridge reducing risks, while eliminating future costs and boosting cancer research.

A major skyline change was achieved at Portsmouth where the site's first former gaseous diffusion process building was demolished ahead of schedule. After decades of preparations, demolition of the Main Plant at the West Valley Demonstration Project got underway. Following successful demolition last year, the Oak Ridge Y-12 Biology Complex was transferred out of EM to be utilized by the National Nuclear Security Administration for national security purposes.

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, consistent with the goals outlined in the Department's Diversity, Equity, Inclusion and Accessibility Strategic Plan. 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. In March 2022, through additional funding from Congress, the Minority Institutions Program expanded to include three more components: Technology, Curriculum, and Professional Development Program, Graduate Fellowship Program, and EM/Minority Serving Institutions Shared Interest Research Partnership.

In looking to the future of cleanup, EM is committed to close collaboration with a diverse set of communities, Tribes, regulators, stakeholders, advisory boards, industry partners, labor and others. EM is building strong relationships that will achieve alignment on shared goals, address remaining challenges, and enable sustained progress. The Justice40 Initiative, an EM 2022 priority, has provided a new opportunity to boost engagement with stakeholders, ensure the voice of those most impacted is heard, and help underserved communities. EM will build on the funding from FY 2023 of the Community Capacity Building Program to provide funding to disadvantaged communities. EM will use a merit-based, competitive process to prioritize resources to recipients near EM locations with high or persistent poverty who have not benefitted from the significant economic activity generated by EM.

The achievements of 2022 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.

As EM utilizes these tools to continue and complete cleanup, we are doing so with an eye towards "what's next". As EM clears the decks, industry, local communities, and others have been diligent about looking to the future. We are taking steps now to define the path forward for sites, so they are well positioned for future economic growth, clean energy missions, and remain integral to national security and scientific research missions. One example is Savannah River. As EM completes cleanup there, our role is decreasing while the National Nuclear Security Administration's is increasing. Last year EM started a joint process to transition primary authority for Savannah River from EM to the National Nuclear Security Administration. We are taking a deliberate approach to the transition which is expected to be complete in FY 2025. EM will retain responsibility until transition is complete, and EM will have a cleanup mission there after the transition. EM is

committed to a transparent process that will engage the workforce and community, Congress, and other stakeholders throughout the transition. In addition to the path forward for Savannah River, EM is looking to the future of all sites. EM wants to ensure that those most impacted by the legacy of the past have a seat at the table for discussions about stewardship, restoration, and enduring economic growth. And, to support ongoing cleanup, EM will continue to rely on our commercial disposal partners to be key players in EM's successes. EM will work to maintain multiple disposal options for Low-Level Waste and Mixed Low-Level Waste generators. EM is working to scale up the Test Bed Initiative at Hanford to demonstrate the feasibility of offsite tank waste disposal consistent with the recommendations of the General Accounting Office and Energy Communities Alliance. DOE is conducting a 2,000-gallon Test Bed Initiative to demonstrate the feasibility of options for retrieval and treatment of the low activity portion of the tank waste at the Hanford Site. This waste is designated as low activity waste. Once treated, it contains the same constituents as low-level radioactive waste and would be similar to low-level waste managed at Hanford, other DOE sites, and commercially-generated waste regulated by the Nuclear Regulatory Commission. The initiative will use existing processes and commercial facilities to immobilize the treated Hanford tank waste in a solid form which will then be disposed of out of Washington State. Additionally, EM has a Final Supplemental Environmental Impact Statement in preparation and a procurement underway to find a long-term management facility for elemental mercury.

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 an integrated approach to strategically timed engagement and communication,

To help further, EM has planning tools in place to evaluate opportunities to meet remaining challenges and achieve more in the coming decades. EM's calendar year priorities drive focus on near-term progress and create needed alignment on cleanup goals. And EM's Strategic Vision gives us an outline of the intermediate term that guides our priorities over the next decade.

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

EM is making significant progress with its "end-state" contracting approach. 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 recompeted over the next several years. The goal 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. 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 successes, EM will assess all contracts to identify best practices and share them across the complex.

Highlights and Major Changes in the FY 2023 Budget Request

In FY 2024, EM will maintain and build upon the momentum generated through recent cleanup successes.

The FY 2024 investment of \$8,279,769,000 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 2024, continued progress will be made on the treatment of radioactive tank waste across the complex- EM's largest environmental and financial challenge. At the Savannah River Site, the Liquid Waste Program will achieve additional risk reduction by immobilizing high activity waste in glass through vitrification 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; and produce up to 220 canisters of vitrified high-level waste in the Defense Waste Processing Facility. In agreement with the State and the Environmental Protection Agency, Tank Closure Cesium Removal operation was suspended to allow acceleration of the operational closure of Tanks 9, 10, and 11, which are in the Savannah River Site water table and carry the highest liability to the Liquid Waste mission.

The Office of River Protection FY 2024 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 operate the Direct Feed Low Activity Waste system. 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 2024 request is designed to reduce risk; maintain safe operations; perform Hanford site-wide services; support Direct Feed Low-Activity Waste commissioning and operations; 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, 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 2024 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. 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. Final plant modifications are underway in preparation for radiological operations in FY 2023. 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. Additionally, the request supports progress toward Critical Decision 1 for the Calcine Disposition Project.

At Oak Ridge, the FY 2024 budget request supports the transition to cleanup of high-risk excess facilities at Oak Ridge National Laboratory and Y-12 National Security Complex, following successful Deactivation and Demolition activities at the East Tennessee Technology Park. The request also supports operating 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 2024 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 2024 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 147 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; install 2 and initiate 3 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); complete 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; and continue the Decontamination and Demolition of Deactivated National Nuclear Security Administration excess high-risk facilities (Ion Beam Facility).

At Portsmouth, the FY 2024 budget request will support the continued construction of the second On-Site Waste Disposal Facility project (20-U-401); 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 2024 budget request will continue the segmentation and downsizing of the C-333 process building converters and bundle compaction, which is the 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 2024 budget request continues to support the ongoing demolition of the Main Plant Process Building; continuing site operations and maintenance; and waste processing, shipping, and disposal of newly generated waste.

At Moab, the FY 2024 budget request supports efforts to accelerate site closure at the Moab site. The FY 2024 request level will enable the Project to continue to safely excavate, transport, and dispose of approximately 1 million tons of uranium mill tailings over 12 months.

At the Lawrence Livermore National Laboratory, demolition planning efforts will continue on National Nuclear Security Administration-owned high-risk contaminated excess facilities. The request will commence Building 175 slab and soil removal; complete the demolition of Building 280 and of Building 251 to slab.

EM's FY 2024 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.

DOE Equity Action Plan

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, 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 Research and Development and other programs supported through financial assistance.
- Expand strategic Tribal and stakeholder engagement in all DOE business areas.

Working Capital Fund

In FY 2024, EM’s share of the Working Capital Fund is estimated at \$32,586,000 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 2024 Program Direction Working Capital Fund estimate is \$11,146,000.

EM’s remaining FY 2024 Working Capital Fund request is \$21,440,000. 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 2024 Working Capital Fund Estimate

	Program Direction	EM Cleanup	Total
A123	0	399	399
Building Occupancy	7,826	0	7,826
Copy Services	0	137	137
Corporate Business Systems	208	7,953	8,161

	Program Direction	EM Cleanup	Total
Corp Training Services	457	0	457
Financial Statement Audits	0	2,134	2,134
Health Services	110	0	110
Interagency Transfers	0	1,504	1,504
Mail & Transportation	0	193	193
Overseas Presence	358	0	358
Pension Studies	0	273	273
PMCDP	0	708	708
Print & graphics	0	326	326
Procurement Management	0	7,813	7,813
Supply	223	0	223
Telecom	1,964	0	1,964
Total	11,146	21,440	32,586

Future Years Energy Program (FYEP)

	FY 2024 Request	FY 2025	FY 2026	FY 2027	FY 2028
Defense Environmental Cleanup	7,073,587	7,237,000	7,403,000	7,573,000	7,626,000
Defense Uranium Enrichment D&D	427,000	437,000	447,000	457,000	460,000
Non-Defense Environmental Cleanup	348,700	357,000	365,000	374,000	382,000
Uranium Enrichment D&D Fund	857,482	877,000	897,000	918,000	939,000
Subtotal	8,706,769	8,908,000	9,112,000	9,322,000	9,407,000
Offsets	(427,000)	(437,000)	(447,000)	(457,000)	(468,000)
Grand Total, EM	8,279,769	8,471,000	8,665,000	8,865,000	8,947,000

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 2022 Enacted	FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 Enacted	FY 2024 Request vs FY 2023 Enacted (%)
Defense EM Funded UE D&D Fund Contribution					
Contribution to the Uranium Enrichment D&D Fund	573,333	586,035	427,000	-159,035	-27%
Defense Environmental Cleanup					
Closure Sites					
Closure Sites Administration	3,987	4,067	3,023	-1,044	-26%
Hanford Site					
Central Plateau Remediation	650,926	695,071	684,289	-10,782	-2%
Richland Community and Regulatory Support	8,621	10,013	10,100	+87	+1%
River Corridor and Other Cleanup Operations	254,479	279,085	180,000	-99,085	-36%
Construction					
18-D-404: Modification of Waste Encapsulation and Storage Facility, Richland, WA (PBS RL-0013C)	8,000	3,100	0	-3,100	-100%
22-D-401: Eastern Plateau Fire Station, (RL-0201)	15,200	3,100	7,000	+3,900	+126%
22-D-402: 200 Area Water Treatment Facility, (RL-0201)	12,800	8,900	11,200	+2,300	+26%
23-D-404: 181D Export Water System Reconfiguration and Upgrade	0	6,770	27,149	+20,379	+301%
23-D-405: 181B Export Water System Reconfiguration and Upgrade	0	480	462	-18	-4%
24-D-401: Environmental Restoration Disposal Facility Supercell 11 Expansion Project, Hanford Site, Richland, (RL-0013C)	0	0	1,000	+1,000	+100%
Total, Construction	36,000	22,350	46,811	+24,461	+109%
Total, Hanford Site	950,026	1,006,519	921,200	-85,319	-8%
Idaho National Laboratory					
Idaho Cleanup and Waste Disposition	432,313	424,295	377,623	-46,672	-11%
Idaho Community and Regulatory Support	2,658	2,705	2,759	+54	+2%
Construction					
22-D-403: Idaho Spent Nuclear Fuel Staging Facility, ID (ID-0012B-D)	3,000	8,000	10,159	+2,159	+27%
22-D-404: Additional ICDF Landfill Disposal Cell and Evaporation Ponds Project (ID-0030B)	5,000	8,000	46,500	+38,500	+481%
23-D-402: Idaho Calcine Construction (ID-0012B-D)	0	15,000	10,000	-5,000	-33%
Total, Construction	8,000	31,000	66,659	+35,659	+115%

	FY 2022 Enacted	FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 Enacted	FY 2024 Request vs FY 2023 Enacted (%)
Total, Idaho National Laboratory	442,971	458,000	447,041	-10,959	-2%
NNSA Sites					
Lawrence Livermore National Laboratory	1,806	1,842	1,879	+37	+2%
LLNL Excess Facilities D&D	35,000	35,000	20,195	-14,805	-42%
Los Alamos Excess Facilities D&D	17,000	40,519	13,648	-26,871	-66%
Los Alamos National Laboratory	275,119	286,316	273,831	-12,485	-4%
Nevada	75,737	62,652	61,952	-700	-1%
Sandia National Laboratories	4,576	4,003	2,264	-1,739	-43%
Separations Processing Research Unit	15,000	15,300	15,300	+0	+0%
Total, NNSA Sites	424,238	445,632	389,069	-56,563	-13%
Oak Ridge					
OR Cleanup and Disposition	73,725	62,000	72,000	+10,000	+16%
OR Nuclear Facility D&D	337,062	334,221	335,000	+779	+0%
OR Reservation Community and Regulatory Support	5,096	5,300	5,500	+200	+4%
OR Technology Development and Deployment	3,000	3,000	3,000	+0	+0%
U233 Disposition Program	55,000	55,628	55,000	-628	-1%
Construction					
14-D-403: Outfall 200 Mercury Treatment Facility, OR (OR-0041)	0	10,000	10,000	+0	+0%
17-D-401: On-Site Disposal Facility	12,500	35,000	24,500	-10,500	-30%
Total, Construction	12,500	45,000	34,500	-10,500	-23%
Total, Oak Ridge	486,383	505,149	505,000	-149	+0%
Office of River Protection					
ORP Low-Level Waste Offsite Disposal	7,000	0	0	+0	+0%
Tank Farm Activities	837,642	851,100	813,625	-37,475	-4%
Waste Treatment and Immobilization Plant	50,000	50,000	466,000	+416,000	+832%
Construction					
01-D-16D: High Level Waste Facility	144,358	392,200	600,000	+207,800	+53%
01-D-16E: Pretreatment Facility	20,000	20,000	20,000	+0	+0%
15-D-409: Low Activity Waste Pretreatment System, Hanford (ORP-0014)	0	0	60,000	+60,000	+100%
18-D-16: Waste Treatment and Immobilization Plant LBL/Direct Feed LAW	586,000	412,700	0	-412,700	-100%
23-D-403: Hanford 200 West Area Tank Farms Risk Management Project (ORP-0014)	0	4,408	15,309	+10,901	+247%
Total, Construction	750,358	829,308	695,309	-133,999	-16%

	FY 2022 Enacted	FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 Enacted	FY 2024 Request vs FY 2023 Enacted (%)
Total, Office of River Protection	1,645,000	1,730,408	1,974,934	+244,526	+14%
Savannah River Site					
Radioactive Liquid Tank Waste Stabilization and Disposition	889,365	851,660	880,323	+28,663	+3%
Savannah River Legacy Pensions	130,882	132,294	65,898	-66,396	-50%
Savannah River National Laboratory O&M	0	41,000	42,000	+1,000	+2%
Savannah River Risk Management Operations	459,090	485,864	453,109	-32,755	-7%
SR Community and Regulatory Support	11,805	12,137	12,389	+252	+2%
Construction					
18-D-401: Saltstone Disposal Unit #8/9, SR (SR-0014C)	68,000	49,832	31,250	-18,582	-37%
18-D-402: Emergency Operations Center	8,999	25,568	34,733	+9,165	+36%
19-D-701: SR Security System Replacement	5,000	12,000	0	-12,000	-100%
20-D-401: Saltstone Disposal Unit 10 11 12	19,500	37,668	56,250	+18,582	+49%
Total, Construction	101,499	125,068	122,233	-2,835	-2%
Total, Savannah River Site	1,592,641	1,648,023	1,575,952	-72,071	-4%
Program Support					
Mission Support	62,979	82,283	103,504	+21,221	+26%
Program Direction	305,207	317,002	326,893	+9,891	+3%
Safeguards and Security	323,144	329,220	332,645	+3,425	+1%
Technology Development and Deployment					
Mission Support	30,000	40,000	30,000	-10,000	-25%
Waste Isolation Pilot Plant					
Waste Isolation Pilot Plant	353,424	353,424	369,961	+16,537	+5%
Construction					
15-D-411: Safety Significant Confinement Ventilation System, WIPP	65,000	59,073	44,365	-14,708	-25%
15-D-412: Utility Shaft	25,000	46,200	50,000	+3,800	+8%
Total, Construction	90,000	105,273	94,365	-10,908	-10%
Total, Waste Isolation Pilot Plant	443,424	458,697	464,326	+5,629	+1%
Total, Defense Environmental Cleanup	6,710,000	7,025,000	7,073,587	+48,587	+1%
Non-Defense Environmental Cleanup					
Mercury Storage Receipts	0	3,000	3,000	+0	+0%
Management and Storage of Elemental Mercury	2,100	2,100	0	-2,100	-100%
Fast Flux Test Reactor Facility D&D	3,100	3,200	3,200	+0	+0%
Gaseous Diffusion Plants					
Paducah Gaseous Diffusion Plant	59,863	70,921	67,107	-3,814	-5%

Environmental Management/
Overview

FY 2024 Congressional Justification

	FY 2022 Enacted	FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 Enacted	FY 2024 Request vs FY 2023 Enacted (%)
Portsmouth Gaseous Diffusion Plant	61,340	60,017	65,876	+5,859	+10%
Total, Gaseous Diffusion Plants	121,203	130,938	132,983	+2,045	+2%
Small Sites					
Energy Technology Engineering Center	21,340	26,409	44,135	+17,726	+67%
Idaho National Laboratory	11,000	13,500	11,500	-2,000	-15%
Lawrence Berkeley National Laboratory	5,000	15,000	0	-15,000	-100%
Moab	67,000	67,000	67,000	+0	+0%
Other Sites	15,000	10,554	0	-10,554	-100%
Total, Small Sites	119,340	132,463	122,635	-9,828	-7%
West Valley Demonstration Project	88,120	89,882	89,882	+0	+0%
Total, Non-Defense Environmental Cleanup	333,863	361,583	351,700	-9,883	-3%
Uranium Enrichment Decontamination and Decommissioning Fund					
U/Th Reimbursements					
Mission Support	16,155	14,800	24,400	+9,600	+65%
Oak Ridge	105,000	92,946	91,000	-1,946	-2%
Paducah	240,000	240,000	217,874	-22,126	-9%
Portsmouth					
Portsmouth Gaseous Diffusion Plant	392,911	424,354	418,258	-6,096	-1%
Construction					
15-U-408: On-Site Waste Disposal Facility, Portsmouth (PO-0040)	8,900	0	0	+0	+0%
20-U-401: On Site Waste Disposal Facility (Cell Line 2&3)	65,235	56,040	74,552	+18,512	+33%
Total, Construction	74,135	56,040	74,552	+18,512	+33%
Total, Portsmouth	467,046	480,394	492,810	+12,416	+3%
Pension and Community and Regulatory Support					
Oak Ridge	25,000	25,000	25,000	+0	+0%
Paducah Gaseous Diffusion Plant	2,739	2,782	2,838	+56	+2%
Portsmouth Gaseous Diffusion Plant	4,060	23,130	3,560	-19,570	-85%
Total, Pension and Community and Regulatory Support	31,799	50,912	31,398	-19,514	-38%
Total, Uranium Enrichment Decontamination and Decommissioning Fund	860,000	879,052	857,482	-21,570	-2%
Total, Environmental Management	8,477,196	8,851,670	8,709,769	-141,901	-2%
Mercury Storage Receipts	0	-3,000	-3,000	+0	+0%
D&D Fund Offset	-573,333	-586,035	-427,000	+159,035	-27%
Total, Environmental Management	7,903,863	8,262,635	8,279,769	+17,134	+0%

Environmental Management/
Overview

FY 2024 Congressional Justification

FY 2022 Enacted	FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 Enacted	FY 2024 Request vs FY 2023 Enacted (%)
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Full Time Equivalent

1,290	1,375	1,425	+50	+4%
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SBIR/STTR:

- FY 2022 Enacted Transfer: SBIR \$1,205; STTR \$0
- FY 2023 Enacted Transfer: SBIR \$1,570; STTR \$0
- FY 2024 Request: SBIR \$1,205; STTR \$0

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

	FY 2022 Enacted	FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 Enacted	FY 2024 Request vs FY 2023 Enacted (%)
Carlsbad	451,230	466,523	474,613	+8,090	+2%
Idaho	453,971	471,500	458,541	-12,959	-3%
Oak Ridge	629,783	637,010	635,000	-2,010	+0%
Paducah	318,808	329,809	304,349	-25,460	-8%
Portsmouth	549,136	580,131	579,610	-521	+0%
Richland	1,052,426	1,113,669	1,025,066	-88,603	-8%
River Protection	1,645,000	1,730,408	1,974,934	+244,526	+14%
Savannah River	1,757,085	1,807,872	1,738,885	-68,987	-4%
Lawrence Livermore National Laboratory	36,806	36,842	22,074	-14,768	-40%
Los Alamos National Laboratory	292,119	331,835	292,479	-39,356	-12%
Nevada	75,737	62,652	61,952	-700	-1%
Sandia Site Office	4,576	4,003	2,264	-1,739	-43%
Separations Process Research Unit	15,000	15,300	15,300	+0	+0%
West Valley Demonstration Project	93,418	95,866	95,747	-119	+0%
Energy Technology Engineering Center	21,340	26,409	44,135	+17,726	+67%
Moab	67,000	67,000	67,000	+0	+0%
Other Sites					
Closure Sites Administration	3,987	4,067	3,023	-1,044	-26%
Lawrence Berkeley National Laboratory	5,000	15,000	0	-15,000	-100%
Other Sites	15,000	10,554	0	-10,554	-100%
Subtotal, Other Sites	23,987	29,621	3,023	-26,598	-90%
Program Direction	305,207	317,002	326,893	+9,891	+3%
D&D Fund Deposit	573,333	586,035	427,000	-159,035	-27%
Mission Support	111,234	142,183	160,904	+18,721	+13%
Subtotal, Environmental Management	8,477,196	8,851,670	8,709,769	-141,901	-2%
Mercury Storage Receipts	0	-3,000	-3,000	+0	+0%
D&D Fund Offset	-573,333	-586,035	-427,000	+159,035	-27%
Total, Environmental Management	7,903,863	8,262,635	8,279,769	+17,134	+0%

**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 2022 Enacted	FY 2022 Actuals	FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 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	16,500	+16,500
Minor Construction (GPP and IGPP) (<\$25M)	529,313	85,958	104,052	68,288	93,458	180,480	+87,022
Total, Capital Operating Expenses	529,313	85,958	104,052	68,288	93,458	196,980	+103,522

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

<u>Carlsbad (Direct Funded)</u>							
Emergency Preparedness Facility	18,200	0	0	0	0	3,490	+3,490
Upgrade Bulkhead Control System	800	0	0	0	0	800	+800
Power to Fab Building from LIS	1,060	0	0	0	0	1,060	+1,060
700B Fan Refurb	250	0	0	0	0	250	+250
Hoist Controller Upgrade (salt and waste) Contact Handled (CH) and Remote Handled (RH) Confinement	2,000	0	0	0	2,000	0	-2,000
Ventilation System HVAC Replacement	14,800	0	0	0	4,000	10,800	+6,800
Electrical Substation #2 Replacement Fabrication	1,700	0	0	0	1,700	0	-1,700
Electrical Substation #4 Replacement Fabrication	1,700	0	0	0	1,700	0	-1,700
Electrical Substation #6 Replacement Fabrication	1,700	0	0	0	1,700	0	-1,700
Motor Control Center Replacements	4,600	0	0	0	4,600	0	-4,600
Design and Install Automatic Center of Gravity Lift Fixture	5,000	0	0	0	5,000	0	-5,000
Total, Carlsbad	51,810	0	20,000	0	20,700	16,400	-4,300

Total	Prior Years	FY 2022 Enacted	FY 2022 Actuals	FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 Enacted
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Idaho (Direct Funded)

Shipping Capability for RH TRU Waste using Shielded Container Assemblies	1,026	0	0	0	1,026	0	-1,026
NRC Licensed SNF Storage	4,500	2,250	2,250	4,309	0	0	0
Product Storage Building	20,000	0	0	0	20,000	0	-20,000
EV Charging Stations	2,000	0	0	0	0	2,000	+2,000
Refurbish CPP 1699	500	0	0	0	0	500	+500
IWTU Maintenance/Operations Construction	2,000	0	0	0	0	2,000	+2,000
INTEC Office Trailers	3,000	0	0	0	0	3,000	+3,000
Phone E-911	4,000	0	0	0	0	4,000	+4,000
CPP-691 Safety Systems	2,000	0	0	0	0	2,000	+2,000
Total, Idaho	39,026	2,250	2,250	4,309	21,026	13,500	-7,526

Oak Ridge (Direct Funded)

Disposal Area Remedial Action Facility Upgrade	9,000	0	0	0	0	9,000	+9,000
Landfill Expansion	11,500	0	0	0	11,500	0	-11,500
Transportation Center Relocation	11,000	0	0	0	0	11,000	+11,000
ORNL Infrastructure Buildout	15,500	0	0	0	0	15,500	+15,500
Y-12 Infrastructure Buildout	16,500	0	0	0	0	16,500	+16,500
Building 3608 Above Ground Pipe Replacement	18,803	1,500	9,000	8,000	7,303	2,000	-5,303
LGWO Chemical Addition	4,500	0	0	0	0	4,500	+4,500
LGWO Cathodic Protection	2,000	0	0	0	0	2,000	+2,000
LGWO Pipe Replacement 2600	9,500	0	0	0	0	9,500	+9,500
Total, Oak Ridge	98,303	1,500	9,000	8,000	18,803	70,000	+51,197

Paducah (Direct Funded)

Large Item Neutron Assay System	5,047	4,349	698	3,548	0	0	0
ProForce Training/Track/Shoothouse	4,921	561	2,500	90	1,860	0	-1,860

**Environmental Management/
Overview**

	Total	Prior Years	FY 2022 Enacted	FY 2022 Actuals	FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 Enacted
Emergency Operations Center	6,000	0	6,000	1,734	0	0	0
ProForce Facility	5,923	461	2,990	555	2,472	0	-2,472
Classified Records Storage	1,000	1,000	0	0	0	0	0
Fire Department/Emergency Services Building	414	0	0	0	0	414	+414
Outdoor Lighting Upgrades	1,093	0	0	0	0	1,093	+1,093
Total, Paducah	24,398	6,371	12,188	5,927	4,332	1,507	-2,825
<u>Portsmouth (Direct Funded)</u>							
Electrical Supply and Distribution Gaseous Diffusion Plant	23,945	1,656	12,400	92	5,164	4,725	-439
Total, Portsmouth	23,945	1,656	12,400	92	5,164	4,725	-439
<u>Richland (Direct Funded)</u>							
L-707, Advanced Electrical Metering ^a	1,271	59	1,212	94	0	0	0
L-819, High Capacity Fiber Optic (300 Area Central Plateau) ^a	1,669	0	1,669	1,669	0	0	0
L-850, Replace 200W 1.1M Gallon PW Tank (DFLAW Priority) ^a	21,508	1,720	7,788	7,737	0	12,000	+12,000
L-894, Raw Water Cross Connection Isolation 200E/W ^a	7,485	7,089	396	329	0	0	0
L-895, Fire Protection Infrastructure for Plateau Raw Water ^a	19,264	8,945	3,888	4,298	2,769	2,700	+69
L-898, 100 Area Mission Critical Distribution Feeders Replacement ^a	18,000	3	923	823	0	18,000	+18,000
L-928 Reroute 12in Raw Water Line Near 241AP Farm ^a	2,944	0	468	410	2,476	0	-2,476
RF-003, Fleet Complex ^a	500	0	0	0	500	0	-500
Electric Vehicle Charging Stations ^a	2,000	0	0	0	2,000	0	-2,000
W-185 Integrated Disposal Facility Pad Construction	1,626	0	834	834	792	0	-792
W-190 Integrated Disposal Facility Modifications	2,687	2,419	37	37	231	0	-231
Total, Richland	78,954	20,235	17,215	16,231	8,768	32,700	+23,932
^a These capital investments represent expenditures that may be performed between FY 2023 and FY 2024 based on emerging risks.							
<u>River Protection (Direct Funded)</u>							
Construct New Maintenance Shop ^a	13,678	9,267	2,995	2,995	1,416	0	-1,416

**Environmental Management/
Overview**

	Total	Prior Years	FY 2022 Enacted	FY 2022 Actuals	FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 Enacted
Effluent Treatment Facility Acetonitrile Treatment Upgrade ^a	18,094	11,324	5,801	5,801	969	0	-969
Effluent Treatment Facility TF Load in Expansion ^a	15,836	5,822	6,875	6,875	3,139	0	-3,139
222-S Ancillary Equipment Addition ^a	9,255	1,175	0	0	0	8,080	+8,080
222-S Lab Renovation – Room 4A ^a	5,460	0	0	0	0	5,460	+5,460
222-S Lab Renovation – Room 4C ^a	4,408	0	0	0	0	4,408	+4,408
222-S Lab Renovation – Room 4K ^a	6,108	0	0	0	0	6,108	+6,108
222-S Lab Renovation – Room 1J ^a	4,480	0	0	0	0	4,480	+4,480
222-S Lab Renovation – Room 1GA/1GC ^a	5,384	0	0	0	0	5,384	+5,384
222-Standards Lab ^a	8,835	1,107	0	0	0	7,728	+7,728
222-S Office Space Addition ^a	9,648	4,526	4,828	4,828	294	0	-294
AP Farm Tanker Truck Loading and Off Loading Station ^a	2,212	2,211	1	1	0	0	0
Modular Grout System	2,381	1,646	735	735	0	0	0
ETF Motor Control Center Upgrades	10,688	4,092	6,596	6,596	0	0	0
ETF Brine Storage Tanks ^a	18,400	6,385	3,168	3,168	8,847	0	-8,847
Total, River Protection	134,867	47,555	30,999	30,999	14,665	41,648	+26,983
<u>Savannah River National Lab (Indirect Funded)</u>							
Y-710 Renovate Lab C-159/C-163 – Install (3) Gloveboxes/Hoods & Services	6,000	3,531	0	920	0	0	0
Y-847 SRNL New Facility (Non-RAD) 767	17,500	10	0	10	0	0	0
New Project Y-### SRNL New Facility (Non-RAD) 767-1A	20,000	0	0	0	0	0	0
Y-815 Control Room System Replacement Delta V	7,510	2,850	0	1,800	0	0	0
New Project Y-### Design and Construct a Seismic Qualified Material Storage Vault 773A-B070	12,000	0	0	0	0	0	0
New Project Y-### Replace Roof Systems in the SRNL Campus 773-41A, 773-42A, & 773-43A, Sand Filters	15,000	0	0	0	0	0	0
Total, Savannah River National Lab	78,010	6,391	0	2,730	0	0	0
Total Minor Construction (GPP and IGPP) (<\$25M)	529,313	85,958	104,052	68,288	93,458	180,480	+87,022

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

Total	Prior Years	FY 2022 Enacted	FY 2022 Actuals	FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 Enacted
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Waste Treatment and Immobilization Plant, Hanford WA (ORP-0060)

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

Total Estimate Cost (TEC)	TBD	7,754,000	586,000	469,000	412,700	0	0
Other Project Costs (OPC)	0	0	0	0	0	0	0

01-D-16D, High-Level Waste Facility

Total Estimate Cost (TEC)	TBD	2,830,833	144,358	52,000	392,200	600,000	+207,800
Other Project Costs (OPC)	0	0	0	0	0	0	0

01-D-16E Pretreatment Facility

Total Estimate Cost (TEC)	TBD	3,757,050	20,000	4,700	20,000	20,000	0
Other Project Costs (OPC)	0	0	0	0	0	0	0

Total Estimate Cost (TEC)	TBD	14,341,883	750,358	525,700	824,900	620,000	+207,800
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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	14,341,883	750,358	525,700	824,900	620,000	+207,800
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14-D-403, Outfall 2000 Mercury Treatment Facility (OR-0041)

Total Estimate Cost (TEC)	TBD	0	0	0	10,000	10,000	0
Other Project Costs (OPC)	TBD	0	0	0	0	0	0

Total Project Cost (TPC) 14-D-403	TBD	224,000	0	0	10,000	10,000	0
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*Congress appropriated line-item funds for TPC beginning in FY 2017.

15-U-408, On Site Waste Disposal Facility – Initial Infrastructure and Cell 1, 4 and 5 Liner Construction (PO-0040)

Total Estimate Cost (TEC)	268,058	227,234	8,405	11,403	0	0	0
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Total	Prior Years	FY 2022 Enacted	FY 2022 Actuals	FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 Enacted
Other Project Costs (OPC)	16,616	12,679	495	483	0	0
Total Project Cost (TPC) 15-U-408^b	284,674^a	239,913	8,900	11,886	0	0
15-D-409 Low-Activity Waste Pretreatment System (ORP-0014)						
Total Estimated Cost (TEC)	TBD	320,053	0	0	0	60,000
Other Project Cost (OPC)	TBD	19,314	1,167	1,167	3,000	7,700
Total Project Cost (TPC) 15-D-409	TBD	339,367	1,167	1,167	3,000	67,700
15-D-411, Safety Significant Confinement Ventilation System (WIPP) (CB-0080)						
Total Estimate Cost (TEC)	TBD	301,016	58,000	68,699	50,300	31,365
Other Project Costs (OPC)	TBD	14,200	7,000	2,773	8,773	13,000
Total Project Cost (TPC) 15-D-411	TBD	315,216	65,000	71,472	59,073	44,365
15-D-412, Utility Shaft, formerly Exhaust Shaft (WIPP) (CB-0080)						
Total Estimate Cost (TEC)	TBD	161,600	23,173	55,421	46,200	45,000
Other Project Costs (OPC)	TBD	4,000	1,827	648	0	5,000
Total Project Cost (TPC) 15-D-412	TBD^a	165,600	25,000	56,069	46,200	50,000
17-D-401, On Site Disposal Facility (OR-0041*)						
Total Estimate Cost (TEC)	TBD	48,293	12,073	2,723	34,222	23,722
Other Project Costs (OPC)	TBD	22,621	427	0	778	778
Total Project Cost (TPC) 17-D-401	TBD	70,914	12,500	2,723	35,000	24,500

^a The CD-4 package was approved on August 16, 2022, significantly earlier than the approved CD-4 baseline schedule of 3Q FY 2024. The Total Project Cost will be significantly below the CD-2 approved Total Project Cost estimate by approximately \$35,861,000 when all the costs are finalized.

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

Total	Prior Years	FY 2022 Enacted	FY 2022 Actuals	FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 Enacted	
18-D-401, Saltstone Disposal Unit #8 and #9, SR (SR-0014C)							
Total Estimate Cost (TEC)	255,345	93,577	65,500	65,500	49,832	31,250	-18,582
Other Project Costs (OPC)	24,655	13,064	4,155	4,155	4,125	1,966	-10,905
Total Project Cost (TPC) 18-D-401	280,000	106,641	69,655	69,655	53,957	33,216	-20,741
18-D-402, Emergency Operations Center, SR (SR-0042)							
Total Estimate Cost (TEC)	TBD	15,051	8,999	6,616	25,568	34,733	+9,165
Other Project Costs (OPC)	TBD	4,000	0	0	0	0	0
Total Project Cost (TPC) 18-D-402	TBD	19,051	8,999	6,616	25,568	34,733	+9,165
18-D-404, Modification of Waste Encapsulation and Storage Facility (RL-0013C)							
Total Estimate Cost (TEC)	35,800	32,700	0	0	3,100	0	-3,100
Other Project Costs (OPC)	12,500	4,500	8,000	3,234	0	0	0
Total Project Cost (TPC) 18-D-404	48,300	37,200	8,000	3,234	3,100	0	-3,100
19-D-701, SR Security Replacement System, SR (SR-0042)							
Total Estimate Cost (TEC)	TBD	14,525	5,500	5,500	12,000	0	-12,000
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	5,500	5,500	12,000	0	-12,000
20-U-401, On Site Waste Disposal Facility – Remaining Infrastructure and Cell 2, 3, and 6 Liner Construction (PO-0040)							
Total Estimate Cost (TEC)	341,212	25,756	62,430	59,800	50,840	65,552	+14,712
Other Project Costs (OPC)	31,788	744	2,805	2,600	5,200	9,000	+3,800
Total Project Cost (TPC) 20-U-401	373,000	26,500	65,235	62,400	56,040	74,552	+18,512

Total	Prior Years	FY 2022 Enacted	FY 2022 Actuals	FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 Enacted
20-D-401, Saltstone Disposal Unit #10, #11 and #12, SR (SR-0014C)						
Total Estimate Cost (TEC)	451,507	1,062	19,500	17,807	37,668	56,250 +18,582
Other Project Costs (OPC)	44,493	1,350	4,400	4,400	4,250	5,000 +750
Total Project Cost (TPC) 20-D-401	496,000	2,412	23,900	22,207	41,918	61,250 +19,332
21-D-401, Hoisting Capability Project (CB-0080)						
Total Estimate Cost (TEC)	TBD	10,000	0	0	0	0 0
Other Project Costs (OPC)	0	0	0	0	0	0 0
Total Project Cost (TPC) 21-D-401	TBD	10,000	0	0	0	0 0
22-D-401, Eastern Plateau Fire Station (formerly 400 Area Fire Station) (RL-0201)						
Total Estimate Cost (TEC)	36,200	2,700	13,900	111	2,800	7,000 +4,200
Other Project Costs (OPC)	4,100	1,500	1,300	2	300	0 -300
Total Project Cost (TPC) 22-D-401^a	40,300	4,200	15,200	113	3,100	7,000 +3,900
^a These projects became construction line items in FY 2022. Previously, they were Minor Construction Projects.						
22-D-402, 200 Area Central Plateau Water Treatment Facility (RL-0201)						
Total Estimate Cost (TEC)	43,700	6,600	11,800	7,029	6,500	11,000 +4,500
Other Project Costs (OPC)	4,100	500	1,000	2,959	2,400	200 -2,200
Total Project Cost (TPC) 22-D-402^a	47,800	7,100	12,800	9,988	8,900	11,200 +2,300
^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 (ID-0012B)						
Total Estimate Cost (TEC)	TBD	0	0	0	7,000	9,159 +2,159
Other Project Costs (OPC)	TBD	0	3,000	22	1,000	1,000 0
Total Project Cost (TPC) 22-D-403	TBD	0	3,000	22	8,000	10,159 +2,159

Total	Prior Years	FY 2022 Enacted	FY 2022 Actuals	FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 Enacted
22-D-404 Additional ICDF Landfill Disposal Cell and Evaporation Ponds Project (ID-0030B)						
Total Estimate Cost (TEC)	TBD	0	3,000	23	5,000	46,000 +41,000
Other Project Costs (OPC)	TBD	0	2,000	528	3,000	500 -2,500
Total Project Cost (TPC) 22-D-404	TBD	0	5,000	551	8,000	46,500 +38,500
23-D-402 Calcine Construction (ID-0014B)						
Total Estimate Cost (TEC)	TBD	0	0	0	0	0
Other Project Costs (OPC)	TBD	0	0	0	15,000	10,000 -5,000
Total Project Cost (TPC) 23-D-402	TBD	0	0	0	15,000	10,000 -5,000
23-D-403 200 West Area Tank Farms Risk Management Project (ORP-0014)						
Total Estimated Cost (TEC)	TBD	0	0	0	4,408	15,309 +10,901
Other Project Cost (OPC)	TBD	0	3,422	3,422	500	5,000 +4,500
Total Project Cost (TPC) 23-D-403	TBD	0	3,422	3,422	4,908	20,309 +15,401
23-D-404, 181D Export Water System Reconfiguration and Upgrade (RL-0201)						
Total Estimate Cost (TEC)	65,530	100	0	1,900	6,450	26,999 +20,549
Other Project Costs (OPC)	4,350	1,200	0	800	320	150 -170
Total Project Cost (TPC) 23-D-404	69,880	1,300	0	2,700	6,770	27,149 +20,379
23-D-405, 181B Export Water System Reconfiguration and Upgrade (RL-0201)						
Total Estimate Cost (TEC)	49,378	20	0	20	0	0
Other Project Costs (OPC)	3,442	700	0	300	480	462 -18
Total Project Cost (TPC) 23-D-405	52,820	720	0	320	480	462 -18

Total	Prior Years	FY 2022 Enacted	FY 2022 Actuals	FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 Enacted
24-D-401, ERDF Supercell 11 Expansion Project (RL-0013C)						
Total Estimate Cost (TEC)	0	0	0	0	1,000	+1,000
Other Project Costs (OPC)	0	0	0	0	0	0
Total Project Cost (TPC) 24-D-401	0	0	0	0	1,000	+1,000
Total All Construction Projects						
Total Estimate Cost (TEC) ^c	1,546,730	15,602,170	1,042,638	828,252	1,176,788	-82,449
Other Project Costs (OPC) ^c	146,044	100,372	40,998	27,493	49,126	+10,630
Operating Expense Funded (OPEX)	0	15,000	0	0	0	0
Total Project Cost (TPC) All Construction Projects^d	1,692,774	15,717,542	1,083,636	855,745	1,225,914	-71,819

^b The CD-4 package was approved on August 16, 2022, significantly earlier than the approved CD-4 baseline schedule of 3Q FY 2024. The Total Project Cost will be significantly below the CD-2 approved Total Project Cost estimate by approximately \$35,861,000 when all the costs are finalized.

^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 2022 Enacted	FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 Enacted	FY 2024 Request vs FY 2023 Enacted (%)
Defense Environmental Cleanup					
Operating					
Carlsbad					
CB-0020	7,806	7,826	10,287	+2,461	+31%
CB-0090	42,216	45,238	38,191	-7,047	-16%
CB-0081	23,729	26,245	26,770	+525	+2%
CB-0080	273,266	260,691	285,000	+24,309	+9%
CB-0083	14,213	21,250	20,000	-1,250	-6%
Subtotal, Carlsbad	361,230	361,250	380,248	+18,998	+5%
Idaho					
ID-0100	2,658	2,705	2,759	+54	+2%
ID-0013	152,200	138,005	121,890	-16,115	-12%
ID-0014B	177,648	189,492	172,933	-16,559	-9%
ID-0030B	49,129	15,114	20,800	+5,686	+38%
ID-0012B-D	33,336	32,245	22,000	-10,245	-32%
ID-0040	20,000	49,439	40,000	-9,439	-19%
Subtotal, Idaho	434,971	427,000	380,382	-46,618	-11%
Lawrence Livermore National Laboratory					
VL-LLNL-0031	1,390	1,442	1,449	+7	+0%
VL-FOO-0013B-D	416	400	430	+30	+8%
CBC-LLNL-0040	35,000	35,000	20,195	-14,805	-42%
Subtotal, Lawrence Livermore National Laboratory	36,806	36,842	22,074	-14,768	-40%
Los Alamos National Laboratory					
VL-FAO-0101	3,394	3,394	3,394	+0	+0%
VL-LANL-0030	166,666	166,666	155,173	-11,493	-7%
VL-LANL-0013	105,059	116,256	115,264	-992	-1%
CBC-LANL-0040	17,000	40,519	13,648	-26,871	-66%
VL-LANL-0020	0	5,000	5,000	+0	+0%
Subtotal, Los Alamos National Laboratory	292,119	331,835	292,479	-39,356	-12%
Mission Support					
HQ-MS-0100	6,979	7,239	7,504	+265	+4%
HQ-TD-0100	30,000	40,000	30,000	-10,000	-25%

	FY 2022 Enacted	FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 Enacted	FY 2024 Request vs FY 2023 Enacted (%)
EM-HBCU-0100	56,000	56,000	56,000	+0	+0%
HQ-CCB-0100	0	19,044	40,000	+20,956	+110%
Subtotal, Mission Support Nevada	92,979	122,283	133,504	+11,221	+9%
VL-NV-0100	5,142	3,900	5,177	+1,277	+33%
VL-NV-0030	33,326	35,965	34,552	-1,413	-4%
VL-NV-0080	37,269	22,787	22,223	-564	-2%
Subtotal, Nevada Oak Ridge	75,737	62,652	61,952	-700	-1%
OR-0100	5,096	5,300	5,500	+200	+4%
OR-TD-0100	3,000	3,000	3,000	+0	+0%
OR-0013B	73,725	62,000	72,000	+10,000	+16%
OR-0041	130,710	141,718	161,757	+20,039	+14%
OR-0042	206,352	192,503	173,243	-19,260	-10%
OR-0020	13,400	13,915	14,000	+85	+1%
OR-0011D	55,000	55,628	55,000	-628	-1%
Subtotal, Oak Ridge Other Sites	487,283	474,064	484,500	+10,436	+2%
CBC-0100-FN	1,076	1,062	500	-562	-53%
CBC-0100-RF	582	553	100	-453	-82%
CBC-0100-EM	2,329	2,452	2,423	-29	-1%
Subtotal, Other Sites Paducah	3,987	4,067	3,023	-1,044	-26%
PA-0020	16,206	16,106	16,530	+424	+3%
Portsmouth					
PO-0020	16,690	16,590	17,364	+774	+5%
Program Direction					
HQ-PD-0100	293,338	305,133	315,747	+10,614	+3%
HQ-PDWCF-0100	11,869	11,869	11,146	-723	-6%
Subtotal, Program Direction Richland	305,207	317,002	326,893	+9,891	+3%
RL-0100	8,621	10,013	10,100	+87	+1%
RL-0013C	172,783	183,600	204,200	+20,600	+11%
RL-0030	131,308	152,700	138,300	-14,400	-9%
RL-0011	16,500	0	0	+0	+0%

	FY 2022 Enacted	FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 Enacted	FY 2024 Request vs FY 2023 Enacted (%)
RL-0041	165,066	171,479	131,000	-40,479	-24%
RL-0040	89,413	107,606	49,000	-58,606	-54%
RL-0020	99,300	103,950	100,666	-3,284	-3%
RL-0201	330,335	358,771	341,789	-16,982	-5%
Subtotal, Richland River Protection	1,013,326	1,088,119	975,055	-113,064	-10%
ORP-0014	837,642	851,100	813,625	-37,475	-4%
ORP-0070	50,000	50,000	466,000	+416,000	+832%
ORP-0014A	7,000	0	0	+0	+0%
Subtotal, River Protection	894,642	901,100	1,279,625	+378,525	+42%
Sandia Site Office					
VL-SN-0030	4,576	4,003	2,264	-1,739	-43%
Savannah River					
SR-0100	11,805	12,137	12,389	+252	+2%
SR-0101	130,882	132,294	65,898	-66,396	-50%
SR-0013	45,968	45,509	45,373	-136	+0%
SR-0011C	314,760	340,008	301,608	-38,400	-11%
SR-0014C	889,365	851,660	880,323	+28,663	+3%
SR-SRNL-0100	0	41,000	42,000	+1,000	+2%
SR-0030	55,305	60,455	62,514	+2,059	+3%
SR-0020	164,444	159,849	162,933	+3,084	+2%
SR-0041	25,500	21,463	22,582	+1,119	+5%
SR-0042	17,557	18,429	21,032	+2,603	+14%
Subtotal, Savannah River	1,655,586	1,682,804	1,616,652	-66,152	-4%
Separations Process Research Unit					
VL-SPRU-0040	15,000	15,300	15,300	+0	+0%
West Valley Demonstration Project					
OH-WV-0020	5,298	5,984	5,865	-119	-2%
Subtotal, Operating Line Item Construction	5,711,643	5,867,001	6,013,710	+146,709	+3%
Carlsbad					
CB-0080	90,000	105,273	94,365	-10,908	-10%
Idaho					
ID-0014B	0	15,000	10,000	-5,000	-33%
ID-0030B	5,000	8,000	46,500	+38,500	+481%

	FY 2022 Enacted	FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 Enacted	FY 2024 Request vs FY 2023 Enacted (%)
ID-0012B-D	3,000	8,000	10,159	+2,159	+27%
Subtotal, Idaho Oak Ridge	8,000	31,000	66,659	+35,659	+115%
OR-0041	12,500	45,000	34,500	-10,500	-23%
Richland					
RL-0013C	8,000	3,100	1,000	-2,100	-68%
RL-0201	28,000	19,250	45,811	+26,561	+138%
Subtotal, Richland River Protection	36,000	22,350	46,811	+24,461	+109%
ORP-0014	0	4,408	75,309	+70,901	+1608%
ORP-0060	750,358	824,900	620,000	-204,900	-25%
Subtotal, River Protection Savannah River	750,358	829,308	695,309	-133,999	-16%
SR-0014C	87,500	87,500	87,500	+0	+0%
SR-0042	13,999	37,568	34,733	-2,835	-8%
Subtotal, Savannah River	101,499	125,068	122,233	-2,835	-2%
Subtotal, Line Item Construction	998,357	1,157,999	1,059,877	-98,122	-8%
Subtotal, Environmental Management Defense EM Funded UE D&D Fund Contribution	6,710,000	7,025,000	7,073,587	+48,587	+1%
Operating					
D&D Fund Deposit					
HQ-DD-0100	573,333	586,035	427,000	-159,035	-27%
Non-Defense Environmental Cleanup					
Operating					
Energy Technology Engineering Center					
CBC-ETEC-0040	21,340	26,409	44,135	+17,726	+67%
Idaho					
ID-0012B-N	11,000	13,500	11,500	-2,000	-15%
Mission Support					
HQ-MSF	0	3,000	3,000	+0	+0%
HQ-MSF-0100	2,100	2,100	0	-2,100	-100%
Subtotal, Mission Support	2,100	5,100	3,000	-2,100	-41%
Moab					
CBC-MOAB-0031	67,000	67,000	67,000	+0	+0%
Other Sites					

	FY 2022 Enacted	FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 Enacted	FY 2024 Request vs FY 2023 Enacted (%)
CBC-LBNL-0040	5,000	15,000	0	-15,000	-100%
CBC-0040-EF	15,000	10,554	0	-10,554	-100%
Subtotal, Other Sites	20,000	25,554	0	-25,554	-100%
Paducah					
PA-0011X	59,863	70,921	67,107	-3,814	-5%
Portsmouth					
PO-0011X	61,340	60,017	65,876	+5,859	+10%
Richland					
RL-0042	3,100	3,200	3,200	+0	+0%
West Valley Demonstration Project					
OH-WV-0040	63,219	66,335	58,169	-8,166	-12%
OH-WV-0013	24,901	23,547	31,713	+8,166	+35%
Subtotal, West Valley Demonstration Project	88,120	89,882	89,882	+0	+0%
Subtotal, Operating	333,863	361,583	351,700	-9,883	-3%
Uranium Enrichment Decontamination and Decommissioning Fund					
Operating					
Mission Support					
HQ-UR-0100	16,155	14,800	24,400	+9,600	+65%
Oak Ridge					
OR-0102	25,000	25,000	25,000	+0	+0%
OR-0040	105,000	92,946	91,000	-1,946	-2%
Subtotal, Oak Ridge	130,000	117,946	116,000	-1,946	-2%
Paducah					
PA-0103	2,739	2,782	2,838	+56	+2%
PA-0040	240,000	240,000	217,874	-22,126	-9%
Subtotal, Paducah	242,739	242,782	220,712	-22,070	-9%
Portsmouth					
PO-0104	3,900	23,000	3,435	-19,565	-85%
PO-0040	392,911	424,354	418,258	-6,096	-1%
PO-0103	160	130	125	-5	-4%
Subtotal, Portsmouth	396,971	447,484	421,818	-25,666	-6%
Subtotal, Operating	785,865	823,012	782,930	-40,082	-5%
Line Item Construction					
Portsmouth					
PO-0040	74,135	56,040	74,552	+18,512	+33%

	FY 2022 Enacted	FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 Enacted	FY 2024 Request vs FY 2023 Enacted (%)
Subtotal, Environmental Management	860,000	879,052	857,482	-21,570	-2%
Subtotal, Environmental Cleanup	8,477,196	8,851,670	8,709,769	-141,901	-2%
Mercury Storage Receipts	0	-3,000	-3,000	+0	+0%
D&D Fund Offset	-573,333	-586,035	-427,000	+159,035	-27%
Total, Environmental Cleanup	7,903,863	8,262,635	8,279,769	+17,134	+0%

Summary

	FY 2022 Enacted	FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 Enacted	FY 2024 Request vs FY 2023 Enacted (%)
Defense Environmental Cleanup					
Operating	5,711,643	5,867,001	6,013,710	+146,709	+3%
Line Item Construction	998,357	1,157,999	1,059,877	-98,122	-8%
Subtotal, Defense Environmental Cleanup	6,710,000	7,025,000	7,073,587	+48,587	+1%
Defense EM Funded UE D&D Fund Contribution					
Operating	573,333	586,035	427,000	-159,035	-27%
Line Item Construction	0	0	0	+0	+0%
Subtotal, Defense EM Funded UE D&D Fund Contribution	573,333	586,035	427,000	-159,035	-27%
Non-Defense Environmental Cleanup					
Operating	333,863	361,583	351,700	-9,883	-3%
Line Item Construction	0	0	0	+0	+0%
Subtotal, Non-Defense Environmental Cleanup	333,863	361,583	351,700	-9,883	-3%
Uranium Enrichment Decontamination and Decommissioning Fund					
Operating	785,865	823,012	782,930	-40,082	-5%
Line Item Construction	74,135	56,040	74,552	+18,512	+33%
Subtotal, Uranium Enrichment Decontamination and Decommissioning Fund	860,000	879,052	857,482	-21,570	-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%

	FY 2022 Enacted	FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 Enacted	FY 2024 Request vs FY 2023 Enacted (%)
Line Item Construction	0	0	0	+0	+0%
Subtotal, Environmental Cleanup	8,477,196	8,851,670	8,709,769	-141,901	-2%
Offsets	-573,333	-589,035	-430,000	+159,035	-27%
Total, Environmental Cleanup	7,903,863	8,262,635	8,279,769	+17,134	+0%
Total Operating	7,404,704	7,637,631	7,575,340	-62,291	-1%
Total Line Item Construction	1,072,492	1,214,039	1,134,429	-79,610	-7%
Subtotal, Environmental Management	8,477,196	8,851,670	8,709,769	-141,901	-2%
Offsets	-573,333	-589,035	-430,000	+159,035	-27%
Total, Environmental Management	7,903,863	8,262,635	8,279,769	+17,134	+0%

Environmental Management Federal Staffing

	FY 2022 Enacted	FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 Enacted	FY 2024 Request vs FY 2023 Enacted (%)
Carlsbad	60	62	65	+3	+5%
Idaho	48	48	51	+3	+6%
Oak Ridge	69	81	81	+0	+0%
Portsmouth/Paducah Project Office	53	53	58	+5	+9%
Richland	233	239	249	+10	+4%
River Protection	119	130	134	+4	+3%
Savannah River	238	259	259	+0	+0%
Small Sites	22	24	24	+0	+0%
Nevada Site Office	13	15	15	+0	+0%
Los Alamos Site Office	35	39	39	+0	+0%
Subtotal, Field, Full-Time Equivalents	890	950	975	+25	+3%
Headquarters Operations	256	273	287	+14	+5%
Consolidated Business Center	144	152	163	+11	+7%
Total, Field, Full-Time Equivalents	1,290	1,375	1,425	+50	+4%

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	2035
Moab	2029-2033
Waste Isolation Pilot Plant	Supporting Mission ^a
Los Alamos National Laboratory	2043
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

^a As a facility that supports the completion of EM work at other sites, the Waste Isolation Pilot Plant end date will be determined by the completion of cleanup at other sites, as well as the achievement of its capacity, as defined in the *WIPP Land Withdrawal Act of 1992*.

**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	4,356	-
Energy Technology Engineering Center	716	-
Fernald	3,220	-
Hanford Site (Richland)	107,756	- 152,245
Office of River Protection	221,464	- 360,587
Headquarters (Mission Support)	9,476	- 9,703
Idaho National Laboratory	20,233	- 23,616
Inhalation Toxicology Laboratory	13	-
Kansas City Plant	30	-
Laboratory for Energy-Related Health Research	41	-
Lawrence Berkeley National Laboratory	133	-
Lawrence Livermore National Laboratory	596	- 608
Los Alamos National Laboratory	8,535	- 10,304
Miamisburg	671	-
Moab	1,114	- 1,122
Nevada National Security Site	2,795	- 2,941
Oak Ridge	24,678	- 24,791
Other	1,192	-
Paducah Gaseous Diffusion Plant	39,838	- 46,775
Pantex Plant	206	-
Portsmouth Gaseous Diffusion Plant	17,875	- 19,859
Program Direction	26,998	- 27,779
Rocky Flats Environmental Technology Site	6,573	-
Sandia National Laboratory	292	- 294
Savannah River Site	98,439	- 124,852
Separation Process Research Unit	343	-
Stanford Linear Accelerator Center	70	-
Technology Development and Deployment	3,481	- 3,544
Waste Isolation Pilot Plant	17,060	- 18,713
West Valley Demonstration Project	3,886	- 4,290
	-	-
Total EM Program	619,587	- 847,032

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

PBS Name	Prior Cost	Lifecycle Cost Remaining (FY 2023 to FY 2091)		Lifecycle Total	
	(97-2022)	Low Range	High Range	Low Range	High Range
ACTIVE SITES					
Carlsbad					
CB-0020:					
	98	213	246	311	344
CB-0083:					
	69	398	459	467	528
CB-0100:					
	11	0	0	11	11
CB-0900:					
	7	0	0	7	7
CB-0080:					
	4,628	8,814	10,171	13,442	14,799
CB-0081:					
	514	560	646	1,074	1,160
CB-0082:					
	97	0	0	97	97
CB-0090:					
	611	751	866	1,362	1,478
CB-0101:					
	289	0	0	289	289
TOTAL	6,325	10,735	12,388	17,060	18,713
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:					
	698	2,475	3,386	3,173	4,084
ID-0012B-N:					
	132	163	212	295	344
ID-0012C:					
	0	0	0	0	0
ID-0012C-N:					
	20	0	0	20	20
ID-0013B:					
	4,844	884	1,083	5,728	5,928
ID-0013B.NEW:					
	115	0	0	115	115
ID-0014B:					
	3,463	2,911	4,991	6,374	8,454
ID-0014B-T:					

PBS Name	Prior Cost	Lifecycle Cost Remaining (FY 2023 to FY 2091)		Lifecycle Total	
	(97-2022)	Low Range	High Range	Low Range	High Range
	71	0	0	71	71
ID-0014C:					
	0	0	0	0	0
ID-0030B:					
	1,793	592	679	2,386	2,473
ID-0030C:					
	0	0	0	0	0
ID-0040-EF:					
	3	0	0	3	3
ID-0040B:					
	711	503	503	1,214	1,214
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:					
	106	58	115	164	221
ID-0900:					
	310	0	0	310	310
TOTAL	12,645	7,587	10,970	20,233	23,616
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:					
	540	366	371	907	911
OR-0011Y:					
	52	0	0	52	52
OR-0011Z:					
	164	0	0	164	164
OR-0013A:					
	465	0	0	465	465
OR-0013B:					
	2,058	865	887	2,922	2,945
OR-0020:					
	375	353	356	727	730
OR-0030:					
	351	8	9	359	360
OR-0031:					
	60	0	0	60	60
OR-0040:					

PBS Name	Prior Cost	Lifecycle Cost Remaining (FY 2023 to FY 2091)		Lifecycle Total	
	(97-2022)	Low Range	High Range	Low Range	High Range
	4,483	231	257	4,714	4,739
OR-0041:					
	1,145	2,760	2,791	3,905	3,936
OR-0041-IFDP:					
	209	2,211	2,211	2,419	2,419
OR-0041.NEW:					
	157	0	0	157	157
OR-0042:					
	1,333	1,405	1,432	2,738	2,765
OR-0042-IFDP:					
	213	2,423	2,423	2,636	2,636
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:					
	165	181	181	346	346
OR-0101:					
	105	0	0	105	105
OR-0102:					
	366	166	166	531	531
OR-0103:					
	44	0	0	44	44
OR-0104:					
	21	7	7	28	28
OR-0900-D:					
	17	0	0	17	17
OR-0900-N:					
	619	0	0	619	619
OR-TD-0100:					
	24	24	24	48	48
OR-TDD-0100:					
	0	0	0	0	0
TOTAL	13,678	11,000	11,113	24,678	24,791
Paducah					
PA-0011:					
	60	5	5	65	65
PA-0011X:					
	1,061	7,205	8,109	8,266	9,170
PA-0013:					
	285	0	0	285	285
PA-0020:					
	193	1,110	1,152	1,304	1,345
PA-0040:					

PBS Name	Prior Cost	Lifecycle Cost Remaining (FY 2023 to FY 2091)		Lifecycle Total	
	(97-2022)	Low Range	High Range	Low Range	High Range
	3,189	26,450	32,434	29,639	35,623
PA-0100:					
	11	0	0	11	11
PA-0101:					
	-2	0	0	-2	-2
PA-0102:					
	42	0	0	42	42
PA-0103:					
	49	180	186	229	235
TOTAL	4,888	34,950	41,887	39,838	46,775
Portsmouth					
PO-0011:					
	107	0	0	107	107
PO-0011X:					
	1,106	2,897	2,981	4,003	4,087
PO-0013:					
	445	0	0	445	445
PO-0020:					
	293	347	502	640	795
PO-0040:					
	4,520	7,646	9,379	12,166	13,899
PO-0041:					
	69	0	0	69	69
PO-0101:					
	366	0	0	366	366
PO-0103:					
	15	6	8	21	22
PO-0104:					
	20	39	48	59	68
TOTAL	6,941	10,934	12,918	17,875	19,859
Richland					
HQ-SNF-0012X-RL:					
	3	0	0	3	3
RL-0011:					
	3,034	0	0	3,034	3,034
RL-0012:					
	3,088	0	0	3,088	3,088
RL-0013B:					
	1	0	0	1	1
RL-0013C:					
	4,106	18,342	28,369	22,448	32,475
RL-0020:					
	1,480	12,089	23,345	13,570	24,826
RL-0030:					
	3,031	8,455	11,690	11,486	14,721
RL-0040:					
	2,477	18,281	22,824	20,758	25,300

PBS Name	Prior Cost	Lifecycle Cost Remaining (FY 2023 to FY 2091)		Lifecycle Total	
	(97-2022)	Low Range	High Range	Low Range	High Range
RL-0041:					
	5,323	1,607	1,703	6,930	7,026
RL-0042:					
	339	898	1,042	1,237	1,381
RL-0043:					
	7	0	0	7	7
RL-0044:					
	2	0	0	2	2
RL-0080:					
	71	0	0	71	71
RL-0100:					
	401	838	1,285	1,239	1,686
RL-0201:					
	1,622	22,126	36,869	23,748	38,491
RL-0900:					
	133	0	0	133	133
TOTAL	25,118	82,638	127,127	107,756	152,245
River Protection					
HQ-HLW-0014X-RV:					
	0	0	0	0	0
ORP-0014:					
	13,037	177,879	315,638	190,916	328,675
ORP-0014A:					
	0	0	0	0	0
ORP-0014-T:					
	0	0	0	0	0
ORP-0060:					
	14,100	15,958	17,322	30,058	31,421
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	27,627	193,837	332,960	221,464	360,587
Savannah River					
SR-0100:					
	311	1,025	1,373	1,336	1,684
SR-0101:					
	281	215	238	496	519
SR-0900:					
	198	0	0	198	198
HQ-HLW-0014X-SR:					

PBS Name	Prior Cost	Lifecycle Cost Remaining (FY 2023 to FY 2091)		Lifecycle Total	
	(97-2022)	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:					
	5,187	7,117	10,501	12,304	15,687
SR-0012:					
	680	0	0	680	680
SR-0013:					
	2,296	9,346	11,904	11,641	14,199
SR-0014B:					
	0	0	0	0	0
SR-0014C:					
	16,832	19,071	30,044	35,903	46,876
SR-0014C-T:					
	138	0	0	138	138
SR-0020:					
	3,141	9,078	12,290	12,219	15,431
SR-0030:					
	2,570	13,066	17,842	15,636	20,412
SR-0040:					
	494	0	0	494	494
SR-0040B:					
	1	0	0	1	1
SR-0041:					
	97	156	178	254	275
SR-0042:					
	111	3,155	4,273	3,265	4,384
TOTAL	36,210	62,229	88,642	98,439	124,852
Lawrence Livermore					
CBC-LLNL-0040:					
	32	0	0	32	32
HQ-SW-0013Y:					
	158	0	0	158	158
TOTAL	190	0	0	190	190
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 2023 to FY 2091)		Lifecycle Total	
	(97-2022)	Low Range	High Range	Low Range	High Range
	136	0	0	136	136
VL-LLNL-0031:					
	150	48	59	198	210
TOTAL	358	48	59	406	418
Los Alamos					
VL-FAO-0101:					
	123	124	124	247	247
VL-LANL-0013:					
	1,655	1,128	1,619	2,782	3,274
VL-LANL-0020:					
	0	70	70	70	70
VL-LANL-0030:					
	2,431	2,930	4,207	5,361	6,638
VL-LANL-0040-D:					
	53	0	0	53	53
VL-LANL-0040-N:					
	22	0	0	22	22
TOTAL	4,283	4,252	6,021	8,535	10,304
Nevada					
NV-0030:					
	88	0	0	88	88
VL-NV-0013:					
	108	0	0	108	108
VL-NV-0030:					
	1,300	421	512	1,720	1,812
VL-NV-0080:					
	313	405	456	718	769
VL-NV-0100:					
	96	64	68	160	164
TOTAL	1,905	890	1,036	2,795	2,941
Sandia					
VL-SN-0030:					
	274	18	20	292	294
TOTAL	274	18	20	292	294
Separations Process Research Unit					
VL-SPRU-0040:					
	254	89	89	343	343
TOTAL	254	89	89	343	343
West Valley					
OH-WV-0012:					
	32	0	0	32	32
OH-WV-0013:					
	441	-68	-15	373	426
OH-WV-0014:					

PBS Name	Prior Cost	Lifecycle Cost Remaining (FY 2023 to FY 2091)		Lifecycle Total	
	(97-2022)	Low Range	High Range	Low Range	High Range
	0	0	0	0	0
OH-WV-0020:					
	54	196	222	250	276
OH-WV-0040:					
	1,295	1,936	2,261	3,231	3,556
OH-WV-0100:					
	0	0	0	0	0
TOTAL	1,822	2,064	2,468	3,886	4,290
Energy Technology Engineering Center					
CBC-ETEC-0040:					
	399	315	315	714	714
VL-ETEC-0040:					
	2	0	0	2	2
TOTAL	400	315	315	716	716
Moab					
CBC-MOAB-0031:					
	753	361	369	1,114	1,122
TOTAL	753	361	369	1,114	1,122
Brookhaven					
BRNL-0030:					
	262	0	0	262	262
BRNL-0040:					
	137	0	0	137	137
BRNL-0041:					
	82	2	2	84	84
BRNL-0041.NEW:					
	3	0	0	3	3
BRNL-0100:					
	3	0	0	3	3
TOTAL	488	2	2	490	490
Other Sites					
CBC-0040-EF:					
	8	0	0	8	8
CBC-0100-EM:					
	6	33	33	40	40
CBC-0100-FN:					
	69	9	9	79	79
CBC-0100-MD:					
	2	0	0	2	2
CBC-0100-RF:					
	43	1	1	44	44
CBC-ND-0100:					
	11	0	0	11	11
CBC-UM-0100:					
	0	0	0	0	0

PBS Name	Prior Cost	Lifecycle Cost Remaining (FY 2023 to FY 2091)		Lifecycle Total	
	(97-2022)	Low Range	High Range	Low Range	High Range
OH-FN-0100:					
	0	0	0	0	0
TOTAL	140	44	44	183	183
Mission Support					
HQ-CDP-0100-N:					
	0	0	0	0	0
HQ-MS-0100:					
	899	4,349	4,523	5,248	5,422
HQ-MSF:					
	2	0	0	2	2
HQ-OPS-0900:					
	0	0	0	0	0
HQ-SS-0020:					
	0	0	0	0	0
HQ-UR-0100:					
	506	65	65	571	571
HQ-TD-0100:					
	1,913	1,344	1,397	3,257	3,310
EM-HBCU-0100:					
	5	392	392	397	397
TOTAL	3,326	6,150	6,378	9,476	9,703
Program Direction					
HQ-PD-0100:					
	7,476	19,523	20,304	26,998	27,779
TOTAL	7,476	19,523	20,304	26,998	27,779
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	1,013	1,013	4,356	4,356
TOTAL	3,343	1,013	1,013	4,356	4,356
COMPLETED SITES					
Argonne					
CH-ANLW-0030:					
	8	0	0	8	8
CH-ANLE-0030:					
	30	0	0	30	30
CH-ANLE-0040:					

PBS Name	Prior Cost	Lifecycle Cost Remaining (FY 2023 to FY 2091)		Lifecycle Total	
	(97-2022)	Low Range	High Range	Low Range	High Range
	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
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					

PBS Name	Prior Cost	Lifecycle Cost Remaining (FY 2023 to FY 2091)		Lifecycle Total	
	(97-2022)	Low Range	High Range	Low Range	High Range
VL-GA-0012:					
	15	0	0	15	15
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

PBS Name	Prior Cost	Lifecycle Cost Remaining (FY 2023 to FY 2091)		Lifecycle Total	
	(97-2022)	Low Range	High Range	Low Range	High Range
VL-FAO-0900:					
	233	0	0	233	233
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

PBS Name	Prior Cost	Lifecycle Cost Remaining (FY 2023 to FY 2091)		Lifecycle Total	
	(97-2022)	Low Range	High Range	Low Range	High Range
SEFOR					
CBC-SEFOR-0040N:					
	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	170,905	448,683	676,127	619,587	847,032

Carlsbad

Overview

The Carlsbad Field Office supports ongoing national security missions and the 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, repack, 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 \$20,000,000 in FY 2024.

Current Status

As of FY 2023, the Waste Isolation Pilot Plant's goal is to receive 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) and Hoisting Capability Project (21-D-401) will provide the increased airflow 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 and maintenance, mining, and waste emplacement capability. Ongoing actions in FY 2024 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 and commissioning 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 continue towards Critical Decision 1, Alternative Selection and Cost Range.

Highlights of the FY 2024 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 2024, the Waste Isolation Pilot Plant will work with the New Mexico Environment Department and the Environmental Protection Agency to obtain regulatory approval for mining and use of replacement disposal panels 11 and 12 at the Waste Isolation Pilot Plant facility. The Carlsbad Field Office and its contractors will also work on preparing and submittal of the Compliance Recertification Application 2024 to the Environmental Protection Agency. The Waste Isolation Pilot Plant will also continue to work with the New Mexico Environment Department on the 10-Year Waste Isolation Pilot Plant Hazardous Waste Facility Permit Renewal Application and Draft Permit, 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 2024 the Carlsbad Field Office plans to perform a National Environmental Policy Act evaluation on a proposed action to excavate and use additional disposal panels to be able to dispose of transuranic waste up to the Waste Isolation Pilot Plant Land Withdrawal Act (Public Law 102-579 and as amended by P.L., 104-201) total transuranic waste volume capacity limit of 6.2 million cubic feet (175,600 cubic meters). In FY 2024 the Carlsbad Field Office will continue procurement of 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 2024. 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 the Waste Isolation Pilot Plant, 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 2024, the transportation capability will 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 receive the initial order of new Nuclear Regulatory Commission-certified Type B highway shipping containers (HalfPACTs) for transporting the shielded container assemblies.

The FY 2024 request includes \$50,000,000 in Total Project Cost line-item funding for construction for the new Utility Shaft, formerly the Exhaust Shaft, (15-D-412) and \$44,365,000 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 2023 - 2024 Key Milestones/Outlook

- (FY 2023-FY 2024) Repair/replacement of critical infrastructure.
- (FY 2023-FY 2024) Commencement of commissioning/start-up activities on the Safety Significant Confinement Ventilation System (15-D-411).
- (FY 2023-FY 2024) Shaft sinking and excavation of drifts for 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 Permit (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 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 a Management and Operating Contract. A new Management and Operating contract was awarded in July 2022 and began executing in February of FY2023. The contract is a cost-plus award fee basis (with mostly performance-based incentives) with an original base performance period of February 4, 2023, to November 7, 2026, with additional 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 supports 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 is an indefinite delivery/indefinite quantity contract and has a base year period (a two-month transition and ten-month period) and four one-year option periods, for a total of five years. The contract will run through May 2027.

Strategic Management

The Department will work to reduce contamination and the waste 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 national security mission programs.

Carlsbad

Funding (\$K)

	FY 2022 Enacted	FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 Enacted	FY 2024 Request vs FY 2023 Enacted (%)
Defense Environmental Cleanup					
Waste Isolation Pilot Plant					
Waste Isolation Pilot Plant					
CB-0080 / Operate Waste Disposal Facility-WIPP					
Operating	273,266	260,691	285,000	+24,309	+9%
Construction					
15-D-411: Safety Significant Confinement Ventilation System, WIPP	65,000	59,073	44,365	-14,708	-25%
15-D-412: Utility Shaft	25,000	46,200	50,000	+3,800	+8%
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
	363,266	365,964	379,365	+13,401	+4%
CB-0081 / Central Characterization Project	23,729	26,245	26,770	+525	+2%
CB-0083 / Critical Infrastructure Repair/Replacement	14,213	21,250	20,000	-1,250	-6%
CB-0090 / Transportation-WIPP	42,216	45,238	38,191	-7,047	-16%
Subtotal, Waste Isolation Pilot Plant	<hr/> 443,424	<hr/> 458,697	<hr/> 464,326	<hr/> +5,629	<hr/> +1%
Safeguards and Security					
CB-0020 / Safeguards and Security	7,806	7,826	10,287	+2,461	+31%
Total, Defense Environmental Cleanup	<hr/> 451,230	<hr/> 466,523	<hr/> 474,613	<hr/> +8,090	<hr/> +2%

Carlsbad
Explanation of Major Changes (\$K)

FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 Enacted
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Defense Environmental Cleanup

Waste Isolation Pilot Plant

CB-0080 / Operate Waste Disposal Facility-WIPP

- Increase in Waste Isolation Pilot Plant operations to support continued increased shipments requiring additional shifts of personnel. (+24.3M)
- Reduction in Safety Significant Confinement Ventilation System funding as project moves towards completion. (-14.7M)
- Increase in Utility Shaft project continues construction activities. (+\$3.8M)

	365,964	379,365	+13,401
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CB-0081 / Central Characterization Project

- No significant change.

	26,245	26,770	+525
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CB-0083 / Critical Infrastructure Repair/Replacement

- Decrease reflects continued progress on outstanding infrastructure needs.

	21,250	20,000	-1,250
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CB-0090 / Transportation-WIPP

- Decrease reflects the end of the HalfPact purchase for transportation activities.

	45,238	38,191	-7,047
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Safeguards and Security

CB-0020 / Safeguards and Security

- Increase reflects a focus on cyber and physical security requirements necessary with the implementations of revised Safeguards and Security DOE Orders, EM Cyber Security Program Plan, the National Institute of Standards and Technology Special Publication 800-53-R5, and Executive Order 14028 requirements; including Zero Trust, network infrastructure upgrades, and endpoint detection and response implementation.

	7,826	10,287	+2,461
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Total, Carlsbad	466,523	474,613	+8,090
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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 2024 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; 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 2024, the Waste Isolation Pilot Plant will also be working towards approval through the regulatory processes for mining of replacement panels and evaluation for additional disposal panels, 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 2023 Enacted	FY 2024 Request	Explanation of Changes FY 2024 Request vs FY 2023 Enacted
\$365,964,000	\$379,365,000	+\$13,401,000
<ul style="list-style-type: none"> 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) 	<ul style="list-style-type: none"> 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) 	<ul style="list-style-type: none"> Increase in Waste Isolation Pilot Plant operations to support continued increased shipments requiring additional shifts of personnel. (+24.3M) Reduction in Safety Significant Confinement Ventilation System funding as project moves towards completion. (-14.7M) Increase in Utility Shaft project continues construction activities. (+\$3.8M)

(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 transuranic waste to the Waste Isolation Pilot Plant.

(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 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 2023 Enacted	FY 2024 Request	Explanation of Changes FY 2024 Request vs FY 2023 Enacted
\$26,245,000	\$26,770,000	+\$525,000
<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 disposition and transportation at the Savannah River Site, Oak Ridge National Laboratory, Lawrence 	<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 disposition and transportation at the Savannah River Site, Oak Ridge National Laboratory, Lawrence 	<ul style="list-style-type: none"> • No significant change.

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).

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 2024 funding is requested for the projects in the table below.

Project Title	Total Project	Current Status	Mission Impact	FY2024 Request	Notes
CH, RH, TMF Confinement Ventilation System (includes rotating 807 and increased cooling cap.)	14,800	System is degraded but operable with compensatory measures	Potential for offsite release.	10,800	
Emergency Preparedness Facility	18,200	New design/build. SOW complete, ROM estimate complete.	Emergency Response Personnel Co-located for Coordinated Emergency Response	3,490	Early stages of development; figures are ROM estimates and will be refined over time. Design efforts will take place in FY2023 and possibly FY2024
Upgrade Bulkhead Control System	800		Improved control of ventilation and movement in the underground	800	
Power to Fab Building from LIS	1,060		Failure of system to operate.	1,060	
700B Fan Refurb	250	Existing fan is over 30 years old	Failure of system to operate.	250	
FY2024 Total				16,400	

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

Activities and Explanation of Changes

FY 2023 Enacted	FY 2024 Request	Explanation of Changes FY 2024 Request vs FY 2023 Enacted
\$21,250,000	\$20,000,000	-\$1,250,000
<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"> Repair, replace, and modernize the Waste Isolation Pilot Plant’s degraded facility structures, systems, and components. 	<ul style="list-style-type: none"> Decrease reflects continued progress on outstanding infrastructure needs.

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 2024 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 2023 Enacted	FY 2024 Request	Explanation of Changes FY 2024 Request vs FY 2023 Enacted
\$45,238,000	\$38,191,000	-\$7,047,000
<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"> • 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. 	<ul style="list-style-type: none"> • Decrease reflects the end of the HalfPact purchase for transportation activities.

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 2023 Enacted	FY 2024 Request	Explanation of Changes FY 2024 Request vs FY 2023 Enacted
\$7,826,000	\$10,287,000	+\$2,461,000
<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. • Implement cyber security requirements in accordance with the National Institute of Standards and Technology and Executive Order 14028. • Support implementation of Zero Trust Initiative. • Provide network infrastructure upgrades and endpoint detection and response. 	<ul style="list-style-type: none"> • Increase reflects a focus on cyber and physical security requirements necessary with the implementations of revised Safeguards and Security DOE Orders, EM Cyber Security Program Plan, the National Institute of Standards and Technology Special Publication 800-53-R5, and Executive Order 14028 requirements; including Zero Trust, network infrastructure upgrades, and endpoint detection and response implementation.

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

Total	Prior Years	FY 2022 Enacted	FY 2022 Actuals	FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs. FY 2023 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		
Minor Construction (<\$25M)	51,810	0	20,000	0	20,700	16,400	-4,300
Total, Capital Operating Expenses	51,810	0	20,000	0	20,700	16,400	-4,300

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

<u>Carlsbad (Direct Funded)</u>							
Emergency Preparedness Facility	18,200	0	0	0	0	3,490	+3,490
Upgrade Bulkhead Control System	800	0	0	0	0	800	+800
Power to Fab Building from LIS	1,060	0	0	0	0	1,060	+1,060
700B Fan Refurb	250	0	0	0	0	250	+250
Hoist Controller Upgrade (salt and waste) Contact Handled (CH) and Remote Handled (RH) Confinement	2,000	0	0	0	2,000	0	-2,000
Ventilation System HVAC Replacement	14,800	0	0	0	4,000	10,800	+6,800
Electrical Substation #2 Replacement Fabrication	1,700	0	0	0	1,700	0	-1,700
Electrical Substation #4 Replacement Fabrication	1,700	0	0	0	1,700	0	-1,700
Electrical Substation #6 Replacement Fabrication	1,700	0	0	0	1,700	0	-1,700
Motor Control Center Replacements	4,600	0	0	0	4,600	0	-4,600
Design and Install Automatic Center of Gravity Lift Fixture	5,000	0	0	0	5,000	0	-5,000
Total, Carlsbad	51,810	0	20,000	0	20,700	16,400	-4,300

Total, Capital Summary	51,810	0	20,000	0	20,700	16,400	-4,300
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**Carlsbad
Construction Projects Summary (\$K)**

	Total	Prior Years	FY 2022 Enacted	FY 2022 Actuals	FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs. FY 2023 Enacted
15-D-411, Safety Significant Confinement Ventilation System (WIPP) (CB-0080)							
Total Estimate Cost (TEC)	TBD	301,016	58,000	68,699	50,300	31,365	-18,935
Other Project Costs (OPC)	TBD	14,200	7,000	2,773	8,773	13,000	+4,227
Total Project Cost (TPC) 15-D-411	TBD	315,216	65,000	71,472	59,073	44,365	-14,708
15-D-412, Utility Shaft, formerly Exhaust Shaft (WIPP) (CB-0080)							
Total Estimate Cost (TEC)	TBD	161,600	23,173	55,421	46,200	45,000	-1,200
Other Project Costs (OPC)	TBD	4,000	1,827	648	0	5,000	+5,000
Total Project Cost (TPC) 15-D-412	TBD^a	165,600	25,000	56,069	46,200	50,000	+3,800
21-D-401, Hoisting Capability Project (CB-0080)							
Total Estimate Cost (TEC)	TBD	10,000	0	0	0	0	0
Other Project Costs (OPC)	0	0	0	0	0	0	0
Total Project Cost (TPC) 21-D-401	TBD	10,000	0	0	0	0	0

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 the FY 2024 Request for the Safety Significant Confinement Ventilation System is \$44,365,000: \$31,365,000 for construction total estimated cost and \$13,000,000 for other project costs. The FY 2024 funds will be utilized to complete construction, commissioning, start-up, and readiness reviews.

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) has 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. A rebaseline BCP was approved on February 23, 2022, with a Total Project Cost of \$494,000,000 (95% Confidence Level) and a Critical Decision 4 on June 30, 2026.

Significant Changes

This Construction Project Data Sheet is an update of the FY 2023 Construction Project Data Sheet and does not include a new start for the budget year.

In FY2019, after the contractor for the Safety Significant Confinement Ventilation System project indicated a breach in the Total Project Cost, The Department (Carlsbad Field Office) commissioned a constructability review and the required annual Project Peer Review. Both confirmed that a breach in the Total Project Cost and a schedule slip were likely. Based on this information, the contractor was requested to submit a Baseline Change Proposal, which has undergone the DOE Order 413.3B required External Independent Review and Independent Cost Review.

The rebaseline eliminated the decontamination and decommissioning (removal of existing ventilation equipment, specifically termed the Interim Ventilation System (IVS)) from the scope of this project. The removal of decontamination and decommissioning 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 IVS control system and must remain operable. Also formalized in the rebaseline, was a change approved by the project in August 2019, to reduce the Salt Reduction Units from the original plan of seven to six units. This change did not affect the Key Performance Parameters (KPP) of the facility.

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
FY 2024	10/22/2014	12/10/2015	12/23/2015	10/6/2017	5/10/2018	5/10/2018	5/10/2018	N/A	6/30/2026*

* The FY2024 CD-4 date is the result of the BCP approved on February 23, 2022.

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-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
FY 2024	16,860	429,729	446,589	47,411	N/A	47,411	494,000

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 wastecontainers, 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 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.

Performance Measure	Threshold
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	121,478
FY 2023	50,300	50,300	68,699
FY 2024	31,365	31,365	28,479
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	121,478
FY 2023	50,300	50,300	68,699

FY 2024	31,365	31,365	28,479
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	8,773	8,773	14,253
FY 2024	13,000	13,000	11,699
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
FY 2023	0	0	0
FY 2024	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	8,773	8,773	14,253
FY 2024	13,000	13,000	11,699
Outyears	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	128,116
FY 2023	59,073	59,073	82,952
FY 2024	44,365	44,365	40,177
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.

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	375,568	180,240	180,240
Contingency	28,666	38,722	38,722
Total, Construction	429,728	244,456	244,456
Total, TEC	446,589	261,316	261,316
Contingency, TEC	28,666	38,722	38,722
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning	628	628	628
Conceptual Design	800	800	800
Reviews	2,600	2,600	2,600
Contingency	5,798	2,446	2,446
Other OPC	37,585	15,590	15,590
Total, OPC except D&D	47,411	22,064	22,064

OPC, D&D			
D&D	0	4,405	4,405
Contingency	0	0	0
Total, OPC D&D	0	4,405	4,405
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Total, OPC	47,411	26,469	26,469
Contingency	5,798	2,446	2,446
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Total, TPC	494,000	287,785	287,785
Total, Contingency	34,463	41,168	41,168

Schedule of Appropriation Requests

(Dollars in Thousands)

Request		Prior Years	FY 2022	FY 2023	FY 2024	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	167,962				TBD	TBD
	OPC	15,500				TBD	TBD
	TPC	183,462				TBD	TBD
FY 2020	TEC	261,316				0	261,316
	OPC	18,700				0	26,469
	TPC	280,016				0	287,785
FY 2021	TEC	261,316				0	261,316
	OPC	26,469				0	26,469
	TPC	287,785				0	287,785
FY 2022	TEC	288,547	50,000			TBD	TBD
	OPC	26,469	5,000			TBD	TBD
	TPC	315,016	55,000			TBD	TBD
FY 2023	TEC	301,016	58,000	50,300		TBD	TBD
	OPC	14,200	7,000	8,700		TBD	TBD
	TPC	315,216	65,000	59,000		TBD	TBD
FY 2024	TEC	301,016	58,000	50,300	31,365	TBD	TBD
	OPC	14,200	7,000	8,773	13,000	TBD	TBD
	TPC	315,216	65,000	59,073	44,365	TBD	TBD

4. Related Operations and Maintenance Funding Requirements

Start of Operation or Beneficial Occupancy (fiscal quarter or date)	Q3 FY 2026
Expected Useful Life (number of years)	29
Expected Future Start of decontamination and decommissioning of this capital asset (fiscal quarter)	Q3 FY 2055

Related Funding requirements
(Dollars in Thousands)

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

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 previous Waste Isolation Pilot Plant Management and Operating contract ended in January 2023. The new Management and Operating contractor (now on-boarded) 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 on a regular basis.

**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 2024 Request for the Utility Shaft (formerly Exhaust Shaft) is \$50,000,000: \$45,000,000 for construction total estimated costs and \$5,000,000 for other project costs for construction Total Estimated Cost. FY 2024 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 projected 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 Baseline Change Proposal is under review as a result of the COVID-19 related delays associated with the denial of the New Mexico Environment Department Temporary Authorization permit (detailed below).

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 2023 Construction Project Data Sheet and does not include a new start for the budget year.

As a result of the New Mexico Environment 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 primarily on impacts from the Temporary Authorization denial due to COVID-19, is in the early stages of 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

(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 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
FY 2024	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 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	TBD	TBD	TBD	TBD	N/A	TBD	TBD
FY 2024	TBD	TBD	TBD	TBD	N/A	TBD	TBD ^a

^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

Budget Authority (Appropriations)	Obligations	Costs
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Construction

FY 2016	4,466	4,466	0
FY 2017	30,000	30,000	0
FY 2018	19,600	19,600	2,469
FY 2019	1,000	1,000	16,057
FY 2020	44,500	44,500	47,320
FY 2021	55,000	55,000	42,026
FY 2022	23,173	23,173	34,220
FY 2023	46,200	46,200	57,897
FY 2024	45,000	45,000	47,647
Outyears ^b	TBD	TBD	TBD
Total, Construction ^b	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	3,448
FY 2019	1,000	1,000	16,058
FY 2020	44,500	44,500	47,320
FY 2021	55,000	55,000	42,026
FY 2022	23,173	23,173	34,220
FY 2023	46,200	46,200	57,897
FY 2024	45,000	45,000	44,964
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	77
FY 2019	600	600	197
FY 2020	0	0	183
FY 2021	0	0	1,209
FY 2022	1,827	1,827	276
FY 2023	0	0	1,222
FY 2024	5,000	5,000	1,344
Outyears ^b	TBD	TBD	TBD
Total, OPC ^b	TBD	TBD	TBD

	Budget Authority (Appropriations)	Obligations	Costs
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	5,913
FY 2018	21,500	21,500	3,525
FY 2019	1,600	1,600	16,254
FY 2020	44,500	44,500	47,503
FY 2021	55,000	55,000	43,235
FY 2022	25,000	25,000	29,311
FY 2023	46,200	46,200	59,119
FY 2024	50,000	50,000	48,990
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	124,094	124,094
Contingency	TBD	21,083	21,083
Total, Construction	TBD	182,086	182,086
Total, TEC	TBD	189,120	189,120
Contingency, TEC	TBD	21,083	21,083
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	1,665	1,665
Other OPC	TBD	4,712	4,712
Total, OPC except D&D	TBD	7,865	7,865

	Current Total Estimate ^a	Previous Total Estimate	Original Validated Baseline
Total, OPC	TBD	7,865	7,865
Contingency, OPC	TBD	1,665	1,665
<hr/>			
Total, TPC	TBD	196,985	196,985
Total, Contingency	TBD	22,748	22,748

^a Current Total Estimate is taken from the Baseline Change Proposal under review and is anticipated to change.

Schedule of Appropriation Requests

(Dollars in Thousands)

Request		Prior Years	FY 2022	FY 2023	FY 2024	Outyears	Total
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
FY 2019	TEC	62,100					TBD
	OPC	6,038					TBD
	TPC	68,138					TBD
FY 2020	TEC	106,600					TBD
	OPC	6,038					TBD
	TPC	112,638					TBD
FY 2021	TEC	156,600				0	189,120
	OPC	6,038				0	7,865
	TPC	162,638				0	196,985
FY 2022	TEC	161,600	23,173			TBD	TBD
	OPC	6,038	1,827			TBD	7,865
	TPC	167,638	25,000			TBD	TBD
FY 2023	TEC	161,600	23,173	23,173		TBD	TBD
	OPC	4,000	1,827	1,827		TBD	TBD
	TPC	165,600	25,000	25,000		TBD	TBD
FY 2024 ^a	TEC	161,600	23,173	46,200	45,000	TBD	TBD
	OPC	4,000	1,827	0	5,000	TBD	TBD
	TPC	165,600	25,000	46,200	50,000	TBD	TBD

^a 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)	TBD

^b Start of Operation is based on the Baseline Change Proposal under review.

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

^a A BCP is under review by CBFO. Current Total Estimates are not available as the Annual Costs and Life Cycle Costs are still under evaluation.

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 current Waste Isolation Pilot Plant Management and Operating contract underwent a transition, and the new Management and Operating contractor will perform the acquisition for this project, overseen by the Carlsbad Field Office.

The new 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 previous Management and Operating contractor. 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.

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 \$32,633,000 in FY 2024.

Highlights of the FY 2024 Budget Request

The funding request continues progress in characterizing, packaging and shipping stored contact-handled and remote-handled transuranic waste to the Waste Isolation Pilot Plant. 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 continues the deactivation and decommissioning activities at the Radioactive Waste Management Complex as part of Resource Conservation & Recovery Act closure activities and continues dismantlement and demolition activities making progress 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 2023. In addition, activities continue toward completion of construction on the Product Storage Building expansion to store treated sodium bearing waste.

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

This request also supports surveillance and maintenance and risk reduction related activities for spent nuclear fuel continued design and engineering work for an interim spent fuel staging project is ongoing.

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.

FY 2023 - 2024 Key Milestones/Outlook

The following are the Idaho Cleanup Projects' regulatory milestones:

- (March 2023) Sodium Bearing Waste Treatment Facility Complete one canister.
- (March 2023) Calcine Disposition Project Conduct System Testing.
- (April 2023) Complete closure of the Transuranic Storage Area/Retrieval Enclosure and submit closure documentation within 60 days after completion of closure.
- (June 2023) Complete shipment of Idaho Settlement Agreement (Original Volume) Transuranic Contaminated Waste (sludge).
- (September 2023) Certify 25 percent of remaining Contact-Handled Transuranic Waste.
- (September 2023) Treat one cubic meter of Radioactive Waste Disposition Project backlog waste.
- (December 2023) Complete transfer of spent fuel from wet storage at Chemical Processing Plant 666 to dry storage.
- December 2023 Exhume and ship not less than 7,485 cubic meters of buried waste (exhume at least 5.69 acres). Exhumations completed February 2022.
- (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.
- (December 2023) Submit Draft Remedial Action Report for OU 7-13/14 Phase I.
- (March 2024) Calcine disposition Project Commence Operations.
- (June 2024) Certify 6 cubic meters of original volume Remote-Handled Waste.
- (June 2024) Calcine Disposition Project Submit Schedule for System Backlog.
- (September 2024) Sodium Bearing Waste Treatment Facility Complete 15 percent treatment (128,095 gal).
- (September 2024) Certify 25 percent of remaining Contact-Handled Transuranic Waste.
- (December 2024) 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.

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 of Environmental Quality
2. Notice of Non-Compliance Consent Order (1992) – DOE/Department of Environmental Quality
3. Idaho Settlement Agreement (1995) – DOE/State of Idaho/United States Navy (and associated adjustments)
4. Colorado Agreement (1996) – DOE/State of Colorado
5. Site Treatment Plan – DOE/Enforceable by State of Idaho
6. 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 has a ten (10) year ordering period with the potential to issue a not-to-exceed five (5) year task order(s) prior to the end of the contract ordering period. The estimated value of this end state contract is \$6.4 billion.

Environmental Management/ Idaho

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

Strategic Management

The Idaho Site will identify disposal pathways and schedules for transuranic waste and liquid sodium bearing waste; we will pursue schedules for tank farm closure, calcined waste, and spent nuclear fuel packaging 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 (shipping and overpack 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 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.
- Development of an Idaho site-wide spent nuclear fuel management plan and associated implementation plan. Idaho intends to re-utilize as many facilities as possible to treat, condition, package, and store spent nuclear fuel to avoid construction if possible.

Idaho

Funding (\$K)

	FY 2022 Enacted	FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 Enacted	FY 2024 Request vs FY 2023 Enacted (%)
Defense Environmental Cleanup					
Idaho National Laboratory					
Idaho Cleanup and Waste Disposition					
ID-0012B-D / SNF Stabilization and Disposition-2012 (Defense)					
Operating	33,336	32,245	22,000	-10,245	-32%
Construction					
22-D-403: Idaho Spent Nuclear Fuel Staging Facility, ID (ID-0012B-D)	3,000	8,000	10,159	+2,159	+27%
	36,336	40,245	32,159	-8,086	-20%
ID-0013 / Solid Waste Stabilization and Disposition	152,200	138,005	121,890	-16,115	-12%
ID-0014B / Radioactive Liquid Tank Waste Stabilization and Disposition-2012					
Operating	177,648	189,492	172,933	-16,559	-9%
Construction					
23-D-402: Idaho Calcine Construction (ID-0012B-D)	0	15,000	10,000	-5,000	-33%
	177,648	204,492	182,933	-21,559	-11%
ID-0030B / Soil and Water Remediation-2012					
Operating	49,129	15,114	20,800	+5,686	+38%
Construction					
22-D-404: Additional ICDF Landfill Disposal Cell and Evaporation Ponds Project (ID-0030B)	5,000	8,000	46,500	+38,500	+481%
	54,129	23,114	67,300	+44,186	+191%
ID-0040 / Idaho Demolition and Dismantlement	20,000	49,439	40,000	-9,439	-19%
Subtotal, Idaho Cleanup and Waste Disposition	440,313	455,295	444,282	-11,013	-2%
Idaho Community and Regulatory Support					
ID-0100 / Idaho Community and Regulatory Support	2,658	2,705	2,759	+54	+2%
Total, Idaho National Laboratory	442,971	458,000	447,041	-10,959	-2%

Non-Defense Environmental Cleanup

Small Sites

Idaho National Laboratory

Environmental Management/
Idaho

	FY 2022 Enacted	FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 Enacted	FY 2024 Request vs FY 2023 Enacted (%)
ID-0012B-N / SNF Stabilization and Disposition-2012 (Non-Defense)	11,000	13,500	11,500	-2,000	-15%
Total, Idaho	453,971	471,500	458,541	-12,959	-3%

Idaho
Explanation of Major Changes (\$K)

	FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 Enacted
Defense Environmental Cleanup			
Idaho National Laboratory			
Idaho Cleanup and Waste Disposition			
ID-0012B-D / SNF Stabilization and Disposition-2012 (Defense)			
<ul style="list-style-type: none"> The decrease reflects completion of wet to dry spent fuel transfers in FY 2023. 	40,245	32,159	-8,086
ID-0013 / Solid Waste Stabilization and Disposition			
<ul style="list-style-type: none"> The decrease reflects continued transition from waste treatment operations to closure activities. 	138,005	121,890	-16,115
ID-0014B / Radioactive Liquid Tank Waste Stabilization and Disposition-2012			
<ul style="list-style-type: none"> Reduction reflects a decrease to the Product Storage Building and cyber and network reliability investments. The decrease also reflects an anticipated reduction in costs once transition to Integrated Waste Treatment Unit operations is complete. 	204,492	182,933	-21,559
ID-0030B / Soil and Water Remediation-2012			
<ul style="list-style-type: none"> The increase reflects additional construction activities for the Idaho Comprehensive Environmental Response, Compensation, and Liability Act Disposal Cell. 	23,114	67,300	+44,186
ID-0040 / Idaho Demolition and Dismantlement			
<ul style="list-style-type: none"> The decrease reflects progress in decontamination and demolition of deactivated National Nuclear Security Administration excess high-risk facilities. 	49,439	40,000	-9,439
Idaho Community and Regulatory Support			
ID-0100 / Idaho Community and Regulatory Support			
<ul style="list-style-type: none"> No significant change. 	2,705	2,759	+54
Non-Defense Environmental Cleanup			
Small Sites			
ID-0012B-N / SNF Stabilization and Disposition-2012 (Non-Defense)			
<ul style="list-style-type: none"> Reduction reflects completed investments in Nuclear Regulatory Commission facilities. 	13,500	11,500	-2,000
Total, Idaho	471,500	458,541	-12,959

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 2023 Enacted	FY 2024 Request	Explanation of Changes FY 2024 Request vs FY 2023 Enacted
\$40,245,000	\$32,159,000	-\$8,086,000
<ul style="list-style-type: none"> Maintain all spent nuclear fuel storage facilities with accompanying spent nuclear fuel in a safe and secure state. Complete retrieval of 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. 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. Continue engineering and conceptual design work and obtain Critical Decision 1 approval for Idaho Spent Nuclear Fuel Staging Facility. 	<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. 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. 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. Continue 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. 	<ul style="list-style-type: none"> The decrease reflects completion of wet to dry spent fuel transfers in FY 2023.

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 2023 Enacted	FY 2024 Request	Explanation of Changes FY 2024 Request vs FY 2023 Enacted
\$138,005,000	\$121,890,000	-\$16,115,000
<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. • 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. 	<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. • 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. 	<ul style="list-style-type: none"> • The decrease reflects continued transition from waste treatment operations to closure activities.

-
- 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.
 - Procure overpack commodities from the Waste Isolation Pilot Plant contractor to support shipments of waste.
- 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.
 - Procure overpack commodities from the Waste Isolation Pilot Plant contractor to support shipments of waste.

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 2023 Enacted	FY 2024 Request	Explanation of Changes FY 2024 Request vs FY 2023 Enacted
\$204,492,000	\$182,933,000	-\$21,559,000
<ul style="list-style-type: none"> Develop and further the regulatory path forward for disposal of the sodium bearing waste treatment product. Initiate sodium bearing waste processing at the 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 (e.g., EO 14028, DOE O 205.1C, EM Cybersecurity Program Plan requirements). Provide engineering support for the retrieval and transfer of calcine. 	<ul style="list-style-type: none"> Develop and further the regulatory path forward for disposal of the sodium bearing waste treatment product. Continue sodium bearing waste processing at the Integrated Waste Treatment Unit. Construct the product storage building for treated sodium bearing waste. 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 (e.g., EO 14028, DOE O 205.1C, EM Cybersecurity Program Plan requirements). 	<ul style="list-style-type: none"> Reduction reflects a decrease to the Product Storage Building and cyber and network reliability investments. The decrease also reflects an anticipated reduction in costs once transition to Integrated Waste Treatment Unit operations is complete.

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- Continue with post Critical Decision 0 and pre Critical Decision 1 activities for the Calcine Disposition Project.
 - Provide engineering support and preparations for the retrieval and transfer of calcine.
 - Continue with post Critical Decision 0 and pre Critical Decision 1 activities 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 2023 Enacted	FY 2024 Request	Explanation of Changes FY 2024 Request vs FY 2023 Enacted
\$23,114,000	\$67,300,000	+\$44,186,000
<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. 	<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. 	<ul style="list-style-type: none"> • The increase reflects additional construction activities for the Idaho Comprehensive Environmental Response, Compensation, and Liability Act Disposal Cell.

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- Implement the Comprehensive Environmental Response, Compensation, and Liability Act Record of Decision for site wide ground water, miscellaneous sites, and future sites.
 - Implement the Comprehensive Environmental Response, Compensation, and Liability Act Record of Decision for unexploded ordinance.
 - Maintain Radioactive Waste Management Complex infrastructure for Comprehensive Environmental Response, Compensation, and Liability Act activities.
 - 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 site prep activities for the Comprehensive Environmental Response, Compensation, and Liability Act disposal cell expansion.
 - Continue activities in support of the design and construction of the Subsurface Disposal Area cap at Radioactive Waste Management Complex.
- Implement the Comprehensive Environmental Response, Compensation, and Liability Act Record of Decision for site wide ground water, miscellaneous sites, and future sites.
 - Implement the Comprehensive Environmental Response, Compensation, and Liability Act Record of Decision for unexploded ordinance.
 - Maintain Radioactive Waste Management Complex infrastructure for Comprehensive Environmental Response, Compensation, and Liability Act activities.
 - 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 construction activities of the Comprehensive Environmental Response, Compensation, and Liability Act disposal cell expansion.
 - Continue activities in support of the design and construction of the Subsurface Disposal Area cap at Radioactive Waste Management Complex.

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 Principle.

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 Principle, 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 2023 Enacted	FY 2024 Request	Explanation of Changes FY 2024 Request vs FY 2023 Enacted
\$2,705,000	\$2,759,000	+\$54,000
<ul style="list-style-type: none"> • Provide for site-wide environmental compliance and oversight including the Shoshone-Bannock Tribe Agreement in Principle. • Provide grant to the State of Idaho Department of Environmental Quality. • Provide for Citizens Advisory Board requirements. 	<ul style="list-style-type: none"> • Provide for site-wide environmental compliance and oversight including the Shoshone-Bannock Tribe Agreement in Principle. • 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 were performed along with transuranic and mixed/low level waste processing for disposal. Demolition and dismantlement of excess facilities include 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 2023 Enacted	FY 2024 Request	Explanation of Changes FY 2024 Request vs FY 2023 Enacted
\$49,439,000	\$40,000,000	-\$9,439,000
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. 	Support decontamination and decommissioning planning activities and continue 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 decrease reflects progress in decontamination and demolition of deactivated National Nuclear Security Administration excess high-risk facilities.

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 2023 Enacted	FY 2024 Request	Explanation of Changes FY 2024 Request vs FY 2023 Enacted
\$13,500,000	\$11,500,000	-\$2,000,000
<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 updated personnel facilities on site at Fort St Vrain. 	<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. 	<ul style="list-style-type: none"> • Reduction reflects completed investments in Nuclear Regulatory Commission facilities.

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

Total	Prior Years	FY 2022 Enacted	FY 2022 Actuals	FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs. FY 2023 Enacted
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Capital Operating Expenses Summary (including (Major Items of Equipment (MIE))

Capital Equipment > \$500K (including MIE)	16,500	0	0	0	0	16,500	+16,500
Minor Construction (<\$25M)	39,026	2,250	2,250	4,309	21,026	13,500	-7,526
Total, Capital Operating Expenses	55,526	2,250	2,250	4,309	21,026	30,000	+8,974

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	1,026	0	-1,026
NRC Licensed SNF Storage	4,500	2,250	2,250	4,309	0	0	0
Product Storage Building	20,000	0	0	0	20,000	0	-20,000
EV Charging Stations	2,000	0	0	0	0	2,000	+2,000
Refurbish CPP 1699	500	0	0	0	0	500	+500
IWTU Maintenance/Operations Construction	2,000	0	0	0	0	2,000	+2,000
INTEC Office Trailers	3,000	0	0	0	0	3,000	+3,000
Phone E-911	4,000	0	0	0	0	4,000	+4,000
CPP-691 Safety Systems	2,000	0	0	0	0	2,000	+2,000
Total, Idaho	39,026	2,250	2,250	4,309	21,026	13,500	-7,526

Total, Capital Summary

39,026	2,250	2,250	4,309	21,026	13,500	-7,526
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**Idaho
Construction Projects Summary (\$K)**

Total	Prior Years	FY 2022 Enacted	FY 2022 Actuals	FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs. FY 2023 Enacted	
22-D-403 Idaho Spent Nuclear Fuel Staging Facility (ID-0012B)							
Total Estimate Cost (TEC)	TBD	0	0	0	7,000	9,159	+2,159
Other Project Costs (OPC)	TBD	0	3,000	22	1,000	1,000	0
Total Project Cost (TPC) 22-D-403	TBD	0	3,000	22	8,000	10,159	+2,159
22-D-404 Additional ICDF Landfill Disposal Cell and Evaporation Ponds Project (ID-0030B)							
Total Estimate Cost (TEC)	TBD	0	3,000	23	5,000	46,000	+41,000
Other Project Costs (OPC)	TBD	0	2,000	528	3,000	500	-2,500
Total Project Cost (TPC) 22-D-404	TBD	0	5,000	551	8,000	46,500	+38,500
23-D-402 Calcine Construction (ID-0014B)							
Total Estimate Cost (TEC)	TBD	0	0	0	0	0	0
Other Project Costs (OPC)	TBD	0	0	0	15,000	10,000	-5,000
Total Project Cost (TPC) 23-D-402	TBD	0	0	0	15,000	10,000	-5,000

**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 2024 Request for the Idaho Spent Nuclear Fuel Staging Facility is \$10,159,000: Of the \$10,159,000, \$9,159,000 will be used for construction costs and \$1,000,000 will be used for other project costs. Funding in FY 2024 is 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 2023 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	N/A
FY 2023	5/21/2021	FY 2022	FY 2023	FY 2023	FY 2023	TBD	TBD	N/A
FY 2024	3QFY2021	4QFY2023	2Q2024	TBD	TBD	TBD	TBD	N/A

CD-0—Approve Mission Need

Conceptual Design Complete -Actual date the conceptual design was completed

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

FY 2024 Congressional Justification

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 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
FY 2024	8,000	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.

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, and all appropriate project management requirements have been met.

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

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

FY 2024 Congressional Justification

Completion. The Objective Key Performance Parameters represent the desired project performance and will be defined at Critical Decision 2.

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

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
FY 2024	1,000	1,000	1,000
Total, Design	8,000	8,000	8,000
Construction			
FY 2022	0	0	0
FY 2023	0	0	0
FY 2024	8,159	8,159	8,159
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
FY 2024	9,159	9,159	9,159
Outyears	TBD	TBD	TBD
Total, TEC	TBD	TBD	TBD
Other Project Cost (OPC)			
FY 2022	3,000	3,000	3,000

	Budget Authority (Appropriations)	Obligations	Costs
FY 2023	1,000	1,000	1,000
FY 2024	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
FY 2024	10,159	10,159	10,159
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	6,000	5,000	N/A
Contingency	2,000	2,000	N/A
Total, Design	8,000	7,000	N/A
Construction			
Site Work	TBD	TBD	N/A
Long-lead Equipment	N/A	N/A	N/A
Construction	TBD	TBD	N/A
Contingency	TBD	TBD	N/A
Total, Construction	TBD	TBD	N/A
Total, TEC	TBD	TBD	N/A
Contingency, TEC	TBD	TBD	N/A
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning	N/A	N/A	N/A
Conceptual Design	TBD	TBD	N/A
Independent Reviews & Estimates	N/A	N/A	N/A
Contingency	TBD	TBD	N/A
Other OPC	TBD	TBD	N/A
Total, OPC except D&D	TBD	TBD	N/A

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total, OPC	TBD	TBD	N/A
Contingency, OPC	TBD	TBD	N/A
<hr/>			
Total, TPC	TBD	TBD	N/A
Total, Contingency	TBD	TBD	N/A

Schedule of Appropriation Requests

(Dollars in Thousands)

Request		FY 2022	FY 2023	FY 2024	Outyears	Total
FY 2022	TEC	0	TBD	TBD	TBD	TBD
	OPC	3,000	TBD	TBD	TBD	TBD
	TPC	3,000	TBD	TBD	TBD	TBD
FY 2023	TEC	0	7,000	TBD	TBD	TBD
	OPC	3,000	1,000	TBD	TBD	TBD
	TPC	3,000	8,000	TBD	TBD	TBD
FY 2024	TEC	0	7,000	9,159	TBD	TBD
	OPC	3,000	1,000	1,000	TBD	TBD
	TPC	3,000	8,000	10,159	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

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

FY 2024 Congressional Justification

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 2024 Request for the Idaho Comprehensive Environmental Response, Compensation, and Liability Act Disposal Facility Disposal Facility (ICDF) Expansion Project is \$46,500,000 with \$46,000,000 for construction under Total Estimated Cost (TEC), and \$500,000 for Other Project Costs (OPC). The TEC funding will be used to complete the excavation of the landfill cell and construct/install the landfill liners and associated systems. The OPC funding will be used to complete the Remedial Action Work Plan (RAWP). Funding in FY 2024 is based on a Design/Bid/Build contract model which includes a construction 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 revised Critical Decision 0 was approved on January 3, 2023 with a cost range of \$75,000,000 to \$90,000,000.

A Certified Federal Project Director (FPD) Level I has been assigned to the Project.

Significant Changes

This Construction Project Data Sheet is an update of the FY 2023 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.

The recent bottom-up cost estimate used the available conceptual design information on the size and configuration of the new landfill and evaporation ponds. The cost of materials, equipment, and labor for construction and has greatly increased due to labor needs, materials production, recent escalation rates greater than historical, supply chain (e.g., procurement of landfill and evaporation pond liner materials, steel and concrete, availability of heavy equipment, etc.), and other issues. Also, the size of the evaporation ponds have significantly increased.

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
FY 2024	01/03/2023	11/09/2022	02/23/2023	2QFY2023	4QFY2023	4QFY2023	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
FY 2024	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 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
Construction completion approval by regulators in 1Q FY 2026	Idaho Comprehensive Environmental Response, Compensation and Liability Act Disposal cell expansion project will design and construct a new landfill cell with disposal capacity of 510,000m ³ and the expand the allowable disposal capacity of the existing landfill cells 1&2 by 140,000m ³ along with designing and constructing new evaporation ponds for leachate management.

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	0
FY 2023	1,000	1,000	4,000
	4,000	4,000	4,000
Construction			
FY 2022	0	0	0
FY 2023	4,000	4,000	4,000
FY 2024	46,000	46,000	46,000
Outyears	TBD	TBD	TBD
Total, Construction	TBD	TBD	TBD
Total Estimated Cost (TEC)			
FY 2022	3,000	3,000	0
FY 2023	5,000	5,000	8,000
FY 2024	46,000	46,000	46,000
Outyears	TBD	TBD	TBD
Total, TEC	TBD	TBD	TBD
Other Project Cost (OPC)			
FY 2022	2,000	2,000	961
FY 2023	3,000	3,000	4,039
FY 2024	500	500	500
Outyears	TBD	TBD	TBD
Total, OPC	6,000	6,000	6,000
Total Project Costs			
FY 2022	5,000	5,000	961
FY 2023	8,000	8,000	12,039
FY 2024	46,500	46,500	46,500
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	3,000	N/A
Contingency	1,000	1,000	N/A
Total, Design	4,000	4,000	N/A
Construction			
Site Work	N/A	N/A	N/A
Long-lead Equipment	N/A	N/A	N/A
Construction	TBD	TBD	N/A
Contingency	TBD	TBD	N/A
Total, Construction	TBD	TBD	N/A
Total, TEC	TBD	TBD	N/A
<i>Contingency, TEC</i>	<i>TBD</i>	<i>TBD</i>	<i>N/A</i>
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning	TBD	TBD	N/A
Conceptual Design	TBD	TBD	N/A
Independent Reviews & Estimates	N/A	N/A	N/A
Contingency	TBD	TBD	N/A
Other OPC	TBD	TBD	N/A
Total, OPC except D&D	TBD	TBD	N/A
Total, OPC	TBD	TBD	N/A
<i>Contingency, OPC</i>	<i>TBD</i>	<i>TBD</i>	<i>N/A</i>
Total, TPC	TBD	TBD	N/A
<i>Total, Contingency</i>	<i>TBD</i>	<i>TBD</i>	<i>N/A</i>

Schedule of Appropriation Requests

(Dollars in Thousands)

Request		FY 2022	FY 2023	FY 2024	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
FY 2024	TEC	3,000	5,000	46,000	TBD	TBD
	OPC	2,000	3,000	500	TBD	TBD
	TPC	5,000	8,000	46,500	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
<u>Maintenance & Repair</u>	TBD	TBD	TBD	TBD
Total	TBD	TBD	TBD	TBD

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). Design, construction, and startup activities would be conducted using subcontractors to the Idaho Cleanup Project contractor in a design/bid/construct approach.

**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 2024 Request for the Idaho Calcine Construction is \$10,000,000: \$0 for construction and \$10,000,000 other project costs. Funding in FY 2024 includes 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*, which was approved on June 29, 2007. Project cost ranges and a project end date are currently to be determined and will be provided as the project matures to Critical Decision 1.

A Certified Federal Project Director Level IV is yet to be assigned to the Project.

Significant Changes

This Construction Project Data Sheet is an update of the FY 2023 Calcine Construction Project Data Sheet and does not represent a new start for the budget year.

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
FY 2024	3QFY2007	TBD	TBD	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

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

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
FY 2024	TBD	TBD	TBD	TBD	N/A	TBD	TBD

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

FY 2024 Congressional Justification

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 Idaho Calcine Construction is to manage, store, treat (if required), and dispose of 4,400 cubic meters of 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 4,400 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. Additionally, delays in treating sodium bearing waste at the Integrated Waste Treatment Unit have had a direct impact on repurposing the facility for the calcine project.

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*, and all appropriate project management requirements have been met.

Key Performance Parameters

The Threshold key performance parameters, 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
FY 2024	0	0	0
Outyears	TBD	TBD	TBD
Total, Design	TBD	TBD	TBD
Construction			
FY 2023	0	0	0
FY 2024	0	0	0
Outyears	TBD	TBD	TBD
Total, Construction	TBD	TBD	TBD
Total Estimated Cost (TEC)			
FY 2023	0	0	0
FY 2024	0	0	0
Total, TEC	TBD	TBD	TBD
Other Project Cost (OPC)			
FY 2023	15,000	15,000	15,000
FY 2024	10,000	10,000	10,000
Outyears	TBD	TBD	TBD
Total, OPC	TBD	TBD	TBD
Total Project Costs			
FY 2023	15,000	15,000	15,000
FY 2024	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			

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

Schedule of Appropriation Requests

(Dollars in Thousands)

Request		FY 2022	FY 2023	FY 2024	Outyears	Total
FY 2023	TEC	N/A	0	N/A	TBD	TBD
	OPC	N/A	10,000	N/A	TBD	TBD
	TPC	N/A	10,000	N/A	TBD	TBD
FY 2024	TEC	N/A	0	0	TBD	TBD
	OPC	N/A	15,000	10,000	TBD	TBD
	TPC	N/A	15,000	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 are estimated to be \$66,309,689 (\$61,370,450 for Oak Ridge National Laboratory and Y-12 and \$4,939,239 for East Tennessee Technology Park) in FY 2024.

Highlights of the FY 2024 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.
- Continue construction of the Mercury Treatment Facility to support cleanup at Y-12.
- Developing mercury-related technology to support characterization, remediation, monitoring, and modeling of mercury contamination.

The FY 2024 request includes funding for two-line item construction project:

Outfall 200 Mercury Treatment Facility (\$10,000,000)

The purpose of the Outfall 200 Mercury Treatment Facility project is to construct a robust water treatment facility that will remove mercury from Upper East Fork Poplar Creek, before it leaves the Y-12 National Security Complex site and enters the City of Oak Ridge. It also provides infrastructure to prepare for large-scale demolition of the former mercury use buildings located at the Y-12 National Security Complex site. The \$10,000,000 requested for the Outfall 200 Mercury Treatment Facility project includes funding for construction and other project costs.

On-Site Waste Disposal Facility (\$24,500,000)

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 2023 and FY 2024 Key Milestones/Outlook

- (September 2023) Complete remediation of following areas at East Tennessee Technology Park, Exposure Units 11, 17, 20, 21, 22, 25.
- (September 2023) Complete remediation of following areas at East Tennessee Technology Park, Exposure Units 19, 35, 42.
- (September 2023) Complete remediation of the Biology Complex area, Exposure Unit 5, at Y-12.
- (September 2023) Complete Reactor Complex Pre-Demolition
- (September 2024) Complete remediation of following areas at East Tennessee Technology Park, Exposure Units 38, 39, 41
- (September 2024) Complete demolition of Buildings 3005, 3010, and 3026-D Facility.

Regulatory Framework

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

- The Federal Facility Agreement for the Oak Ridge Reservation was signed by DOE, the United States Environmental Protection Agency, and the Tennessee Department of Environment and Conservation 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 - \$8.3 billion
 - 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 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 - \$811 million
 - 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 began 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 May 5, 2023
 - o Contract Value - \$119 million
 - 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 - \$24.9 million
 - 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 Oak Ridge Reservation. 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 2022 Enacted	FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 Enacted	FY 2024 Requested vs FY 2023 Enacted (%)
Defense Environmental Cleanup					
Oak Ridge					
OR Cleanup and Disposition					
OR-0013B / Solid Waste Stabilization and Disposition-2012	73,725	62,000	72,000	+10,000	+16%
OR Nuclear Facility D&D					
OR-0041 / Nuclear Facility D&D-Y-12					
Operating	130,710	141,718	161,757	+20,039	+14%
Construction					
14-D-403: Outfall 200 Mercury Treatment Facility, OR (OR-0041)	0	10,000	10,000	+0	+0%
17-D-401: On-Site Disposal Facility	12,500	35,000	24,500	-10,500	-30%
	143,210	186,718	196,257	+9,539	+5%
OR-0042 / Nuclear Facility D&D-Oak Ridge National Laboratory	206,352	192,503	173,243	-19,260	-10%
Subtotal, OR Nuclear Facility D&D	349,562	379,221	369,500	-9,721	-3%
OR Reservation Community and Regulatory Support					
OR-0100 / Oak Ridge Reservation Community & Regulatory Support (Defense)	5,096	5,300	5,500	+200	+4%
OR Technology Development and Deployment					
OR-TD-0100 / Technology Development Activities - Oak Ridge	3,000	3,000	3,000	+0	+0%
U233 Disposition Program					
OR-0011D / U233 Disposition Program	55,000	55,628	55,000	-628	-1%
Total, Oak Ridge	486,383	505,149	505,000	-149	+0%
Safeguards and Security					
OR-0020 / Safeguards and Security	13,400	13,915	14,000	+85	+1%
Total, Defense Environmental Cleanup	499,783	519,064	519,000	-64	+0%

Environmental Management/
Oak Ridge

FY 2024 Congressional Justification

	FY 2022 Enacted	FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 Enacted	FY 2024 Requested vs FY 2023 Enacted (%)
Uranium Enrichment Decontamination and Decommissioning Fund					
Oak Ridge					
Oak Ridge					
OR-0040 / Nuclear Facility D&D-East Tennessee Technology Park (D&D Fund)	105,000	92,946	91,000	-1,946	-2%
Pension and Community and Regulatory Support					
Oak Ridge					
OR-0102 / East Tennessee Technology Park Contract/Post-Closure Liabilities/Administration	25,000	25,000	25,000	+0	+0%
Total, Uranium Enrichment Decontamination and Decommissioning Fund	130,000	117,946	116,000	-1,946	-2%
Total, Oak Ridge	629,783	637,010	635,000	-2,010	+0%

Oak Ridge
Explanation of Major Changes (\$K)

FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 Enacted
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Defense Environmental Cleanup

Oak Ridge

OR Cleanup and Disposition

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

- Increase supports continued progress on processing transuranic debris waste.

62,000 72,000 +10,000

OR Nuclear Facility D&D

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

- Increase in funding for cleanup of excess contaminated facilities is offset by decrease in funding for On-Site Waste Disposal Facility.

186,718 196,257 +9,539

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

- Decrease reflects shift in cleanup work between Y-12 and ORNL.

192,503 173,243 -19,260

OR Reservation Community and Regulatory Support

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

- No significant change.

5,300 5,500 +200

OR Technology Development and Deployment

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

- No change.

3,000 3,000 +0

U233 Disposition Program

OR-0011D / U233 Disposition Program

- No significant change.

55,628 55,000 -628

Safeguards and Security

OR-0020 / Safeguards and Security

- No significant change.

13,915 14,000 +85

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.

92,946 91,000 -1,946

**Environmental Management/
Oak Ridge**

FY 2024 Congressional Justification

FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 Enacted
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**Pension and Community and Regulatory Support
OR-0102 / East Tennessee Technology Park Contract/Post-Closure Liabilities/Administration**

- No change.

	25,000	25,000	+0
Total, Oak Ridge	637,010	635,000	-2,010

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 for this project 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 2023 Enacted	FY 2024 Request	Explanation of Changes FY 2024 Request vs FY 2023 Enacted
\$62,000,000	\$72,000,000	+\$10,000,000
<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"> 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"> Increase supports continued progress on processing transuranic debris waste.

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

Overview

This PBS is within the Defense Environmental Cleanup appropriation.

This PBS funds the Oak Ridge Environmental Management 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. Oak Ridge Environmental Management 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 2023 Enacted	FY 2024 Request	Explanation of Changes FY 2024 Request vs FY 2023 Enacted
\$186,718,000	\$196,257,000	+\$9,539,000
<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. 	<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. 	<ul style="list-style-type: none"> Increase in funding for cleanup of excess contaminated facilities is offset by decrease in funding for On-Site Waste Disposal Facility.

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

- Continue Y-12 cleanup of high priority excess facilities.
- 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 2023 Enacted	FY 2024 Request	Explanation of Changes FY 2024 Request vs FY 2023 Enacted
\$192,503,000	\$173,243,000	-\$19,260,000
<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 facilities to ensure mission critical activities continue at Oak 	<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 facilities to ensure mission critical activities continue at Oak 	<ul style="list-style-type: none"> • Decrease reflects shift in cleanup work between Y-12 and ORNL.

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.

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 2023 Enacted	FY 2024 Request	Explanation of Changes FY 2024 Request vs FY 2023 Enacted
\$5,300,000	\$5,500,000	+\$200,000
<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"> 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 2023 Enacted	FY 2024 Request	Explanation of Changes FY 2024 Request vs FY 2023 Enacted
\$3,000,000	\$3,000,000	+\$0
<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"> • 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"> • No change.

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 2023 Enacted	FY 2024 Request	Explanation of Changes FY 2024 Request vs FY 2023 Enacted
\$55,628,000	\$55,000,000	-\$628,000
<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"> 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"> No significant change.

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 legal, regulatory, government-wide, or DOE requirements including EO 14028, DOE O 205.1C, EM Cybersecurity Program Plan (EM-CSPP), 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 2023 Enacted	FY 2024 Request	Explanation of Changes FY 2024 Request vs FY 2023 Enacted
\$13,915,000	\$14,000,000	+\$85,000
<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 (e.g., EO 14028, DOE O 205.1C, EM-CSPP), 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 (e.g., EO 14028, DOE O 205.1C, EM-CSPP), 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"> No significant change.

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 most 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 2023 Enacted	FY 2024 Request	Explanation of Changes FY 2024 Request vs FY 2023 Enacted
\$92,946,000	\$91,000,000	-\$1,946,000
<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"> 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 2023 Enacted	FY 2024 Request	Explanation of Changes FY 2024 Request vs FY 2023 Enacted
\$25,000,000	\$25,000,000	+\$0
<ul style="list-style-type: none"> Continue funding of contractor liabilities associated with post-retirement life, medical benefits and pensions. 	<ul style="list-style-type: none"> Continue funding of contractor liabilities associated with post-retirement life, medical benefits, and pensions. 	<ul style="list-style-type: none"> No change.

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

Total	Prior Years	FY 2022 Enacted	FY 2022 Actuals	FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 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)	98,303	1,500	9,000	8,000	18,803	70,000
Total, Capital Operating Expenses	98,303	1,500	9,000	8,000	18,803	70,000

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

Oak Ridge (Direct Funded)

Disposal Area Remedial Action Facility Upgrade	9,000	0	0	0	0	9,000	+9,000
Landfill Expansion	11,500	0	0	0	11,500	0	-11,500
Transportation Center Relocation	11,000	0	0	0	0	11,000	+11,000
ORNL Infrastructure Buildout	15,500	0	0	0	0	15,500	+15,500
Y-12 Infrastructure Buildout	16,500	0	0	0	0	16,500	+16,500
Building 3608 Above Ground Pipe Replacement	18,803	1,500	9,000	8,000	7,303	2,000	-5,303
LGWO Chemical Addition	4,500	0	0	0	0	4,500	+4,500
LGWO Cathodic Protection	2,000	0	0	0	0	2,000	+2,000
LGWO Pipe Replacement 2600	9,500	0	0	0	0	9,500	+9,500
Total, Oak Ridge	98,303	1,500	9,000	8,000	18,803	70,000	+51,197
Total, Capital Summary	98,303	1,500	9,000	8,000	18,803	70,000	+51,197

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

Total	Prior Years	FY 2022 Enacted	FY 2022 Actuals	FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 Enacted
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14-D-403, Outfall 2000 Mercury Treatment Facility (OR-0041)

Total Estimate Cost (TEC)	TBD	0	0	0	10,000	10,000	0
Other Project Costs (OPC)	TBD	0	0	0	0	0	0
Total Project Cost (TPC) 14-D-403	TBD	224,000	0	0	10,000	10,000	0

* Project is being rebaselined.

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

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

Total Estimate Cost (TEC)	TBD	48,293	12,073	2,723	34,222	23,722	-10,500
Other Project Costs (OPC)	TBD	22,621	427	0	778	778	0
Total Project Cost (TPC) 17-D-401	TBD	70,914	12,500	2,723	35,000	24,500	-10,500

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

* FY 2022 Actuals as of July 30, 2022

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 2024 Request for the On-Site Waste Disposal Facility is \$24,500,000 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 (CERCLA) 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 site. 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 2024 Data Sheet is an update to the FY 2023 Construction Project Data Sheet for the On-Site Waste Disposal Facility and does not include a new start for the budget year.

During FY 2022, all parties agreed to the Radiological Dispute Resolution allowing for submittal of the Environmental Management Disposal Facility D2 Record of Decision. Approval of the On-Site Waste Disposal Facility Record of Decision will allow Long-Lead Procurement/Early Site Preparation activities to start in FY 2023 and continue into FY 2024. 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	<u>Fiscal Year or Date</u>							
	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
FY 2020								
Phase 1	5/26/2016	1/12/2018	8/23/2018	4Q FY2020	TBD	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 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	5/26/2016	1/12/2018	8/23/2018	TBD	1Q FY2023	TBD	N/A	TBD
FY 2024								
Phase 1	5/26/2016	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
FY 2024	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 site. 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 2.21 million cubic yard capacity of the existing on-site disposal facility, the Environmental Management Waste Management Facility, which is projected to be full in late 2020's. 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 OR site 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.	Draft at CD-1	N/A

Performance Measure	Threshold	Objective
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.	Draft at CD-1	N/A
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).	Draft at CD-1	N/A

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	4,225
FY 2021		22,314	5,364	2,266
FY 2022		12,073	12,073	7,373
FY 2023		34,222	34,360	15,899
FY 2024		0	16,950	32,661
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
FY 2024	Phase 1	23,722	23,722	23,722
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	4,225
FY 2021	Phase 1	22,314	5,364	2,266
FY 2022	Phase 1	12,073	12,073	7,373
FY 2023	Phase 1	34,222	34,360	15,899
FY 2024	Phase 1	23,722	40,672	56,383
Outyears	Phase 1	TBD	TBD	TBD
Total TEC		TBD	TBD	TBD

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

(Dollars in Thousands)

Appropriations	Obligations	Costs
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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
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	0
FY 2022	Phase 1	427	427	427
FY 2023	Phase 1	778	778	778
FY 2024	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	0
FY 2022	Phase 1	427	427	427
FY 2023	Phase 1	778	778	778
FY 2024	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	4,253
FY 2021	Phase 1	22,380	5,364	2,266

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

FY 2024 Congressional Justification

		(Dollars in Thousands)		
		Appropriations	Obligations	Costs
FY 2022	Phase 1	12,500	12,500	7,800
FY 2023	Phase 1	35,000	35,138	16,677
FY 2024	Phase 1	24,500	41,450	57,161
Ouyears	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	TBD	
Construction						
Phase 1				TBD	TBD	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				TBD	TBD	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	FY 2024	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

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

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
FY 2024	TEC	6,000	10,000								
	OPC	17,237	5,297								
	TPC	23,237	15,297	10,000	0	22,380	12,500	35,000	24,500	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 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	33,600		739,200	

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 ETPP 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. Awarded a new contract to United Cleanup Oak Ridge, LLC (UCOR) on October 26, 2021, to continue this scope of work. This contract is an Indefinite-Delivery/Indefinite-Quantity (IDIQ) contract with 11 End State Task Orders. The scope under Task Orders for Line Item Projects is treated as cost plus incentive fee.

Completion of Phase 1 and 2 is included in the follow-on End State Contracting Model Oak Ridge Cleanup Contract acquisition, which is included under Task Order 8. 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.

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

1. Summary, Significant Changes and Schedule and Cost History

Summary

The FY 2024 Request for the Outfall 200 Mercury Treatment Facility is \$10,000,000 for construction.

Due to differing geological site conditions, the project is developing an updated baseline.

The most recent DOE O 413.3B approved Critical Decision is Critical Decision-2/3, *Approve Performance Baseline/Approve Start of Construction*, that was approved on October 1, 2018, with a Total Project Cost of \$224,000,000 and a CD-4 of September 30, 2025.

A Federal Project Director at the appropriate level, (level III) has been assigned to the project and has approved this data sheet.

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.

This project will design and construct a Mercury Treatment Facility for Outfall 200 flow having a total footprint of approximately 74,000 square feet. The total footprint is comprised of two primary areas, the headworks area and the treatment facility area, joined by a transfer pipeline corridor. The headworks area will consist of collection and transfer components, grit separation equipment, and storm water storage tank. The treatment facility will consist of outdoor tanks, piping, and transfer and treatment equipment along with an approximately 22,000 square foot metal building to house weather-sensitive equipment and controls. In addition, construction will include utilities, foundations, parking, and fencing. The facility will accomplish mercury removal through a combination of unit operations, including grit removal, chemical precipitation, clarification and media filtration.

The project requests an additional \$10,000,000 to pay for impacts from differing geological site conditions which will be incorporated in an updated baseline that is in development.

Critical Milestone History

Request	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 2015	2Q FY2014 ^a	N/A	2Q FY 2015	N/A	4Q FY2017	1Q FY2017	TBD	N/A	TBD
FY 2016	3/17/2014 ^a	1Q FY2015	2Q FY 2015	N/A	TBD	TBD	TBD	N/A	TBD
FY 2017	3/17/2014 ^a	10/13/2014	5/6/2015	N/A	TBD	TBD	TBD	N/A	TBD
FY 2018	3/17/2014 ^a	10/13/2014	5/6/2015	N/A	TBD	TBD	TBD	N/A	TBD
FY 2019	3/17/2014 ^a	10/13/2014	5/6/2015	8/2/2017	TBD	4Q FY2017 ^b	TBD	N/A	TBD
FY 2020	9/22/2014 ^a	10/13/2014	5/6/2015	8/2/2017	10/1/2018	8/10/2017 ^b	10/1/2018	N/A	9/30/2025
FY 2021	9/22/2014 ^a	10/13/2014	5/6/2015	8/2/2017	10/1/2018	8/10/2017 ^b	10/1/2018	N/A	9/30/2025
FY 2024	9/22/2014 ^a	10/13/2014	5/6/2015	8/2/2017	10/1/2018	8/10/2017 ^b	10/1/2018	N/A	TBD ^c

^a Critical Decision -0 approval was originally issued on 7/20/2007 for the aggregate cleanup of the Y-12 National Security Site. Conceptual Design activities for this project were not initiated until FY 2012. An updated, project-specific Mission Need Statement and Critical Decision-0 was approved by the Assistant Secretary of Environmental Management on

March 17, 2014. Disaggregation of the project from the aggregate cleanup of the Y-12 National Security Site was approved by the Deputy Secretary of Energy on September 22, 2014 and this date is recorded as the official Critical Decision-0 approval date in the Project Assessment and Reporting System (PARS II).

^b A design contractor will provide Title III design support during the construction phase.

^c The project is currently being rebaselined.

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-3A – Long-Lead Procurement/Early Site Preparation

CD-2 – Approve Performance Baseline

Final Design Complete – Estimated date the project design will be complete

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)

	TEC, Design	TEC, Construction	TEC, Total	OPC, Except D&D	OPC, D&D	OPC, Total	TPC
FY 2015	34,500	TBD	TBD	TBD	N/A	TBD	TBD
FY 2016	34,500	TBD	TBD	TBD	N/A	TBD	TBD
FY 2017	34,500	TBD	TBD	TBD	N/A	TBD	TBD
FY 2018	30,175	TBD	TBD	TBD	N/A	TBD	TBD
FY 2019	29,062	TBD	TBD	TBD	N/A	TBD	TBD
FY 2020	30,476	168,732	199,208	24,792	N/A	24,792	224,000
FY 2021	32,057	157,925	189,982	34,018	N/A	34,018	224,000
FY2024	33,403	TBD ^a	TBD ^a	30,945	N/A	30,945	TBD ^a

^a The project is currently being rebaselined.

2. Project Scope and Justification

Scope

The scope of this project is to design and construct a Mercury Treatment Facility for Outfall 200 flow having a footprint of approximately 74,000 square feet comprised of two primary areas, the headworks area and the treatment facility area, joined by a transfer pipeline corridor. The headworks area will consist of collection and transfer components, grit separation equipment, and storm water storage tank. The treatment facility will consist of outdoor tanks, piping, and transfer and treatment equipment along with an approximately 22,000 square foot metal building to house weather-sensitive equipment and controls and office areas. In addition, construction will include utilities, foundations, parking, and fencing. The Outfall 200 Mercury Treatment Facility will be constructed at the Y-12 National Security Complex in Oak Ridge, Tennessee, as a Comprehensive Environmental Response, Compensation, and Liability Act of 1980 interim remedial action. The facility will provide treatment of storm sewer water discharges through Outfall 200, for the removal of mercury. The facility will accomplish mercury removal through a combination of unit operations, including grit removal, chemical precipitation, clarification and media filtration.

The Comprehensive Environmental Response, Compensation, and Liability Act and DOE O 413.3B Critical Decision process is ongoing.

Justification

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

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

Key Performance Parameters (KPPs)

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

Performance Measure	Threshold	Objective
Provide an intake collection capacity of up to 40,000 gallons per minute (gpm), including capability to transfer up to 3,000 gpm for treatment	X	N/A
Provide a storm water storage capacity of up to 2 million gallons	X	N/A
Construct a water treatment facility with processing capacity to treat up to 3,000 gpm utilizing flow equalization, chemical precipitation, clarification, and media filtration.	X	N/A

3. Project Cost and Schedule

Financial Schedule

(dollars in thousands)		
Budget Authority (Appropriations)	Obligations	Costs

Total Estimated Cost (TEC)

Design			
FY 2014	N/A	N/A	0
FY 2015	N/A	N/A	1,184
FY 2016	N/A	N/A	6,279
FY 2017	N/A	N/A	5,830
FY 2018	N/A	N/A	2,097
FY 2019	N/A	N/A	1,916
FY 2020	N/A	N/A	2,822
FY 2021	N/A	N/A	4,646
FY 2022	N/A	N/A	4,779
FY 2023	N/A	N/A	3,452

**Environmental Management/
Oak Ridge/14-D-403 200 Mercury
Treatment Facility (OR-0041)**

	(dollars in thousands)		
	Budget Authority (Appropriations)	Obligations	Costs
FY 2024	N/A	N/A	398
Total, Design ^d	N/A	N/A	33,403 ^d
Construction			
FY 2017	N/A	N/A	984
FY 2018	N/A	N/A	12,918
FY 2019	N/A	N/A	15,505
FY 2020	N/A	N/A	22,835
FY 2021	N/A	N/A	37,593
FY 2022	N/A	N/A	34,227
FY 2023	N/A	N/A	TBD ^e
FY 2024	10,000	10,000	TBD ^e
Outyears	TBD	TBD	TBD ^e
Total, Construction	TBD	TBD	TBD ^e
TEC			
FY 2014	4,608	0	0
FY 2015	9,400	14,008	1,184
FY 2016	9,400	9,400	6,279
FY 2017	4,000	4,000	6,814
FY 2018	16,000	16,000	15,015
FY 2019	N/A	N/A	17,421
FY 2020	N/A	N/A	25,657
FY 2021	N/A	N/A	42,239
FY 2022	N/A	N/A	39,006
FY 2023	N/A	N/A	TBD ^e
FY 2024	10,000	10,000	TBD ^e
Outyears	TBD	TBD	TBD ^e
Total TEC	TBD	TBD	TBD ^e

* Congress appropriated funds for TPC beginning in FY 2017.

Other Project Cost (OPC)

OPC except D&D

FY 2012 ^a	5,153	5,153	2,325
FY 2013 ^b	253	253	2,684
FY 2014 ^c	4,375	4,375	2,895
FY 2015	1,413	1,413	2,565
FY 2016	698	698	775
FY 2017	1,100	1,100	359
FY 2018	1,100	1,100	0
FY 2019	N/A	N/A	0
FY 2020	N/A	N/A	51
FY 2021	N/A	N/A	1,200
FY 2022	N/A	N/A	5,776
FY 2023	N/A	N/A	6,520
FY 2024	N/A	N/A	4,070
Outyears	TBD	TBD	1,725
Total, OPC except D&D	TBD	TBD	30,945

	(dollars in thousands)		
	Budget Authority (Appropriations)	Obligations	Costs
OPC			
FY 2012 ^a	5,153	5,153	2,325
FY 2013 ^b	253	253	2,684
FY 2014 ^c	4,375	4,375	2,895
FY 2015	1,413	1,413	2,565
FY 2016	698	698	775
FY 2017	1,100	1,100	359
FY 2018	1,100	1,100	0
FY 2019	N/A	N/A	0
FY 2020	N/A	N/A	51
FY 2021	N/A	N/A	1,200
FY 2022	N/A	N/A	5,776
FY 2023	N/A	N/A	6,520
FY 2024	N/A	N/A	4,070
Outyears	TBD	TBD	1,725
Total, OPC	TBD	TBD	30,945

* Congress appropriated funds for TPC beginning in FY 2017.

FY 2012 ^a	5,153	5,153	2,325
FY 2013 ^b	253	253	2,684
FY 2014 ^c	8,983	4,375	2,895
FY 2015	10,813	15,421	3,749
FY 2016	10,098	10,098	7,054
FY 2017	5,100	3,600	7,173
FY 2018	17,100	6,228	15,015
FY 2019	76,000	88,334	17,421
FY 2020	70,000	26,641	25,708
FY 2021	20,500	63,897	43,439
FY 2022	N/A	N/A	44,782
FY 2023	N/A	N/A	TBD ^e
FY 2024	10,000	10,000	TBD ^e
Outyears	TBD	TBD	TBD ^e
Total, TPC	TBD	TBD	TBD ^e

* Congress appropriated funds for TPC beginning in FY 2017.

^a FY 2012 cost of \$2,325 is funded by Recovery Act appropriations.

^b FY 2013 cost of \$2,684 is funded by Recovery Act appropriations.

^c FY 2014 cost of \$145 is funded by Recovery Act appropriations.

^d A design contractor will provide Title III design support during the construction phase.

^e The project is being rebaselined.

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	14,530	14,530	13,944
Title III	TBD	16,025	13,156
Contingency	TBD	2,848	3,377
Total Design	TBD	33,403	30,476

Construction

Construction	TBD ^a	113,331	114,977
Early Site Preparation	17,882	17,882	19,000
Contingency	TBD ^a	28,439	34,755
Total Construction	TBD^a	159,652	168,732

Total, TEC

Total, TEC	TBD ^a	193,055	199,208
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Contingency, TEC

Contingency, TEC	TBD ^a	31,287	38,132
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Other Project Cost (OPC)

OPC except D&D

Conceptual Design	7,730	7,730	7,300
Start-Up	8,160	8,160	6,850
Contingency	3,184	3,184	4,262
Other OPC	11,871	11,871	6,380
Total, OPC except D&D	30,945	30,945	24,792

Total, OPC

Total, OPC	30,945	30,945	24,792
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Contingency, OPC

Contingency, OPC	3,184	3,184	4,262
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Total, TPC

Total, TPC	TBD ^a	224,000	224,000
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Total, Contingency

Total, Contingency	TBD ^a	34,471	42,394
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^a The project is being rebaselined.

Schedule of Appropriation Requests

Request		Prior Years	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2024	Outyears	Total
FY 2015 Request	TEC	14,008	TBD	TBD	TBD						TBD
	OPC	11,194	TBD	TBD	TBD						TBD
	TPC	25,202	TBD	TBD	TBD						TBD
FY 2016 Request	TEC	14,008	6,800	TBD	TBD						TBD
	OPC	11,194	500	TBD	TBD						TBD
	TPC	25,202	7,300	TBD	TBD						TBD

**Environmental Management/
Oak Ridge/14-D-403 200 Mercury
Treatment Facility (OR-0041)**

FY 2024 Congressional Justification

FY 2017 Request	TEC	14,008	9,400	4,000	TBD						TBD
	OPC	11,194	700	1,100	TBD						TBD
	TPC	25,202	10,100	5,100	TBD						TBD
FY 2018 Request	TEC	14,008	9,400	N/A	N/A						TBD
	OPC	11,194	700	N/A	N/A						TBD
	TPC	25,202	10,100	5,100	17,100						TBD
FY 2019 Request	TEC	14,008	9,400	N/A	N/A	N/A	TBD			TBD	TBD
	OPC	11,194	700	N/A	N/A	N/A	TBD			TBD	TBD
	TPC	25,202	10,100	5,100	17,100	11,274	TBD			TBD	TBD
FY 2020 Request	TEC	14,008	9,400	N/A	N/A	N/A	N/A			N/A	N/A
	OPC	11,194	700	N/A	N/A	N/A	N/A			N/A	N/A
	TPC	25,202	10,100	5,100	17,100	76,000	49,000			41,498	224,000
FY 2021 Request	TEC	14,008	9,400	N/A	N/A	N/A	N/A	N/A		N/A	N/A
	OPC	11,194	698	N/A	N/A	N/A	N/A	N/A		N/A	N/A
	TPC	25,202	10,098	5,100	17,100	76,000	70,000	20,500		N/A	224,000
FY 2024 Request	TEC	14,008	9,400	N/A	N/A	N/A	N/A	N/A	N/A	N/A	TBD
	OPC	11,194	698	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TPC	25,202	10,098	5,100	17,100	76,000	70,000	20,500	10,000	TBD ^a	TBD ^a

* Congress appropriated funds for TPC beginning in FY 2017. No requests made for FY22 or FY23.

^a The project is being rebaselined.

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)	16
Expected Future Start of D&D of this Capital Asset (fiscal quarter)	TBD ^a

^a The project is being rebaselined.

Related Funding Requirements

(dollars in thousands)

	Annual Costs		Life Cycle Costs	
	Current Total Estimate	Previous Total Estimate	Current Total Estimate	Previous Total Estimate
Operations	7,880 ^a	7,880	126,080 ^b	126,080
Utilities	0	0	0	0
Maintenance	0	0	0	0
Total, Operations & Maintenance	7,880^a	7,880	126,080^b	126,080

^a Annual Costs have been escalated to FY 2026 dollars to reflect estimated cost as of the start of operations.

^b Life Cycle Costs have not been escalated over the estimated 16-year period of operations.

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	22,000
Area of D&D in this project at Y-12 National Security Complex	0
Area at Y-12 National Security Complex to be transferred, sold, and/or D&D outside the project including area previously “banked”	0
Area of D&D in this project at other sites	0
Area at other sites to be transferred, sold, and/or D&D outside the project including area previously “banked”	22,000
Total area eliminated	22,000

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

6. Acquisition Approach

Awarded contract to URS/CH2M Oak Ridge, LLC (UCOR) on April 29, 2011. This contract includes the design of the Outfall 200 Mercury Treatment Facility, support for Critical Decision-3A/early site preparation construction activities, early site preparation utilities relocation and secant pile wall construction, support for DOE Order 413.3B Critical Decision approval through Critical Decision-2/3, and construction management technical support services. The contract is a cost plus award fee with performance based incentives.

Awarded 8a contract to Aerostar SES, LLC for limited early site preparation activities. The contract is a firm-fixed price contract.

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

An Acquisition Strategy was developed for the project to support Critical Decision-1 approval and updated to support Critical Decision-2/3 approval. An Acquisition Plan was developed for the project construction phase. A firm fixed price contract was competitively procured for the balance of construction; award was made December 4, 2018 to Aptim North Wind Construction JV LLC.

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 \$35,686,000.

The Paducah Operations Office plans to purchase the following vehicles in FY 2024: track-mobile, material handler, and a utility tractor. Paducah also plans to purchase 20 plug-in Hybrid Vehicles or Electric Vehicles through the General Services Administration.

Highlights of the FY 2024 Budget Request

This FY 2024 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 cylinders.

FY 2023 and FY 2024 Key Milestones/Outlook

- (December 2022) Completed Disposal of CY 2022 Goal of 1,000,000 Pounds of R-114 Refrigerant (Freon).
- (January 2023) Issued D1 Remedial Investigation/Feasibility Study Report for the C-400 Complex Operable Unit.
- (February 2023) Completed Remedial Action Field Work for Southwest Plume Solid Waste Management Unit 211-A.
- (August 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.
- (September 2023) Complete Demolition of Two Large Balance of Plant Facilities and 16 Small Structures.
- (September 2023) Complete Design and Initial Phase of Groundwork for the Oxide/Heel Shipping Facility.
- (September 2023) Complete First Multi-Car Shipments of Oxide Cylinders to a Licensed Disposal Facility.
- (December 2023) Complete Disposal of CY 2023 Goal of 1,000,000 Pounds of R-114 Refrigerant (Freon).
- (December 2023) Complete Installation of Pro-Force Building.
- (February 2024) Issue D1 Record of Decision for the C-400 Complex Operable Unit.
- (September 2024) Complete Reroute of Railway and Utilities in Preparation for C-400 Complex Operation Unit Remediation.
- (September 2024) Continue Segmentation and Downsizing of C-333 Process Building Converters, and Continue C-333 Bundle Compaction.
- (September 2024) Complete Dismantlement of Two Remaining Gaseous Diffusion Plant Switchyards.
- (September 2024) Complete Demolition of Ten Small Balance of Plant Structures.
- (September 2024) Complete Oxide/Heel Shipping Facility Construction to Accommodate Routine Multi-Car Shipments.
- (September 2024) Complete installation of Pro-force Training/Shoot House.

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. The 36-month option period was awarded and began on June 20, 2022, and there is an additional 24-month option period that may be utilized in 2025.
- 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. Extensions 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 2022 Enacted	FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 Enacted	FY 2024 Requested vs FY 2023 Enacted (%)
Defense Environmental Cleanup					
Safeguards and Security					
PA-0020 / Safeguards and Security	16,206	16,106	16,530	+424	+3%
Non-Defense Environmental Cleanup					
Gaseous Diffusion Plants					
Paducah Gaseous Diffusion Plant					
PA-0011X / NM Stabilization and Disposition-Depleted Uranium Hexafluoride Conversion	59,863	70,921	67,107	-3,814	-5%
Uranium Enrichment Decontamination and Decommissioning Fund					
Paducah					
Paducah Gaseous Diffusion Plant					
PA-0040 / Nuclear Facility D&D-Paducah	240,000	240,000	217,874	-22,126	-9%
Pension and Community and Regulatory Support					
Paducah Gaseous Diffusion Plant					
PA-0103 / Paducah Community and Regulatory Support	2,739	2,782	2,838	+56	+2%
Total, Uranium Enrichment Decontamination and Decommissioning Fund	242,739	242,782	220,712	-22,070	-9%
Total, Paducah	318,808	329,809	304,349	-25,460	-8%

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

	FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 Enacted
Defense Environmental Cleanup			
Safeguards and Security			
PA-0020 / Safeguards and Security			
• Increase supports additional security measures due to cyber security and physical security control requirements.	16,106	16,530	+424
Non-Defense Environmental Cleanup			
Gaseous Diffusion Plants			
Paducah Gaseous Diffusion Plant			
PA-0011X / NM Stabilization and Disposition-Depleted Uranium Hexafluoride Conversion			
• Decrease reflects partial completion of infrastructure to support oxide and heel/empty cylinder disposition.	70,921	67,107	-3,814
Uranium Enrichment Decontamination and Decommissioning Fund			
Paducah			
PA-0040 / Nuclear Facility D&D-Paducah			
• Decrease reflects the FY 2023 completion of three Deactivation and Remediation projects: construction of C-333 Material Segmentation Area, final readiness evaluation of the Bundle Crushing area, and commissioning of the Large Item Neutron Assay System.	240,000	217,874	-22,126
Pension and Community and Regulatory Support			
PA-0103 / Paducah Community and Regulatory Support			
• No significant change.	2,782	2,838	+56
Total, Paducah	329,809	304,349	-25,460

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 2023 Enacted	FY 2024 Request	Explanation of Changes FY 2024 Request vs FY 2023 Enacted
\$16,106,000	\$16,530,000	+\$424,000
<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 (e.g., Executive Order 14028, DOE O 205.1C, EM Cyber Security Program Plan). • Complete installation of Pro-force Building within the modular security complex. • Update access control points, increasing efficiency and security to the site’s limited area. • Initiate installation of Pro-force Training/Shoot House. 	<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 (e.g., Executive Order 14028, DOE O 205.1C, EM Cyber Security Program Plan). • Implement classified material management and storage upgrades. • Implement additional cyber security requirements in accordance with Executive Order 14028, DOE O 205.1C, and the EM Cyber Security Program Plan. • Complete upgrades for physical security controls. • Complete installation of Pro-force Training/Shoot House. 	<ul style="list-style-type: none"> • Increase supports additional security measures due to cyber security and physical security control requirements.

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 2023 Enacted	FY 2024 Request	Explanation of Changes FY 2024 Request vs FY 2023 Enacted
\$70,921,000	\$67,107,000	-\$3,814,000
<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. Complete Integrated Control System upgrade. Complete hydrogen fluoride storage tank relining. Perform infrastructure activities to prepare for the disposition of oxide and heel/empty cylinders. Initiate shipments of oxide cylinders to a licensed disposal facility. 	<ul style="list-style-type: none"> Conduct operations of DUF6 conversion facility. Package converted depleted uranium oxide and store on site. Conduct cylinder surveillance and maintenance to keep material in a safe, stable condition. Conduct annual plant maintenance outages. Continue plant safety and reliability modifications. Initiate procurement and installation of a cylinder evacuation improvement project that will yield a 10-15% improvement in plant processing efficiency. Perform infrastructure activities to support the disposition of oxide and heel/empty cylinders. Continue shipments of oxide cylinders to a licensed disposal facility. 	<ul style="list-style-type: none"> Decrease reflects partial completion of infrastructure to support oxide and heel/empty cylinder disposition.

**Environmental Management/
Paducah**

FY 2024 Congressional Justification

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 2023 Enacted	FY 2024 Request	Explanation of Changes FY 2024 Request vs FY 2023 Enacted
\$240,000,000	\$217,874,000	-\$22,126,000
<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. Continue characterization and dismantlement of two large electrical switchyards. Continue the disposition of R-114 Refrigerant (Freon) offsite to reduce the overall site risk. 	<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. Complete the Record of Decision for C-400. Complete characterization and dismantlement of two large electrical switchyards. Continue the disposition of R-114 Refrigerant (Freon) offsite to reduce the overall site risk. Continue segmentation and downsizing of C-333 Process Building converters and conduct C-333 	<ul style="list-style-type: none"> Decrease reflects the FY 2023 completion of three Deactivation and Remediation projects: construction of C-333 Material Segmentation Area, final readiness evaluation of the Bundle Crushing area, and commissioning of the Large Item Neutron Assay System.

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- Complete demolition of two large Balance of Plant facilities and 16 small structures.
 - Complete construction of a bundle crushing area, Material Sizing Area, and Large Item Neutron Assay System facility.
 - Complete installation of Emergency Operations Center.
 - Initiate segmentation of C-333 Process Building converters.
 - Conduct a study to assess how the Department's cleanup efforts complement the community's long-term plans for reindustrialization and workforce development.
- bundle compaction and place in long-term storage for potential reuse.
 - Complete demolition of 10 small Balance of Plant structures.
 - Replace aging HVAC systems for facilities still in use to eliminate the need for steam heat and reduce maintenance costs.
 - Initiate design of Emergency Services/Fire Department Facility.

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 2023 Enacted	FY 2024 Request	Explanation of Changes FY 2024 Request vs FY 2023 Enacted
\$2,782,000	\$2,838,000	+\$56,000
<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"> 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"> No significant change.

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

Total	Prior Years	FY 2022 Enacted	FY 2022 Actuals	FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs. FY 2023 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 (<\$25M)	24,398	6,371	12,188	5,927	4,332	1,507	-2,825
Total, Capital Operating Expenses	24,398	6,371	12,188	5,927	4,332	1,507	-2,825

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

Paducah (Direct Funded)

Large Item Neutron Assay System	5,047	4,349	698	3,548	0	0	0
ProForce Training/Track/Shoothouse	4,921	561	2,500	90	1,860	0	-1,860
Emergency Operations Center	6,000	0	6,000	1,734	0	0	0
ProForce Facility	5,923	461	2,990	555	2,472	0	-2,472
Classified Records Storage	1,000	1,000	0	0	0	0	0
Fire Department/Emergency Services Building	414	0	0	0	0	414	+414
Outdoor Lighting Upgrades	1,093	0	0	0	0	1,093	+1,093
Total, Paducah	24,398	6,371	12,188	5,927	4,332	1,507	-2,825

Total, Capital Summary	24,398	6,371	12,188	5,927	4,332	1,507	-2,825
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Portsmouth

Overview

The Portsmouth Site, occupying approximately 3,474 acres in Portsmouth, Ohio, is one of the three gaseous diffusion 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 demolition and long-term stewardship.

To complete cleanup, Portsmouth will maintain a safe, secure, and compliant posture; perform deactivation and demolition of the gaseous diffusion plant; dispose of all low-level radioactive waste and mixed low-level radioactive waste resulting from deactivation and demolition activities; dispose of all excess materials; and perform excavation of groundwater trichloroethylene plumes and landfills to provide fill for the placement of demolition debris in the On-Site Waste Disposal Facility.

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 \$42,400,000.

Portsmouth plans to purchase an electric tow tractor for DUF6 cylinder movements in FY 2024.

Highlights of the FY 2024 Budget Request

This FY 2024 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 disposition of oxide and heel/empty cylinders.

The FY 2024 Budget Request includes \$74,552,000 in funding (\$9,400,000 for design, \$56,152,000 for construction, and \$9,000,000 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 2023 and FY 2024 Key Milestones/Outlook

- (January 2023) Completed Disposal of X-326 Process Building Deactivation Waste that Requires Disposal Offsite.
- (September 2023) Complete X-326 Process Building Debris Placement in the On-Site Waste Disposal Facility.
- (September 2023) Begin Size Reduction and Placement of X-333 Process Building Coolers and Compressors in the On-Site Waste Disposal Facility.
- (September 2023) Complete Cell 2 Bowl Excavation, South Leachate Transmission System, Impacted Material Transfer Area, and Pre-Engineered Building for the Interim Leachate Treatment Systems as part of the On-Site Waste Disposal Facility (20-U-401).
- (September 2023) Complete X-231A Soil Excavation to Provide Engineered Fill for Debris Placement in the On-Site Waste Disposal Facility.
- (September 2023) Complete Demolition of X-626 Cooling Towers and Pump House Above-Grade Structure.
- (September 2023) Complete First Multi-Car Shipments of Oxide Cylinders to a Licensed Disposal Facility.
- (September 2024) Complete Removal of Exterior Obstructions; Construction of the Water Detention Berm; Installation of Security Fence; Installation of Support Facilities; Seal Basement and Tunnels; Utility Isolations; Installation of Haul and Load-Out Road; and Apply Fixative to Exterior Transite Panels to Prepare X-333 Process Building for demolition.
- (September 2024) Continue Deactivation in the Third Process Building (X-330).
- (September 2024) Complete Size Reduction and Placement of X-333 Coolers and Compressors in the On-Site Waste Disposal Facility.
- (September 2024) Complete relocation of Large Component Assay System equipment to support X-333 Process Building demolition.

- (September 2024) Complete Construction of Cell 2 liner, Valve House 2, Interim Leachate Treatment System, and Haul Road installation as part of the On-Site Waste Disposal Facility (20-U-401) to support placement of X-333 Process Building demolition debris in FY 2025.
- (September 2024) Complete Phases 5 and 6 of 5-Unit Soil Excavation to Provide Engineered Fill for Debris Placement in the On-Site Waste Disposal Facility.
- (September 2024) Continue Construction of the New X-555 Electric Substation and Upgrade of the X-5001 Substation to Support Site-Wide Electrical Reconfiguration.
- (September 2024) Complete Pilot Shipment of Heel/Empty Cylinders.

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 2023.

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, 2023.
- 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; continue 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 deactivation and demolition costs will be dependent upon the timing and extent of final environmental contamination, regulatory frameworks, and disposal/recycling options for the deactivation and demolition 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.
- Ohio Environmental Protection Agency approved DOE's Resource Conservation and Recovery Act Facility Investigation/Corrective Measure Study Report and developed the Statement of Basis for corrective action document. This document is part of the decision making process for the Resource Conservation and Recovery Act Soil and Groundwater Decision Document. On January 6, 2023, Ohio EPA issued the Statement of Basis document for a public comment period of 60 days, including a public meeting on February 15, 2023.
- 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 National Nuclear Security Administration funded activities.

Portsmouth Project Office

Funding (\$K)

	FY 2022 Enacted	FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 Enacted	FY 2024 Requested vs FY 2023 Enacted (%)
Defense Environmental Cleanup					
Safeguards and Security					
PO-0020 / Safeguards and Security	16,690	16,590	17,364	+774	+5%
Non-Defense Environmental Cleanup					
Gaseous Diffusion Plants					
Portsmouth Gaseous Diffusion Plant					
PO-0011X / NM Stabilization and Disposition-Depleted Uranium Hexafluoride Conversion	61,340	60,017	65,876	+5,859	+10%
Uranium Enrichment Decontamination and Decommissioning Fund					
Portsmouth					
Portsmouth Gaseous Diffusion Plant					
PO-0040 / Nuclear Facility D&D-Portsmouth					
Operating	392,911	424,354	418,258	-6,096	-1%
Construction					
15-U-408: On-Site Waste Disposal Facility, Portsmouth (PO-0040)	8,900	0	0	+0	+0%
20-U-401: On Site Waste Disposal Facility (Cell Line 2&3)	65,235	56,040	74,552	+18,512	+33%
	<u>467,046</u>	<u>480,394</u>	<u>492,810</u>	<u>+12,416</u>	<u>+3%</u>
Pension and Community and Regulatory Support					
Portsmouth Gaseous Diffusion Plant					
PO-0103 / Portsmouth Contract/Post-Closure Liabilities/Administration	160	130	125	-5	-4%
PO-0104 / Portsmouth Community and Regulatory Support	3,900	23,000	3,435	-19,565	-85%
Subtotal, Portsmouth Gaseous Diffusion Plant	<u>4,060</u>	<u>23,130</u>	<u>3,560</u>	<u>-19,570</u>	<u>-85%</u>
Total, Uranium Enrichment Decontamination and Decommissioning Fund	<u>471,106</u>	<u>503,524</u>	<u>496,370</u>	<u>-7,154</u>	<u>-1%</u>
Total, Portsmouth	<u>549,136</u>	<u>580,131</u>	<u>579,610</u>	<u>-521</u>	<u>+0%</u>

Environmental Management/
Portsmouth

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

	FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 Enacted
Defense Environmental Cleanup			
Safeguards and Security			
PO-0020 / Safeguards and Security			
• Increase supports additional Limited Area Footprint reduction activities, including fence line reductions.	16,590	17,364	+774
Non-Defense Environmental Cleanup			
Gaseous Diffusion Plants			
Portsmouth Gaseous Diffusion Plant			
PO-0011X / NM Stabilization and Disposition-Depleted Uranium Hexafluoride Conversion			
• Increase supports the infrastructure and disposition of oxide and heel/empty cylinders to a licensed disposal facility.	60,017	65,876	+5,859
Uranium Enrichment Decontamination and Decommissioning Fund			
Pension and Community and Regulatory Support			
PO-0103 / Portsmouth Contract/Post-Closure Liabilities/Administration			
• No significant change.	130	125	-5
PO-0104 / Portsmouth Community and Regulatory Support			
• Decrease reflects completion of activities for community-focused education and training opportunities and economic development initiatives in the local community and surrounding counties.	23,000	3,435	-19,565
Portsmouth			
PO-0040 / Nuclear Facility D&D-Portsmouth			
• Supports increased construction of On-Site Disposal Facility (20-U-401) partially offset by the ramp down of operating activities, including infrastructure projects.	480,394	492,810	+12,416
Total, Portsmouth	580,131	579,610	-521

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 2023 Enacted	FY 2024 Request	Explanation of Changes FY 2024 Request vs FY 2023 Enacted
\$16,590,000	\$17,364,000	+\$774,000
<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"> • 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. • Continue to reduce the Limited Area Footprint. 	<ul style="list-style-type: none"> • Increase supports additional Limited Area Footprint reduction activities, including fence line reductions.

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 2023 Enacted	FY 2024 Request	Explanation of Changes FY 2024 Request vs FY 2023 Enacted
\$60,017,000	\$65,876,000	+\$5,859,000
<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. Complete First Multi-Car Shipments of Oxide Cylinders to a Licensed Disposal Facility. 	<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. Initiate procurement and installation of a cylinder evacuation improvement project that will yield a 10-15% improvement in plant processing efficiency. Conduct cylinder surveillance and maintenance to keep material in a safe and stable condition. Conduct annual plant maintenance outages. Complete Pilot Shipment of Heel/Empty Cylinders. 	<ul style="list-style-type: none"> Increase supports the infrastructure and disposition of oxide and heel/empty cylinders to a licensed disposal facility.

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 2024 Budget Request of \$492,810,000 supports removal of high-risk radioactively contaminated equipment and hazardous materials from the uranium processing buildings, including \$74,552,000 (\$9,400,000 for design, \$56,152,000 for construction, and \$9,000,000 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 2023 Enacted	FY 2024 Request	Explanation of Changes FY 2024 Request vs FY 2023 Enacted
\$480,394,000	\$492,810,000	+\$12,416,000
<ul style="list-style-type: none"> Continue operations such as utility operations, pump-and-treat operations, waste operations, infrastructure support, environmental monitoring and reporting, surveillance, and maintenance of facilities. Continue On-Site Waste Disposal Facility waste placement operations. (Includes X-231A soils and debris, X-231B debris and, X-333 Process Building deactivation debris). Complete X-326 Process Building Debris Placement in the On-Site Waste Disposal Facility (15-U-408). 	<ul style="list-style-type: none"> Continue operations such as utility operations, pump-and-treat operations, waste operations, infrastructure support, environmental monitoring and reporting, surveillance, and maintenance of facilities. Continue On-Site Waste Disposal Facility waste placement operations. (Includes X-333 Process Building deactivation debris, and 5-Unit Plume soils). Complete X-333 Process Building interior Asbestos Containing Material abatement to prepare the building for demolition. 	<ul style="list-style-type: none"> Supports increased construction of On-Site Disposal Facility (20-U-401) partially offset by the ramp down of operating activities, including infrastructure projects.

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- Complete Disposal of X-326 Process Building deactivation waste that requires disposal offsite.
 - Continue deactivation of the X-333 Process Building by completing characterization of uranium hold up, and complete removal of exterior Asbestos Containing Material.
 - Begin Size Reduction and Placement of X-333 Process Building Coolers and Compressors in the On-Site Waste Disposal Facility (15-U-408).
 - Complete construction of Large Component Assay System facility to support the relocation of the equipment for characterization of large components from X-333 Process Building demolition.
 - Complete soil excavation of X-231A land fill for placement in the On-Site Waste Disposal Facility as engineered fill.
 - On-Site Waste Disposal Facility Construction (20-U-401): Complete Phase 2 the South Leachate Transmission System (LTS) which includes South Leachate Transmission line, sandstone monitoring trench, south lift station, Valve house 2, 3, 6, 7 and 10 excavation and foundation and walls formed and poured, installation of the South Leachate Transmission System gravity line.
 - On-Site Waste Disposal Facility Construction (20-U-401): Complete Cell 2 Bowl Excavation for liner construction in FY 2024.
 - On-Site Waste Disposal Facility Construction (20-U-401): Complete pre-engineered metal building for the B train treatment system needed for Impacted Material Transfer Area and Cell 2 operations.
 - On Site Waste Disposal Facility Construction (20-U-401): Complete construction of the Impacted Material Transfer Area.
 - Complete pre-demolition of the X-333 Process Building. This includes: removal of exterior obstructions; construction of the water detention berm; installation of security fence; installation of support facilities; seal basement and tunnels; utility isolations; installation of haul and load-out road; and apply fixative to exterior Transite panels.
 - Complete relocation of Large Component Assay System uranium hold up measuring equipment to support the X-333 Process Building demolition.
 - Complete Phase 5 and 6 of the 5-Unit plume excavations for placement in the On-Site Waste Disposal Facility as engineered fill.
 - On-Site Waste Disposal Facility Construction (20-U-401): Complete construction of Cell 2 Liner for placement of X-333 Process Building demolition debris.
 - On-Site Waste Disposal Facility Construction (20-U-401): Complete above ground metal structures and metal components for valve house 2.
 - On-Site Waste Disposal Facility Construction (20-U-401): Complete construction of the Interim Leachate Treatment System.
 - On-Site Waste Disposal Facility Construction (20-U-401): Complete haul road installation to support transfer of demolition debris to and from the Impacted Material Transfer Area.
 - On-Site Waste Disposal Facility Construction (20-U-401): Complete transfer of A-treatment train to Interim Leachate Treatment System operations.
 - On-Site Waste Disposal Facility Construction (20-U-401): Continue construction activities for cell 3 and 6 for future cell capacity in FY 2025.

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- On Site Waste Disposal Facility Construction (20-U-401): Complete construction of the Impacted Material area tanks and wheel wash to support Impacted Material Transfer Area Operations.
 - Continue reconfiguration/modifications of uranium and utility areas to support future contracts.
 - Complete demolition of X-626 cooling towers and pump house above grade structure to support 5-Unit Plume soil excavations.
 - Continue reconfiguration/modifications of uranium handling facilities and utility areas.

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 2023 Enacted	FY 2024 Request	Explanation of Changes FY 2024 Request vs FY 2023 Enacted
\$130,000	\$125,000	-\$5,000
<ul style="list-style-type: none"> Continue to provide defense against legal claims filed against the Government and its contractors. Continue record searches in support of legal claims, Freedom of Information Act requests, and requests from both state and Federal regulatory and elected officials. Continue to provide payment into the Portsmouth pension program to remain in compliance with the Employee Retirement Income Security Act, DOE 350.1 and other applicable laws. 	<ul style="list-style-type: none"> Continue to provide defense against legal claims filed against the Government and its contractors. Continue record searches in support of legal claims, Freedom of Information Act requests, and requests from both state and Federal regulatory and elected officials. Continue to provide payment into the Portsmouth pension program to remain in compliance with the Employee Retirement Income Security Act, DOE 350.1 and other applicable laws. 	<ul style="list-style-type: none"> No significant change.

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 2023 Enacted	FY 2024 Request	Explanation of Changes FY 2024 Request vs FY 2023 Enacted
\$23,000,000	\$3,435,000	-\$19,565,000
<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 Pike County. • Support technical/scientific activities for the Ohio University. • Support community-focused education and training opportunities and economic development initiatives. 	<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 Pike County • Support community outreach grants for the local area. • Support technical/scientific activities for the Ohio University. 	<ul style="list-style-type: none"> • Decrease reflects completion of activities for community-focused education and training opportunities and economic development initiatives in the local community and surrounding counties.

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

Total	Prior Years	FY 2022 Enacted	FY 2022 Actuals ¹	FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 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 (<\$25M)	23,945	1,656	12,400	92	5,164	4,725	-439
Total, Capital Operating Expenses	23,945	1,656	12,400	92	5,164	4,725	-439

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

Portsmouth (Direct Funded)

Electrical Supply and Distribution Gaseous Diffusion Plant

Electrical Supply and Distribution Gaseous Diffusion Plant	23,945	1,656	12,400	92	5,164	4,725	-439
Total, Portsmouth	23,945	1,656	12,400	92	5,164	4,725	-439

Total, Capital Summary

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

Total	Prior Years	FY 2022 Enacted	FY 2022 Actuals ¹	FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs. FY 2023 Enacted
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15-U-408, On Site Waste Disposal Facility – Initial Infrastructure and Cell 1, 4 and 5 Liner Construction (PO-0040)

Total Estimate Cost (TEC)	268,058	227,234	8,405	11,403	0	0	+0
Other Project Costs (OPC)	16,616	12,679	495	483	0	0	+0
Total Project Cost (TPC) 15-U-408	284,674^a	239,913	8,900	11,886	0	0	+0

20-U-401, On Site Waste Disposal Facility – Remaining Infrastructure and Cell 2, 3, and 6 Liner Construction (PO-0040)

Total Estimate Cost (TEC)	341,212	25,756	62,430	59,800	50,840	65,552	+14,712
Other Project Costs (OPC)	31,788	744	2,805	2,600	5,200	9,000	+3,800
Total Project Cost (TPC) 20-U-401	373,000	26,500	65,235	62,400	56,040	74,552	+18,512

^a The CD 4 package was approved on August 16, 2022, significantly earlier than the approved CD-4 baseline schedule of 3Q FY 2024. The Total Project Cost will be significantly below the CD-2 approved Total Project Cost estimate by approximately \$35,861,000 when all the costs are finalized.

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 2024 Request for the On-Site Waste Disposal Facility – Initial Infrastructure & Cell 1, 4, & 5 Liner CAP-1 Construction Project is \$0. All construction activities for CAP 1 have been completed, and Cells 1, 4, and 5 have been transferred to On-Site Waste Disposal Facility Operations. The CD 4 package was approved on August 16, 2022, significantly earlier than the approved CD-4 baseline schedule of 3Q FY 2024. As such, this will be the final Project Data Sheet for CAP 1.

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 Independent Cost Estimate (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 at a P80 Confidence Level.

This Project Data Sheet has been prepared and reviewed by the Federal Project Director for the Project. The appointed Federal Project Director is certified at Level III which is appropriate for this 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.

The Total Project Cost reflected in this data sheet is the CD-2 baseline. However, the project will be delivered ahead of the CD-4 schedule and under the approved CD-4 Total Project Cost estimate.

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

FY 2024 Congressional Justification

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 July 22, 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 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.

All construction activities for CAP 1 have been completed and Cells 1, 4, and 5 have been transferred to On-Site Waste Disposal Facility Operations.

On July 1, 2022, a CD 4 package was submitted to DOE headquarters for review and approval, which is approximately 13 months earlier than forecasted in the CD 2/3 baseline schedule.

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 ^c
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
FY 2024	08/28/2015	04/10/2014	08/28/2015	4/10/2018	2/12/2019	4/10/2018	N/A	08/16/2022

^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. The CD 4 package was approved on August 16, 2022, significantly earlier than the approved CD-4 baseline schedule of 3Q FY 2024. The Total Project Cost will

be significantly below the CD-2 approved Total Project Cost estimate by approximately \$35,861,000 when all the costs are finalized.

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
FY 2024	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

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

FY 2024 Congressional Justification

FY 2023	18,061	249,997	268,058	16,616	N/A	16,616	284,674
FY 2024	18,132	217,494	235,656	13,187	N/A	13,187	248,813

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

^a The CD 4 package was approved on August 16, 2022, significantly earlier than the approved CD-4 baseline schedule of 3Q FY 2024. The Total Project Cost will be significantly below the CD-2 approved Total Project Cost estimate by approximately \$35,861,000 when all the costs are finalized.

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. 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 Decontamination & Decommissioning Project and for the associated waste management. The terms of the agreement are contained in the April 13, 2010, Director’s Final Findings and Orders for Removal Action and Remedial Investigation and Feasibility Study and Remedial Design and Remedial Action, including the July 16, 2012, Modification thereto. The Comprehensive Environmental Response, Compensation, and Liability Act process was completed in June 2015, resulting in a Record of Decision selecting a combined on-site and off-site waste disposal approach as the preferred alternative.

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 Decontamination & Decommissioning 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.

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

FY 2024 Congressional Justification

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
FY 2022	379	379	379
FY 2023	0	0	0
FY 2024	0	0	0
Total, Design	18,132	18,132	18,132
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	45,850	45,850	44,363
FY 2022	8,013	8,013	11,490
FY 2023	0	0	0
FY 2024***	0	0	0
Total, Construction	217,494	217,494	217,494
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

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

FY 2024 Congressional Justification

(Dollars in Thousands)

	Budget Authority (Appropriations)	Obligations	Costs
FY 2021	46,763	46,763	45,276
FY 2022	8,392	8,392	9,869
FY 2023	0	0	0
FY 2024***	0	0	0
Total, TEC	235,626	235,626	233,626

[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	508	508	492
FY 2023	0	0	0
FY 2024***	0	0	0
Total, OPC	13,187	13,187	13,187

Total Project Cost (TPC)

FY 2015	4,500	4,500	4,500
FY 2016	24,454	24,454	24,454
FY 2017	41,168	41,168	41,168
FY 2018	38,882	38,882	38,882
FY 2019	41,168	41,168	41,168
FY 2020	41,102	41,102	41,102
FY 2021	48,639	48,639	48,639
FY 2022 **	8,900	8,900	8,900
FY 2023	0	0	0
FY 2024***	0	0	0
Total, TPC	248,813	248,813	248,813

*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.

***This project received CD-4 approval on August 16, 2022. This Project Data Sheet is being submitted as a close out data sheet for the project to reflect the anticipated costs savings of \$35,861,000.

Note: Beginning in FY 2017, Other Project Cost was appropriated to the capital construction line-item account (15-U-408) within PBS PO-0040, Nuclear Facility D&D. Prior to FY 2017, Other Project Cost 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.

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

FY 2024 Congressional Justification

Details of Project Cost Estimate

(Dollars in Thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design			
Design	18,132	17,923	16,542
Contingency	0	138	138
Total, Design	18,132	18,061	16,680
Construction			
Building & Site Work	216,931	235,326	236,707
D&D	563	563	563
Contingency	0	14,108	14,108
Total, Construction	217,494	249,997	251,378
Total, TEC	235,626	268,058	268,058
Contingency, TEC	0	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	10,848	13,948	13,948
Contingency	0	329	329
Total, OPC except D&D	13,187	16,616	16,616
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	13,187	16,616	16,616
Contingency, OPC	0	329	329
Total, TPC	248,813	284,674	284,674
Total, Contingency	0	14,575	14,575

Schedule of Appropriation Requests

(Dollars in Thousands)

Request Year		Prior Years	FY 2022	FY 2023	FY 2024	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
FY 2024 ^a	TEC	227,234	8,392		0	0	235,626
	OPC	12,679	508		0	0	13,187
	TPC	239,913	8,900		0	0	248,813

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

FY 2024 Congressional Justification

^a This project received CD-4 approval on August 16, 2022. This Project Data Sheet is being submitted as a close out data sheet for the project to reflect the anticipated costs savings of \$35,861,000.

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 Decontamination & Decommissioning 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.

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 Disposal Facility**

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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 2024 Request for the On-Site Waste Disposal Facility – Remaining Infrastructure & Cell 2, 3, & 6 Liner CAP-2 Construction Project is \$74,552,000 of Total Project Cost (TPC) funding. In FY 2024, 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 Leachate Transmission System (LTS) areas, and continued installation of valve houses 2, 3, 6, 7, and 10. Additionally, this funding will allow for continuation of Certified for Construction (CFC) design, procurement, and construction activities for this project. The requested funding is consistent with the approved Project Execution Plan and the approved CD-1/2/3 baseline for the project.

The first Portsmouth 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 building demolition debris. The next Process Building (X-333) is scheduled to be ready for pre-demolition in FY 2023 and is planned to start demolition in FY 2024. Disposal capacity for demolition debris remains on 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 in FY 2024. CAP-1 remaining capacity will accommodate initial X-333 waste placement; however CAP-2 is needed to accommodate the entire waste volume for X-333.

The CAP-2 Project was approved for CD 1/2/3 on February 25, 2020, with a Total Project Cost of \$373,000,000 at a P80 Confidence Level.

This Project Data Sheet has been prepared and reviewed by the Federal Project Director for the Project. The appointed Federal Project Director is certified at Level III which is appropriate for this 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 June 30, 2022, the following site activities have been completed: construction of Sedimentation Pond 1B, rough grading of the Impacted Materials Transfer Area (IMTA), clearing and grubbing of the Excess Materials Staging Area (EMSA), and construction of the East Maintenance Building.

Large-scale earthwork construction has been initiated on the South Leachate Transmission System (LTS) Phase I and the clay layer for the Impacted Materials Transfer Area Liner system. Also, long-lead procurements are underway for Impacted Materials Transfer Area Operations Trailers fabrication, Impacted Materials Transfer Area Operations Trailers installations, Impacted Materials Transfer Area tanks construction, Impacted Materials Transfer Area Utilities installation, Impacted Materials Transfer Area Wheel Wash fabrication, Interim Leachate Treatment System (ILTS) Phase II building construction and overhead crane, Impacted Materials Transfer Area groundwater monitoring wells installation, and South Leachate Transmission System Phase II construction.

Additionally, the following work is projected to be completed by the end of FY 2023: South Leachate Transmission System construction, Impacted Materials Transfer Area construction, installation of Interim Leachate Treatment System building & overhead crane, and construction of Valve Houses 2, 3, 6, 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 FY 2019	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
FY 2024	8/15/2016	04/10/2014***	02/25/2020	02/25/2020	08/10/2020	02/25/2020	N/A	4Q FY 2027

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

** Regulatory Design for the entire On-Site Waste Disposal Facility, including the components included in the On-Site Waste Disposal Facility CAP-2 Project, were completed as part of the On-Site Waste Disposal Facility CAP-1 Project (as shown). Before construction of each component is initiated, final Certified for Construction designs for the On-Site Waste Disposal Facility CAP-2 Project are completed. Certified for Construction design takes into account lessons learned from On-site Waste Disposal Facility CAP-1.

*** 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
FY 2024	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 Interim Leachate Treatment System (ILTS) Phase II, the dedicated haul road, the Impacted Material Transfer Area (IMTA) and other associated miscellaneous

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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. 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 On-Site Waste Disposal Facility 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 Environmental Protection Agency.	800 gpm	N/A

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
FY 2024	9,400	9,400	9,400
FY 2025	9,400	9,400	9,400
FY 2026	3,400	3,400	3,400
FY 2027	1,569	1,569	1,569
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	36,191	36,191	37,461
FY 2027	6,892	6,892	9,479
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	39,591	39,591	40,861
FY 2027	8,461	8,461	11,048
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	6,300	6,300	6,200
FY 2027	1,539	1,539	1,849
Total, OPC	31,788	31,788	31,788

(dollars in thousands)

	Appropriations	Obligations	Costs
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	45,891	45,891	47,061
FY 2027	10,000	10,000	12,897
Total, TPC	373,000	373,000	373,000

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

Details of Project Cost Estimate

(dollars in thousands)

Current Total Estimate	Previous Total Estimate	Original Validated Baseline
------------------------	-------------------------	-----------------------------

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

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(dollars in thousands)

Current Total Estimate	Previous Total Estimate	Original Validated Baseline
31,788	31,788	31,788
703	703	703
373,000	373,000	373,000
16,555	16,555	16,555

Total, OPC
Contingency, OPC

Total, TPC
Total, Contingency

Schedule of Appropriation Requests

(Dollars in Thousands)

Request Year		Prior Years	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Outyears	Total
FY 2020	TEC	9,400	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
	OPC	600	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
	TPC	10,000	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
FY 2021	TEC	17,800	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
	OPC	2,200	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
	TPC	20,000	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
FY 2022	TEC	25,841	60,735	TBD	TBD	TBD	TBD	TBD	254,636	341,212
	OPC	659	4,500	TBD	TBD	TBD	TBD	TBD	26,629	31,788
	TPC	26,500	65,235	TBD	TBD	TBD	TBD	TBD	281,265	373,000
FY 2023	TEC	25,756	62,430	45,640	TBD	TBD	TBD	TBD	207,386	341,212
	OPC	744	2,805	2,400	TBD	TBD	TBD	TBD	25,839	31,788
	TPC	26,500	65,235	48,040	TBD	TBD	TBD	TBD	233,225	373,000
FY 2024	TEC	25,756	62,430	45,640	65,552	93,782	39,591	8,461	0	341,212
	OPC	744	2,805	2,400	9,000	9,000	6,300	1,539	0	31,788
	TPC	26,500	65,235	48,040	74,552	102,782	45,891	10,000	0	373,000

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.

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.

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, except for the work managed by the Office of River Protection. The Richland Operations Office provides site services for the entire Hanford site, including 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.

The Department of Energy 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. The Department of Energy 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 the Department of Energy 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. The Department of Energy 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, the Department of Energy routinely engages in consultation under the National Historic Preservation Act and the Department of Energy 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 are estimated to be \$220,200,000 in FY 2024.

The Richland Operations Office plans to purchase the following vehicles in FY 2024: Septic Truck, Potable Water Truck (2), Step Van, Water Truck, Asphalt Truck, Fire Engine Pumper Truck (2), Ladder Truck, and Ambulance (3). The total estimated cost of this equipment is \$4,700,000.

Highlights of the FY 2024 Budget Request

The Richland budget request is designed to maintain safe operations; perform site-wide mission-support services; support Direct-Feed Low-Activity Waste startup and commissioning; and conduct critical site infrastructure projects. The budget request also supports continued groundwater treatment, continued preparation to initiate remote excavation of the 300-296 waste site at the 324 Building and completion of 105K West Fuel Storage Basin deactivation, dewatering and demolition preparation activities.

The Richland Operations Office also provides the Hanford site-wide 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 (e.g., EO 14028, DOE O 205.1C, EM-CSPP), and information technology, and records management.

FY 2023 & FY 2024 Key Milestones/Outlook

The following listing represents key milestones included in the Tri-Party Agreement for performance in fiscal years 2023 and 2024.

- (June 2023) M-024-58P, Initiate Discussions of Well Commitments.
- (August 2023) M-026-01AG, Submit Hanford Land Disposal Restrictions Summary Report.
- (September 2023) M-062-57, Integrated Disposal Facility Operational.
- (September 2023) M-016-181, Complete deactivation, demolition, and removal of the 105-K-West Fuel Storage Basin.
- (September 2023) M-85-84B, Complete demolition of Plutonium-Uranium Extraction (Plant ancillary facilities 203A building and tank yard, and the 205A Building).
- (September 2023) M-015-91C, Submit Remedial Investigation/Feasibility Study Work Plan for the 200-WA-1/200-BC-1 Operable Units with Limited Schedule Information to EPA.
- (September 2023) M-016-201, Complete non-intrusive characterization for the 231Z Materials Engineering Laboratory.
- (December 2023) M-016-186, Initiate soil remediation under 105-K West Fuel Storage Basin.
- (December 2023) M-024-74, Complete construction of all groundwater wells listed for FY 2023 and before.
- (April 2024) M-026-01AH, Submit Hanford Land Disposal Restrictions Summary Report.
- (June 2024) M-016-87A, Submit annual evaluation of results of enhanced groundwater monitoring near the 618-11 burial ground.
- (June 2024) M-024-58Q, Initiate Discussions of Well Commitments.
- (June 2024) M-015-92D, Submit RCRA Facility Investigation/Corrective Measures Study and Remedial Investigation/Feasibility Study Work Plan, Draft B for the 200-EA-1 Operable Unit, with limited schedule information.
- (September 2024) M-091-55, Submit a 30% conceptual design report for the facility/capability for contact handled waste containers.
- (September 2024) M-091-58, Submit engineering study of the impacts of radiological decay of all Remote Handled Mixed Low-Level Waste and Remote Handling Transuranic mixed waste.
- (September 2024) M-093-27, Complete all interim response actions for the 105-K East & 105-K West reactor Interim Safe Storage.
- (September 2024) M-016-143, Complete the interim response actions for the 100K Area phase 2.
- (September 2024) M-016-00C, Complete all response actions in the 100K Area.
- (September 2024) M085-84C, Complete Plutonium-Uranium Extraction (Plant Infrastructure upgrades).
- (September 2024) M-085-85, Complete 202A Plutonium-Uranium Extraction (Plant) Canyon cold and dark indices
- (September 2024) M-016-202, Complete Response Actions for 10 wastes sites and Sampling for Additional 5 Waste Sites in the Outer Area.
- (September 2024) M-085-72A, Complete Demolition Preparations for the 224B Plutonium Concentration Facility.

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 that provides for an indefinite quantity of services for a fixed time. This contract structure allows the Department of Energy to achieve significant risk and financial liability reduction that provides the best overall optimal solution to Hanford Site completion and closure. Task orders to perform specific end states (cleanup completion objectives) can be issued for periods of up to five years and can be issued at any time during the ordering period. The contract is one of the first Environmental Management End State contracts in the Department of Energy complex. The contract was awarded on December 12, 2019, and the 10-year ordering period lasts through December 11, 2029. 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 includes but is not limited to: (1) cleanup commitments; (2) agency cleanup responsibilities; and (3) enforceable milestones to achieve regulatory compliance and remediation.

Richland

Funding (\$K)

	FY 2022 Enacted	FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 Enacted	FY 2024 Request vs FY 2023 Enacted (%)
Defense Environmental Cleanup					
Hanford Site					
Central Plateau Remediation					
RL-0011 / NM Stabilization and Disposition-PFP	16,500	0	0	+0	+0%
RL-0013C / Solid Waste Stabilization and Disposition- 2035					
Operating	172,783	183,600	204,200	+20,600	+11%
Construction					
18-D-404: Modification of Waste Encapsulation and Storage Facility, Richland, WA (PBS RL-0013C)	8,000	3,100	0	-3,100	-100%
24-D-401: Environmental Restoration Disposal Facility Supercell 11 Expansion Project, Hanford Site, Richland, (RL-0013C)	0	0	1,000	+1,000	+100%
	180,783	186,700	205,200	+18,500	+10%
RL-0030 / Soil and Water Remediation-Groundwater/Vadose Zone - 2035	131,308	152,700	138,300	-14,400	-9%
RL-0201 / Hanford Site Wide Services					
Operating	330,335	358,771	341,789	-16,982	-5%
Construction					
22-D-401: Eastern Plateau Fire Station, (RL-0201)	15,200	3,100	7,000	+3,900	+126%
22-D-402: 200 Area Water Treatment Facility, (RL-0201)	12,800	8,900	11,200	+2,300	+26%
23-D-404: 181D Export Water System Reconfiguration and Upgrade	0	6,770	27,149	+20,379	+301%
23-D-405: 181B Export Water System Reconfiguration and Upgrade	0	480	462	-18	-4%
	358,335	378,021	387,600	+9,579	+3%
Subtotal, Central Plateau Remediation	686,926	717,421	731,100	+13,679	+2%
Richland Community and Regulatory Support					
RL-0100 / Richland Community and Regulatory Support	8,621	10,013	10,100	+87	+1%
River Corridor and Other Cleanup Operations					
RL-0040 / Nuclear Facility D&D-Remainder of Hanford - 2035	89,413	107,606	49,000	-58,606	-54%
RL-0041 / Nuclear Facility D&D-River Corridor Closure Project	165,066	171,479	131,000	-40,479	-24%
Subtotal, River Corridor and Other Cleanup Operations	254,479	279,085	180,000	-99,085	-36%

**Environmental Management/
Richland**

FY 2024 Congressional Justification

	FY 2022 Enacted	FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 Enacted	FY 2024 Request vs FY 2023 Enacted (%)
Total, Hanford Site	950,026	1,006,519	921,200	-85,319	-8%
Safeguards and Security					
RL-0020 / Safeguards and Security	99,300	103,950	100,666	-3,284	-3%
Total, Defense Environmental Cleanup	1,049,326	1,110,469	1,021,866	-88,603	-8%
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	3,100	3,200	3,200	+0	+0%
Total, Richland	1,052,426	1,113,669	1,025,066	-88,603	-8%

Richland
Explanation of Major Changes (\$K)

FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 Enacted
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Defense Environmental Cleanup

Hanford Site

Central Plateau Remediation

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

- The increase supports the cesium/strontium (Cs/Sr) capsule disposition to dry storage equipment installation and readiness to turnover to operations; and supports conceptual design for the contact handled Transuranic waste repackaging and shipping capability.

186,700 205,200 +18,500

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

- The decrease is attributed to incremental progress on groundwater activities .

152,700 138,300 -14,400

RL-0201 / Hanford Site Wide Services

- The increase enables progress on various infrastructure projects to sustain delivery of critical services including utilities, roads, fire/emergency services, information technology systems and equipment maintenance while continuing four construction projects: Central Plateau Water Treatment Facility (L-897), Eastern Plateau Fire Station, 181D River Pump House and Feed Pump Building (L-781), and 181B River Pump House (L-826) as line items.

378,021 387,600 +9,579

Richland Community and Regulatory Support

RL-0100 / Richland Community and Regulatory Support

- No significant changes.

10,013 10,100 +87

River Corridor and Other Cleanup Operations

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

- The decrease reflects progress on risk mitigation activities.

107,606 49,000 -58,606

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

- The decrease results from progress on the 105 K West Fuel Storage Basin deactivation, 100 K East area waste site remediation and structure demolition completion, and completion of the 105 K East reactor Interim Safe Storage.

171,479 131,000 -40,479

Safeguards and Security

RL-0020 / Safeguards and Security

- No significant changes.

103,950 100,666 -3,284

FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 Enacted
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Non-Defense Environmental Cleanup
Fast Flux Test Reactor Facility D&D
RL-0042 / Nuclear Facility D&D-Fast Flux Test Facility Project

- No changes.

	3,200	3,200	+0
Total, Richland	1,113,669	1,025,066	-88,603

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 hazardous and low-level radioactive waste, and low-level radioactive waste generated at the Hanford Site and other Department of Energy and Department of Defense facilities. This PBS also includes packaging of the Environmental Management 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 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 in Carlsbad, New Mexico. About 51,000 cubic meters of mixed hazardous and 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 2023 Enacted	FY 2024 Request	Explanation of Changes FY 2024 Request vs FY 2023 Enacted
\$186,700,000	\$205,200,000	+\$18,500,000
<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. • Conduct modifications to the Waste Encapsulation and Storage Facility necessary to begin moving the cesium-strontium capsules to dry storage. • Procure components for the Cesium/Strontium capsules cask storage system. 	<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. • Operate the Integrated Disposal Facility to support Direct-Feed Low-Activity Waste startup. • Complete equipment installation in the Waste Encapsulation and Storage Facility necessary to begin readiness activities for moving the cesium/strontium capsules to dry storage. • Supports planning and design activities for contact handled Transuranic waste repackaging and shipping capability. 	<ul style="list-style-type: none"> • The increase supports the cesium/strontium (Cs/Sr) capsule disposition to dry storage equipment installation and readiness to turnover to operations; and supports conceptual design for the contact handled Transuranic waste repackaging and shipping capability.

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 and 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 and 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 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 2023 Enacted	FY 2024 Request	Explanation of Changes FY 2024 Request vs FY 2023 Enacted
\$152,700,000	\$138,300,000	-\$14,400,000
<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"> 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 decrease is attributed to incremental progress on groundwater activities .

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 Ground Water Remedial Action Implementation (Substantial 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 & 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.
- Achieve completion of the final Record of Decision for the K Reactor Area. Also achieves significant progress towards the completion of necessary decision documentation needed to complete and obtain the final Record of Decision for the N Reactor Area.
- Perform well network expansion and achieves significant progress towards necessary modifications & expansions to existing pump and treat facilities as identified in Comprehensive Environmental Response, Compensation, and Liability Act Interim and Final Records of Decisions which are focused on cleaning up groundwater.

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 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 Department of Energy’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 2023 Enacted	FY 2024 Request	Explanation of Changes FY 2024 Request vs FY 2023 Enacted
\$378,021,000	\$387,600,000	+\$9,579,000
<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"> • 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 increase enables progress on various infrastructure projects to sustain delivery of critical services including utilities, roads, fire/emergency services, information technology systems and equipment maintenance while continuing four construction projects: Central Plateau Water Treatment Facility (L-897), Eastern Plateau Fire Station, 181D River Pump House and Feed Pump Building (L-781), and 181B River Pump House (L-826) as line items.

functions; safety, environmental, health, and training; business services; and information management.

- Supports site infrastructure requirements for 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.
- Supports the national historical park mission, B Reactor roof replacement and other preservation efforts, as well as all other operations and maintenance requirements for the B Reactor facility.
- Supports, as directed by Congress, the Hanford Workforce Engagement Center to provide education and advocacy to current and former Hanford employees on all available federal and state compensation programs as well as the Hazardous Materials and Emergency Response facilities, which provide valuable training to Hanford employees.

functions; safety, environmental, health, and training; business services; and information management.

- Supports site infrastructure requirements for Direct Feed Low Activity Waste commissioning and start-up.
- Supports progress on various infrastructure projects to sustain delivery of critical services including utilities, roads, fire/emergency services, Information Technology systems and equipment maintenance while continuing four construction projects: Central Plateau Water Treatment Facility (L-897), 400 Area Fire Station (L-888) 181D River Pump House and Feed Pump Building (L-781), and 181B River Pump House (L-826) 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) Payment In Lieu of Taxes. This PBS scope will end upon completion of the Hanford Environmental Management mission.

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

Activities and Explanation of Changes

FY 2023 Enacted	FY 2024 Request	Explanation of Changes FY 2024 Request vs FY 2023 Enacted
\$10,013,000	\$10,100,000	+\$87,000
<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"> 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"> No significant changes.

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, Plutonium-Uranium Extraction Plant, and Reduction-Oxidation Plant); 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 2023 Enacted	FY 2024 Request	Explanation of Changes FY 2024 Request vs FY 2023 Enacted
\$107,606,000	\$49,000,000	-\$58,606,000
<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 degraded facility risk 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. Support degraded facility risk mitigation activities. 	<ul style="list-style-type: none"> The decrease reflects progress on risk mitigation activities.

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) 400 Area, a support complex 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 2023 Enacted	FY 2024 Request	Explanation of Changes FY 2024 Request vs FY 2023 Enacted
\$171,479,000	\$131,000,000	-\$40,479,000
<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, and other 100 K Area 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 Interim Safe Storage and continued 100 K Area (inside the fence) structure demolition. 	<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 and other 100 K Area 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 deactivation, dewatering and demo preparation activities to prepare for basin demolition. • Supports progress toward 324 Building preparation and cleanout necessary to initiate remote excavation at 300-296 waste site beneath the building. 	<ul style="list-style-type: none"> • The decrease results from progress on the 105 K West Fuel Storage Basin deactivation, 100 K East area waste site remediation and structure demolition completion, and completion of the 105 K East reactor Interim Safe Storage.

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 responsibilities for the 586 square mile Hanford Site.

Safeguards and Security (PBS: RL-0020)

Activities and Explanation of Changes

FY 2023 Enacted	FY 2024 Request	Explanation of Changes FY 2024 Request vs FY 2023 Enacted
\$103,950,000	\$100,666,000	-\$3,284,000

- | | | |
|--|--|---|
| <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 (e.g., Executive Order 14028, DOE O 205.1C, EM Cyber Security Program Plan), and Nuclear Material Control and Accountability. • Support Design Basis Threat, Cybersecurity (e.g., Executive Order 14028, DOE O 205.1C, EM Cyber Security Program Plan), and Industrial Controls activities to address evolving threats and requirements. | <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 (e.g., Executive Order 14028, DOE O 205.1C, EM Cyber Security Program Plan), and Nuclear Material Control and Accountability. • Support Design Basis Threat, Cybersecurity (e.g., Executive Order 14028, DOE O 205.1C, EM Cyber Security Program Plan), and Industrial Controls activities to address evolving threats and requirements. • Implement DOE O 205.1C and Executive Order 14028 requirements. | <ul style="list-style-type: none"> • No significant changes. |
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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 2023 Enacted	FY 2024 Request	Explanation of Changes FY 2024 Request vs FY 2023 Enacted
\$3,200,000	\$3,200,000	+\$0
<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"> 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 changes.

**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 2021 and FY 2022.

Total	Prior Years	FY 2022 Enacted	FY 2022 Actuals	FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 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)	78,954	20,235	17,215	16,231	8,768	32,700	+23,932
Total, Capital Operating Expenses	78,954	20,235	17,215	16,231	8,768	32,700	+23,932

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

Richland (Direct Funded)

L-707, Advanced Electrical Metering ^a	1,271	59	1,212	94	0	0	0
L-819, High Capacity Fiber Optic (300 Area Central Plateau) ^a	1,669	0	1,669	1,669	0	0	0
L-850, Replace 200W 1.1M Gallon PW Tank (DFLAW Priority) ^a	21,508	1,720	7,788	7,737	0	12,000	+12,000
L-894, Raw Water Cross Connection Isolation 200E/W ^a	7,485	7,089	396	329	0	0	0
L-895, Fire Protection Infrastructure for Plateau Raw Water ^a	19,264	8,945	3,888	4,298	2,769	2,700	+69
L-898, 100 Area Mission Critical Distribution Feeders Replacement ^a	18,000	3	923	823	0	18,000	+18,000
L-928 Reroute 12in Raw Water Line Near 241AP Farm ^a	2,944	0	468	410	2,476	0	-2,476
RF-003, Fleet Complex ^a	500	0	0	0	500	0	-500
Electric Vehicle Charging Stations ^a	2,000	0	0	0	2,000	0	-2,000
W-185 Integrated Disposal Facility Pad Construction	1,626	0	834	834	792	0	-792
W-190 Integrated Disposal Facility Modifications	2,687	2,419	37	37	231	0	-231
Total, Richland	78,954	20,235	17,215	16,231	8,768	32,700	+23,932

^a These capital investments represent expenditures that may be performed between FY 2023 and FY 2024 based on emerging risks.

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

Total	Prior Years	FY 2022 Enacted	FY 2022 Actuals	FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 Enacted
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18-D-404, Modification of Waste Encapsulation and Storage Facility (RL-0013C)

Total Estimate Cost (TEC)	35,800	32,700	0	0	3,100	0	-3,100
Other Project Costs (OPC)	12,500	4,500	8,000	3,234	0	0	0
Total Project Cost (TPC) 18-D-404	48,300	37,200	8,000	3,234	3,100	0	-3,100

22-D-401, Eastern Plateau Fire Station (formerly 400 Area Fire Station) (RL-0201)

Total Estimate Cost (TEC)	36,200	2,700	13,900	111	2,800	7,000	+4,200
Other Project Costs (OPC)	4,100	1,500	1,300	2	300	0	-300
Total Project Cost (TPC) 22-D-401^a	40,300	4,200	15,200	113	3,100	7,000	+3,900

22-D-402, 200 Area Central Plateau Water Treatment Facility (RL-0201)

Total Estimate Cost (TEC)	43,700	6,600	11,800	7,029	6,500	11,000	+4,500
Other Project Costs (OPC)	4,100	500	1,000	2,959	2,400	200	-2,200
Total Project Cost (TPC) 22-D-402^a	47,800	7,100	12,800	9,988	8,900	11,200	+2,300

23-D-404, 181D Export Water System Reconfiguration and Upgrade (RL-0201)

Total Estimate Cost (TEC)	65,530	100	0	1,900	6,450	26,999	+20,549
Other Project Costs (OPC)	4,350	1,200	0	800	320	150	-170
Total Project Cost (TPC) 23-D-404	69,880	1,300	0	2,700	6,770	27,149	+20,379

23-D-405, 181B Export Water System Reconfiguration and Upgrade (RL-0201)

Total Estimate Cost (TEC)	49,378	20	0	20	0	0	0
Other Project Costs (OPC)	3,442	700	0	300	480	462	-18
Total Project Cost (TPC) 23-D-404	52,820	720	0	320	480	462	-18

Environmental Management/
Richland

FY 2024 Congressional Justification

Total	Prior Years	FY 2022 Enacted	FY 2022 Actuals	FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 Enacted
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24-D-401, ERDF Supercell 11 Expansion Project (RL-0013C)

Total Estimate Cost (TEC)	TBD	0	0	0	0	1,000	+1,000
Other Project Costs (OPC)	TBD	0	0	0	0	0	0
Total Project Cost (TPC) 24-D-401	TBD	0	0	0	0	1,000	+1,000

^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 2024 Request for the Modification of Waste Encapsulation and Storage Facility is \$0.

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 2023 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 level 1 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	2/7/2018	2/7/2018	1/8/2021	6/17/2019	1/8/2021	3QFY2024	N/A
FY 2024 Request	11/5/2015	2/7/2018	2/7/2018	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.

**Environmental Management/
Richland/18-D-404 Modification of
Waste Encapsulation and Storage Facility,
Richland, WA (PBS RL-0013C)**

FY 2024 Congressional Justification

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
FY2024 Request	4,176	31,624	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" and "Office of Environmental Management Policy for Management of Capital Asset Projects

**Environmental Management/
Richland/18-D-404 Modification of
Waste Encapsulation and Storage Facility,
Richland, WA (PBS RL-0013C)**

with Total Project Costs (TPC) equal to or less than \$50 Million(M)”. The modifications are needed in order to remove the capsules from the Waste Encapsulation and Storage Facility pools for safety reasons.

KPP Description:

The WESF Modifications Project will provide changes to or new installation of utilities, equipment, instrumentation, and other support systems as defined within the project’s Functional Design Criteria to meet the operational interface and functional needs of the Cask Storage System equipment allowing eventual loading and transfer of Cesium and Strontium capsules.

Completion Metrics:

Metrics for completion of the WESF Modifications Project KPP:

1. Modifications to WESF have passed construction acceptance and functional testing requirements.
2. The specified Cask Storage System equipment interface needs have been met.

3. Financial Schedule

(Dollars in thousands)

Appropriations	Obligations	Costs
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Total Estimated Cost (TEC)

Design			
FY 2018	6,500	6,500	3,176
FY 2019	1,000	1,000	1,000
Total, Design	7,500	7,500	4,176

Construction			
FY 2020	10,200	10,200	1,832
FY 2021	15,000	15,000	7,987
FY 2022	0	0	11,615
FY 2023	3,100	3,100	7,920
FY 2024	0	0	2,270
Total, Construction	28,300	28,300	31,624

TEC

FY 2018	6,500	6,500	3,176
FY 2019	1,000	1,000	1,000
FY 2020	10,200	10,200	1,832
FY 2021	15,000	15,000	7,987
FY 2022	0	0	11,615
FY 2023	3,100	3,100	7,920
FY 2024	0	0	2,270
Total TEC	35,800	35,800	35,800

Other Project Cost (OPC)

OPC except D&D

FY 2017	2,000	2,000	226
FY 2018	500	500	583
FY 2019	2,000	2,000	633

**Environmental Management/
Richland/18-D-404 Modification of
Waste Encapsulation and Storage Facility,
Richland, WA (PBS RL-0013C)**

	(Dollars in thousands)		
	Appropriations	Obligations	Costs
FY 2020	0	0	992
FY 2021	0	0	962
FY 2022	8,000	8,000	3,234
FY 2023	0	0	2,594
FY 2024	0	0	3,276
Total OPC except D&D	12,500	12,500	12,500

Total Project Cost (TPC) (Line Item only)

FY 2017	2,000	2,000	226
FY 2018	7,000	7,000	3,759
FY 2019	3,000	3,000	1,633
FY 2020	10,200	10,200	2,824
FY 2021	15,000	15,000	8,949
FY 2022	8,000	8,000	14,849
FY 2023	3,100	3,100	10,514
FY 2024	0	0	5,546
	48,300	48,300	48,300

4. Details of Project Cost Estimate

	(Dollars in thousands)		
	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design			
Design	4,176	6,500	4,176
Contingency	0	1,000	0
Total, Design	4,176	7,500	4,176
Construction			
Equip/Construction	30,571	26,000	30,571
Contingency	1,053	2,300	1,053
Total, Construction	31,624	28,300	31,624
Total, TEC	35,800	35,800	35,800
Contingency, TEC	1,053	3,300	1,053
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Design	12,500	12,500	12,500
Support	0	0	0
Contingency	0	0	0

**Environmental Management/
Richland/18-D-404 Modification of
Waste Encapsulation and Storage Facility,
Richland, WA (PBS RL-0013C)**

Total, OPC	12,500	12,500	12,500
Contingency, OPC	0	0	0
Total, TPC	48,300	48,300	48,300
Total Contingency	1,053	3,300	1,053

5. Schedule of Appropriation Requests

		Prior Years	FY 2022	FY 2023	FY 2024	Out years	Total
FY 2018 Request	TEC	6,500				TBD	TBD
	OPC	2,500				TBD	TBD
	TPC	9,000				TBD	TBD
FY 2019 Request	TEC	7,500				TBD	TBD
	OPC	2,500				TBD	TBD
	TPC	10,000				TBD	TBD
FY 2020 Request	TEC	17,700				TBD	TBD
	OPC	4,500				TBD	TBD
	TPC	22,200				TBD	TBD
FY 2022* Request	TEC	32,700	0	3,100		0	35,800
	OPC	4,500	8,000	0		0	12,500
	TPC	37,200	8,000	3,100		0	48,300
FY 2023 Request	TEC	32,700	0	3,100		0	35,800
	OPC	4,500	8,000	0		0	12,500
	TPC	37,200	8,000	3,100		0	48,300
FY 2024 Request	TEC	32,700	0	3,100	0	0	35,800
	OPC	4,500	8,000	0	0	0	12,500
	TPC	37,200	8,000	3,100	0	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 2025
Expected Useful Life (number of years)	2.5 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 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, Eastern Plateau Fire Station (formerly 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:

The 22-D-401, 400 Area Fire Station was originally slated to replace the 300 Area fire station (Station 93), which is at the end of its life in the next 5 years. As the project progressed, the Richland Office continued to balance requirements, cost, schedule, and other factors to optimize the design, cost, and capabilities to satisfy the mission need. Two factors outside the project's control have contributed to the decision to reassess both siting and design for the new fire station: changing fire service needs, and market conditions.

In January 2012, when a technical evaluation of the Hanford Fire Department infrastructure was performed, it was anticipated that the Hanford Fire Department would continue to provide services to numerous facilities in the southern half of the site, including the 300 and 400 areas, for decades to come. However, Hanford Site needs, and conditions have subsequently changed. Currently, the DOE has successfully progressed the cleanup mission in the 300 Area, decommissioning and dismantling almost all of the structures, and turned over most operations and services in the area to the Pacific Northwest National Laboratory. Recently, the City of Richland has built two new fire stations: Station 73 on Jadwin Avenue and Station 75 on Battelle Boulevard. The city of Richland and the Pacific Northwest National Laboratory have initiated a service agreement that led to the Pacific Northwest National Laboratory contributing to the funding of the construction of Station 75. Station 75 addresses current and anticipated growth in north Richland, including the existing Pacific Northwest National Laboratory campus, Horn Rapids Industrial Park, the additional acres acquired by the DOE Land Transfer, and the continued residential development in North Richland. The remaining facilities in the southern half of the site, including Hazardous Materials Management and Emergency Response, Patrol Training Academy, Fast Flux Test Facility, Energy Northwest Power Generation Station, and the Laser Interferometer Gravitational-Wave Observatory, continue to be served by the Hanford Fire Department. The Hazardous Materials Management and Emergency Response and the Patrol Training Academy are low hazard facilities and could be served by City of Richland Fire Department for emergency and fire response. While no work is anticipated at Fast Flux Test Facility in the next decade, the Hanford Fire Department is anticipated to continue to provide coverage to the Fast Flux Test Facility, Energy Northwest, and Laser Interferometer Gravitational-Wave Observatory. For decades the Hanford cleanup mission will focus on the 200 Area plateau. Therefore, a decision has been made to relocate the new fire station from the 400 Area to the Hanford Plateau.

When bids for 22-D-401, 400 Area Fire Station project were received, rapidly changing market conditions heavily influenced the project cost to an estimated 38% above the \$22,500,000 authorized Total Project Cost (February 2021).

Line-Item funding is requested for the Eastern Plateau Fire Station to facilitate construction. The new fire station will allow consolidation of several facilities into a new facility to be built in the Eastern Plateau of the Hanford Site. The facility will provide space to store and maintain eight emergency vehicles and provide administrative facilities for 24 hours a day, 7 days a week operation of the facilities for up to 12 individuals. This Construction Project Data Sheet is an update of the FY 2023 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 fiscal year (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 estimate has increased. The Total Project Cost for the fire station exceeded the minor construction threshold of \$20,000,000 (50 USC 2743), which requires specific authorization and management as a

line-item Project, before the increase to \$25,000,000. This project will be executed consistent with DOE Order 413.3B, *Program and Project Management for the Acquisition of Capital Assets*.

Summary:

This is an update to the Construction Project Data Sheet for this Project. The FY 2024 Budget Request is \$7,000,000 – with TEC at \$7,000,000 and OPC at \$0. The FY 2024 Budget Request will be primarily used to complete reperforming preliminary/final design activities. Approval of Critical Decision 0, “Approve Mission Need” was received on February 22, 2021, with an upper end of the cost range of \$22,500,000 and a completion date of 2024. The FY 2022 Budget Request was \$15,200,000. The FY 2023 Budget Request was \$3,100,000. The current estimated Total Project Cost is \$40,300,000 with a completion date of 2027.

This Construction Project Data Sheet includes actual costs of \$4,200,000 for work performed through FY 2022 actuals, which combined with the requested Line-Item funding to equal the Total Project Cost of \$40,300,000 (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 review and approval of combined Critical Decision-2, “Approve Performance Baseline” and Critical Decision-3, “Approve Start of Construction”. Approval of Critical Decision-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. A Level I Federal Project Director is being formally mentored by a Level II Federal Project Director to allow for the required management of the project.

Significant Changes:

The Background section of the Project Data Sheet describes the significant change since last submission of a Project Data Sheet for 22-D-401.

The estimated Total Project Cost has increased from \$29,500,000 to \$40,300,000 due to economic inflation, risk realized from the services and commodities market and to relocate the fire station on the Eastern Plateau rather than the 400 Area.

Critical Decision History

(Fiscal quarter or date)

Fiscal Year (FY)	CD-0	Conceptual Design Complete	CD-1	CD-1R	CD-2	Final Design Complete	CD-2/3	CD-4	D&D Complete
FY 2022	N/A	April 2019	N/A	N/A	N/A	9/17/20	3QFY2021	4QFY2024	N/A
FY 2023	2/22/21	April 2019	N/A	N/A	2QFY2023	9/17/20	2QFY2023	4QFY2024	N/A
FY 2024	2/22/21	April 2019	N/A	2QFY2023	3QFY2025	2QFY2024	3QFY2025	4QFY2027	N/A

CD-0 – Approve Mission Need.

CD-1 – Approve Alternative Selection and Cost Range.

CD-1R – Approve Alternative Selection and Cost Range (Revision).

CD-2 – Approve Performance Baseline.

CD-3 – Approve Start of Construction.

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

**Environmental Management/
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Fire Station, Richland, WA**

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 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
FY 2024 Request	700	35,750	36,450	3,850	N/A	3,850	40,300

2. Project Scope and Justification

Scope:

The scope of the Eastern Plateau Fire Station Project includes the planning, design, construction, testing, commissioning, and readiness for a new station. The new fire station will accommodate 24 hours a day, 7 days a week 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, 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.
- Potential day shift functional space. This space will include day-shift administrative offices, a combined training and conference area, and bathrooms reviewed for compliance with the Americans 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).
- Access to Hanford Site roads and parking to accommodate staff members' privately owned vehicles.

Justification:

The Eastern Plateau 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, and building electrical circuits are failing and additional failures may render the facility uninhabitable. Alarm systems are becoming unreliable to the extent that firefighters occasionally 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 substantially improved alarm response time. 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 Eastern Plateau 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

Financial Schedule

		(Dollars in Thousands)		
		Appropriations ¹	Obligations	Costs
Total Estimated Cost (TEC)				
Design				
	FY 2021	200	200	200
	FY 2024	500	500	500
	Total, Design	700	700	700
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
	FY 2024	6,500	6,500	6,500
	FY 2025	6,050	6,050	6,050
	FY 2026	3,750	3,750	3,750
	Total, Construction	35,500	35,500	35,500
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
	FY 2024	7,000	7,000	7,000
	FY 2025	6,050	6,050	6,050
	FY 2026	3,750	3,750	3,750
	Total TEC	36,200	36,200	36,200

(Dollars in Thousands)			
	Appropriations ¹	Obligations	Costs
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
FY 2024	0	0	0
FY 2025	750	750	750
FY 2026	250	250	250
Total OPC except D&D	4,100	4,100	4,100
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
FY 2024	7,000	7,000	7,000
FY 2025	6,800	6,800	6,800
FY 2026	4,000	4,000	4,000
Total	40,300	40,300	40,300

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	700	200	Not Applicable
Contingency	0	0	Not Applicable
Total, Design	700	200	Not Applicable
Construction	31,500	19,200	Not Applicable
Contingency	4,000	0	Not Applicable
Total, Construction	35,500	19,200	Not Applicable
Total Estimated Cost	36,200	19,400	Not Applicable
<i>Contingency, Total Estimated Cost</i>	<i>4,000</i>	<i>0</i>	Not Applicable
Other Project Cost			
Other Project Cost (except D&D)	500	200	Not Applicable
Design	1,800	1,300	Not Applicable
Contingency	1,800	1,600	Not Applicable
Total, OPC	4,100	3,100	Not Applicable
<i>Contingency, OPC</i>	<i>1,800</i>	<i>1,600</i>	Not Applicable

(Dollars in Thousands)

Current Total Estimate	Previous Total Estimate	Original Validated Baseline
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Total, TPC	40,300	22,500	Not Applicable
Total Contingency	5,800	1,600	Not Applicable

5. Schedule of Appropriation Requests

		Prior Years	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	Total
FY 2022 Request	TEC	2,500	13,900	2,800	0	0	0	19,200
	OPC	1,700	1,300	300	0	0	0	3,300
	TPC	4,200	15,200	3,100	0	0	0	22,500
FY 2023 Request	TEC	2,500	13,900	2,800	0	0	0	19,200
	OPC	1,700	1,300	300	0	0	0	3,300
	TPC	4,200	15,200	3,100	0	0	0	22,500
FY 2024 Request	TEC	2,700	13,900	2,800	7,000	6,050	3,750	36,200
	OPC	1,500	1,300	300	0	750	250	4,100
	TPC	4,200	15,200	3,100	7,000	6,800	4,000	40,300

- 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)	4QFY2027
Expected Useful Life (number of years)	30 years
Expected Future Start of D&D of this capital asset (fiscal quarter)	4QFY2057

(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 Eastern Plateau Fire Station, it will be turned over to another Hanford Contactor for deactivation and decommissioning. Identification 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 prior 400 Area Fire Station scope has been completed, approved, and issued. Relocation for the Eastern Plateau Fire Station scope will require redesign.
2. Subcontracting strategies for any other services will be determined based on the circumstances and work scope of each critical decision.

22-D-402, 200 Area 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 Project was a Minor construction Project that the Total Estimated Cost has now exceeded the Minor construction Project threshold of \$25,000,000. 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 facilities supporting the Direct-Feed Low-Activity Waste approach to the vitrification of low-activity tank waste. This Construction Project Data Sheet is an update of the FY 2023 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 due to a combination of pandemic impacts to labor and commodities costs as well as substantiated subcontractor claims. Based on recent estimations, the Total Project Cost for the water treatment facility exceeded the minor construction threshold of 50 USC 2743 (previously \$20,000,000; now \$25,000,000), which requires specific authorization and management as a line-item Project. This Project will be executed consistent with DOE Order 413.3B, "Program and Project Management for the Acquisition of Capital Assets."

Summary:

The FY 2024 Budget Request is \$19,000,000. 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 \$19,000,000 in FY 2024 to equal the Total Project Cost of \$47,800,000 (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 was baselined as a Capital Asset Line-Item Project as part of review and

approval of combined Critical Decisions 2, “Approve Performance Baseline” and Critical Decision 3, “Approve Start of Construction.” Critical Decision 2/3 approval received on September 14, 2021.

A Level II Federal Project Director 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 \$40,000,000 to \$47,800,00 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	N/A - See Note below	4/16/2018	N/A - See Note below		4/09/2020	9/14/2021	3QFY2024	N/A
FY 2023	2/22/2021	4/16/2018	N/A - See Note below	9/14/2021	4/09/2020	9/14/2021	3QFY2024	N/A
FY 2024	2/22/2021	4/16/2018	N/A - See Note below	9/14/2021	4/09/2020	9/14/2021	3QFY2025	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 Office of Environmental Management Principal Deputy Assistant Secretary (EM-2) approval of Critical Decision 0, “Approve 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 Critical Decision 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

	(Dollars in thousands)						
	TEC, Design	TEC, Construction	TEC, Total	OPC, Except D&D	OPC, D&D	OPC, Total	TPC
FY 2022 Request	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
FY 2024 Request	3,300	40,400	43,700	4,100	N/A	4,100	47,800

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.

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 commensurate with increased operation of Waste Treatment and Immobilization Plant’s Low-Activity Waste Vitrification Facility for the Direct-Feed Low-Activity Waste program. 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
FY 2025	7,800	7,800	7,800
Total, Construction	40,400	40,400	40,400
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
FY 2025	7,800	7,800	7,800
Total TEC	43,700	43,700	43,700
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

	(Dollars in thousands)		
	Appropriations ¹	Obligations	Costs
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	1,350	1,350
FY 2021	3,750	3,750	3,750
FY 2022	12,800	12,800	12,800
FY 2023	8,900	8,900	8,900
FY 2024	11,200	11,200	11,200
FY 2025	7,800	7,800	7,800
	47,800	47,800	47,800

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	3,300	3,300
Contingency	0	0	0
Total, Design	3,300	3,300	3,300
Construction	36,100	28,300	28,300
Contingency	4,300	4,300	4,300
Total, Construction	40,400	32,600	32,600
Total, TEC	43,700	35,900	35,900
Contingency, TEC	4,300	4,300	4,300
Other Project Cost (OPC)			
OPC except D&D	3,900	3,900	3,900
Design	0	0	0
Contingency	200	200	200
Total, OPC	4,100	4,100	4,100
Contingency, OPC	200	200	200
Total, TPC	47,800	40,000	40,000
Total Contingency	4,500	4,500	4,500

5. Schedule of Appropriation Requests

		Prior Years	FY 2022	FY 2023	FY 2024	FY 2025	Total
FY 2022 Request	TEC	11,000	7,800	0	3,400	0	22,200
	OPC	3,300	5,000	0	1,500	0	9,800
	TPC	14,300	12,800	0	4,900	0	32,000
FY 2023 Request	TEC	6,600	11,800	6,500	11,000	0	35,900
	OPC	500	1,000	2,400	200	0	4,100
	TPC	7,100	12,800	8,900	11,200	0	40,000
FY 2024 Request	TEC	6,600	11,800	6,500	11,000	7,800	43,700
	OPC	500	1,000	2,400	200	0	4,100
	TPC	7,100	12,800	8,900	11,200	7,800	47,800

- 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) 3rd Quarter FY 2024 (90% confidence/risk informed)
 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	104,500
Utilities	N/A	36	N/A	1,967
Maintenance & Repair	364	383	18,200	19,150
Total (See Note 1)	2,454	2,509	122,700	125,617

Note 1: 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 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 an update to the Fiscal Year (FY) 2023 Budget Request submission 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 will be a Line-Item for which authorization is needed and expected to be granted in FY 2023. 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 Line-Item funding for FY 2024. The projected Total Project Cost will capture all costs, including those expended since 2019. This project is for the replacement of the deteriorating 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 and Immobilization 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 and 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 the Project. At that time the project underwent a Capital 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 project would be a Minor Construction Project.

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 Export Water System Reconfiguration and Upgrade now exceeds \$50,000,000. The project will be executed as defined, per DOE Order 413.3B, "Program and Project Management for the Acquisition of Capital Assets."

Summary:

This is an update to the Construction Project Data Sheet for this Project. The FY 2024 Budget Request is \$27,149,000. The Total Project Cost is \$69,880,000 (90% Confidence). Approval of Critical Decision 1, "Approve Alternative Selection and Cost Range" was received on March 22, 2022.

A Federal Project Director at Level II 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:

This Construction Project Data Sheet is an update and does not represent a new start for FY 2024. This project was previously initiated as a Minor Construction Project but has experienced growth in the Total Estimate Cost and Total Project Cost and will now be managed as a Capital Asset Line-Item Project per the requirements of DOE 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	3/25/2021	3/22/2022	Q4FY2022	Q2FY2023	Q4FY2027	TBD
FY 2024 Request	01/12/2022	3/25/2021	3/22/2022	Q1FY2023	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)

	TEC, Design ¹	TEC, Construction	TEC, Total	OPC, Except D&D	OPC, D&D	OPC, Total	TPC
FY 2023 Request	2,000	60,150	62,150	3,850	N/A	3,850	66,000
FY 2024 Request	2,000	63,530	65,530	4,350	N/A	4,350	69,880

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.

- The project will replace the degraded vertical turbine pumping system currently installed in the 181D 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.
 - 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 National Fire Protection Association 70 National Electrical Code 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

- 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.

The project 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 Columbia 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, 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 reconfigured and upgraded 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	26,999	26,999	26,999
FY 2025	14,986	14,986	14,986
FY 2026	7,278	7,278	7,278
FY 2027	7,817	7,817	7,817
Total Construction	63,530	63,530	63,530
TEC Total			
FY 2021	100	100	100

	Dollars in Thousands		
	Appropriations ¹	Obligations	Costs
FY 2022	1,900	1,900	1,900
FY 2023	6,450	6,450	6,450
FY 2024	26,999	26,999	26,999
FY 2025	14,986	14,986	14,986
FY 2026	7,278	7,278	7,278
FY 2027	7,817	7,817	7,817
Total TEC	65,530	65,530	65,530
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
FY 2027	500	500	500
Total OPC	4,350	4,350	4,350
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	27,149	27,149	27,149
FY 2025	15,886	15,886	15,886
FY 2026	7,878	7,878	7,878
FY 2027	8,317	8,317	8,317
Total TPC	69,880	69,880	69,880
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	2,000	Not Applicable
Contingency	0	0	Not Applicable
Total, Design	2,000	2,000	Not Applicable
Construction	58,930	55,550	Not Applicable
Contingency	4,600	4,600	Not Applicable
Total, Construction	63,530	60,150	Not Applicable
Total TEC	65,530	62,150	Not Applicable
Contingency, TEC	4,600	4,600	Not Applicable
Other Project Cost (OPC)			
OPC, except D&D	2,850	2,350	Not Applicable
Conceptual Design	1,200	1,200	Not Applicable
Contingency	300	300	Not Applicable
Total, OPC	4,350	3,850	Not Applicable
Contingency OPC	300	300	Not Applicable
Total TPC	69,880	66,000	Not Applicable
Total Contingency	4,900	4,900	Not Applicable

7. Schedule of Appropriation Requests

		Prior Years	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Total
FY 2023 Request	TEC	100	1,900	6,450	36,300	17,400	0	0	62,150
	OPC	1,200	680	320	150	900	600	0	3,850
	TPC	1,300	2,580	6,770	36,450	18,300	600	0	66,000
FY 2024 Request	TEC	100	1,900	6,450	26,999	14,986	7,278	7,817	65,530
	OPC	1,200	680	320	150	900	600	500	4,350
	TPC	1,300	2,580	6,770	27,149	15,886	7,878	8,317	69,880

- 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 Decontamination and Decommissioning. 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's estimate.

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 is an update to the Project Data Sheet (PDS) 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 Fiscal Year (FY) 2024 funding. Line-Item authorization to proceed is expected to be granted in FY 2023. 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 deteriorating 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 the project. 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 project would be a Minor Construction Project.

The Total Estimated Cost rough order of magnitude estimate has increased as the Project design 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). Based on recent estimations, the rough order of magnitude estimate for the 181B Export Water System Reconfiguration and Upgrade now exceeds \$50,000,000 in Total Estimated Cost and Total Project Cost. This project will be managed as a Capital Asset Line Item and in accordance with the DOE Order 413.3B.

Summary:

This is an update to the Project Data Sheet for this Project. This Project Data Sheet includes actual costs of \$720,000 for work performed to through 9/30/21 and \$1,100,000 planned in FY 2022. The FY 2024 request is \$462,000 of Other Project Costs. The ROM for this project is \$52,820,000. CD-1 Approval was received on 3/22/22.

A Federal Project Director at Level II 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 update and does not represent a new start for the budget year 2024. 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	N/A
FY 2024 Request	01/12/2022	5/25/21	3/22/2022	Q4FY2022	Q3FY2023	Q3FY2030	N/A

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)

	TEC, Design	TEC, Construction	TEC, Total	OPC, Except D&D	OPC, D&D	OPC, Total	TPC
FY 2023 Request	2,100	46,400	48,500	2,500	N/A	2,500	51,000
FY 2024 Request	1,120	48,258	49,378	3,442	N/A	3,442	52,820

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.

The project will upgrade the degraded 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.

The project 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 reconfigured and upgraded 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	0	0	0
Total Design	1,120	1,120	1,120
Construction			
FY 2025	1,168	1,168	1,168
FY 2026	30,691	30,691	30,691
FY 2027	16,054	16,054	16,054
FY 2028	345	345	345
Total Construction	48,258	48,258	48,258
TEC Total			
FY 2021	20	20	20
FY 2022	1,100	1,100	1,100
FY 2023	0	0	0
FY 2025	1,168	1,168	1,168
FY 2026	30,691	30,691	30,691
FY 2027	16,054	16,054	16,054
FY 2028	345	345	345
Total TEC	49,378	49,378	49,378
Other Project Cost (OPC)			
FY 2019	300	300	300
FY 2020	100	100	100

FY 2021	300	300	300
FY 2023	480	480	480
FY 2024	462	462	462
FY 2027	400	400	400
FY 2028	1,400	1,400	1,400
Total OPC	3,442	3,442	3,442
Total Project Cost (TPC)			
FY 2019	300	300	300
FY 2020	100	100	100
FY 2021	320	320	320
FY 2022	1,100	1,100	1,100
FY 2023	480	480	480
FY 2024	462	462	462
FY 2025	1,168	1,168	1,168
FY 2026	30,691	30,691	30,691
FY 2027	16,454	16,454	16,454
FY 2028	1,745	1,745	1,745
Total TPC	52,820	52,820	52,820
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	1,120	2,100	Not Applicable
Contingency	0	0	Not Applicable
Total, Design	1,120	2,100	Not Applicable
Construction	44,858	43,000	Not Applicable
Contingency	3,400	3,400	Not Applicable
Total, Construction	48,258	46,400	Not Applicable
Total TEC	49,378	48,500	Not Applicable
Other Project Cost (OPC)			
OPC, except D&D	2,542	1,600	Not Applicable
Conceptual Design	700	700	Not Applicable
Contingency	200	200	Not Applicable
Total, OPC	3,442	2,500	Not Applicable
Total TPC	52,820	51,000	Not Applicable

7. Schedule of Appropriation Requests

		Prior Years	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	Total
FY 2023 Request	TEC	20	1,100	686	294	2,300	12,700	31,400	0	48,500
	OPC	700	0	0	0	0	0	1,800	0	2,500
	TPC	720	1,100	686	294	2,300	12,700	33,200	0	51,000
FY 2024 Request	TEC	20	1,100	0	0	1,168	30,691	16,054	345	49,378
	OPC	700	0	480	462	0	0	400	1,400	3,442
	TPC	720	1,100	480	462	1,168	30,691	16,454	1,745	52,820

- Note 1: FY 2019 – FY 2023 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)	\$1.625M	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.

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.

**24-D-401 Environmental Restoration Disposal Facility Supercell 11 Construction Project
Hanford, Richland, WA
Project is for Design and Construction**

1. Summary, Significant Changes and Schedule and Cost History

Summary:

This Project Data Sheet is the initial submittal for the Environmental Restoration Disposal Facility Supercell 11 project. This is at the Environmental Restoration Disposal facility at Hanford, Washington. The Critical Decision – 0 has been signed and approved on November 18, 2022. The project performance baseline will be established upon approval of Critical Decision-2. Cost is based on the escalated cost of design and construction of the completed Environmental Restoration Disposal Facility Supercell 10, which will be used as the design of supercell 11 and is subject to change.

The Environmental Restoration Disposal Facility is the designated disposal low-level radioactive landfill site at Hanford. DOE-Richland is responsible for the safe, compliant, and cost-effective disposal of contaminated soil and debris from site remediation. The Environmental Restoration Disposal Facility provides this capability but is approaching its disposal limit. Current capacity is 21,000,000 tons. Once that limit is reached, Environmental Restoration Disposal Facility will no longer be able to accept waste for final disposal. The Environmental Restoration Disposal Facility was designed with expansion capability of nearly three times its current size. The Environmental Restoration Disposal Facility currently has 8 cells and 2 supercells for disposal operations. (A supercell is simply two side-by-side cells.) Construction of supercell 11 will result in a total of 8 cells and 3 supercells with additional vertical expansion capacity. The design of supercell 11 will be the same as supercell 10, which was constructed in the early 2000’s. Because the design is the same, an alternatives analysis will not be conducted as part of Critical Decision-1. A combined Critical Decision-2 and Critical Decision-3 will then be pursued. The Environmental Restoration Disposal Facility environmental regulatory licenses will be revised to include the new supercell in conjunction with design/construction.

A Federal Project Director at the appropriate level will be assigned to this project upon Critical Decision-1 approval. This Project Data Sheet is new for the design and construction funding.

Line Item funding of \$1,000,000 is being requested in FY 2024 for supercell 11 design activities. These funds will be used for adaptation of the design from previous supercell projects to this planned location.

This is a new start in FY 2024 with a Total Project Cost range of \$48,000,000 to \$61,000,000. This project is being managed under DOE 413.3B.

Significant Changes:

Line Item funding is being requested for the design of a new “supercell” at the Environmental Restoration Disposal Facility.

Critical Milestone History

Fiscal Year (FY)	CD-0	Conceptual Design Complete	CD-1	Final Design Complete	CD-2/3	CD-4	D&D Complete
FY2024 Request ¹	11/18/2022	N/a	4Q2023	4Q2024	TBD	TBD	N/A

CD-0 –Mission Need approved

CD-1 – Approve Alternative Selection and Cost Range.

¹ This project is pre-CD-2, and the costs are estimates based on supercell 10 and are consistent with the high end of the CD-0 ranges. Construction funds will not be executed without appropriate CD approvals.

- CD-2 – Approve Performance Baseline.
- CD-3 – Approve Start of Construction.
- CD-4 – Approve Start of Operations or Project Completion
- D&D Complete – Completion of D&D work

Notes:

No construction excluding approved long-lead procurement will be performed until Critical Decision-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 2024	1,000	TBD	TBD	1,000	0	1,000	TBD

2. Project Scope and Justification

Scope:

Mission Need Statement for the Environmental Restoration Disposal Facility Supercell 11 Construction Project established that acquisition and implementation of a new disposal cell is needed to align with the Hanford Site cleanup goals described in DOE/RL-2009-10, *Hanford Site Cleanup Completion Framework*. This disposal capability will be necessary to support ongoing Hanford cleanup work. The Critical Decision-0 was approved November 18, 2022, with a cost range of \$48,000,000 to \$61,000,000.

In the 1990's a large waste disposal site was constructed in the west side of the Hanford site--the Environmental Restoration Disposal Facility. The Environmental Restoration Disposal Facility is a direct buried Comprehensive Environmental Response, Compensation, and Liability Act landfill that receives waste from Hanford for final disposal. The Environmental Restoration Disposal Facility accepts low-level radioactive waste and mixed low-level radioactive waste for final disposal by burial. The Environmental Restoration Disposal Facility can hold up to 21,000,000 tons of waste material, and currently holds approximately 19,000,000 tons of waste and thus is nearing capacity. Additional waste is expected to be received from the 100 K Area, various demolition activities in the 200 East and West areas of Hanford, and the 300 Area demolition of the 324 Building. The Environmental Restoration Disposal Facility is a radiological facility (< hazard category 3).

The scope of the Environmental Restoration Disposal Facility Supercell 11 Construction Project consists of the following:

- Adaptation of supercell 10 design for new site.
- Construct supercell 11.
- Project and construction management, preparation of any required regulatory documents/permits and safety review, equipment testing and system startup.

As the design of supercell 10 will be utilized for supercell 11, an alternatives analysis will not be conducted as part of Critical Decision 1. Next, a combined Critical Decision-2 and Critical Decision-3 will be pursued.

Justification:

The Hanford Site needs to continue to provide safe, compliant, and cost-effective disposal of low-level non-transuranic radioactive waste and mixed low-level radioactive waste. The designated disposal site, the Environmental Restoration Disposal Facility, is approaching its disposal limit of 21,000,000 tons of waste. Capability to continue to receive waste for disposal will be necessary through the remainder of demolition and environmental remediation work performed at Hanford. Additional capacity for waste disposal will be required by the mid-2020's.

**Environmental Management/
Richland/24-D-401 Environmental Restoration
Disposal Facility Supercell 11 Construction Project
Hanford, Richland, WA (PBS RL-0201)**

**3. Project Cost and Schedule
Financial Schedule**

(dollars in thousands)

	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
Design			
FY 2024	1,000	1,000	1,000
Total, Design	1,000	1,000	1,000
Construction			
Outyears	TBD	TBD	TBD
Total, Construction	TBD	TBD	TBD
TEC			
FY 2024	1,000	1,000	1,000
Outyears	TBD	TBD	TBD
Total TEC	TBD	TBD	TBD
Other Project Cost (OPC)			
OPC except D&D			
Outyears	TBD	TBD	TBD
Total OPC except D&D	TBD	TBD	TBD
Total Project Cost (TPC) (Line Item only)			
FY 2024	1,000	1,000	1,000
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	1,000	N/A	N/A
Contingency	0	N/A	N/A
Total, Design	1,000	N/A	N/A
Construction			
Equip/Construction	TBD	N/A	N/A
Contingency	0	N/A	N/A
Total, Construction	TBD	N/A	N/A
Total, TEC	TBD	N/A	N/A
Contingency, TEC	0	N/A	N/A
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Design	0	N/A	N/A
Support	TBD	N/A	N/A
Contingency	0	N/A	N/A
Total, OPC	TBD	N/A	N/A
Contingency, OPC	0	N/A	N/A
Total, TPC	TBD	N/A	N/A
Total Contingency	0	N/A	N/A

5. Schedule of Appropriation Requests

		(\$K)					
		Prior Years	FY2024	Outyears			Total
FY 2024 Request	TEC	0	1,000	TBD			TBD
	OPC	0	0	TBD			TBD
	TPC	0	1,000	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) N/A

None is included in Line Item request.

(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	N/A	N/A	N/A	N/A
Utilities	N/A	N/A	N/A	N/A
Maintenance & Repair	N/A	N/A	N/A	N/A
Total	N/A	N/A	N/A	N/A

- The operations and maintenance costs will be captured in the overall Environmental Restoration Disposal Facility operation and maintenance costs which includes several cells – the operation and maintenance costs are not broken out by cell.
- Operations costs for the Environmental Restoration Disposal Facility vary depending on volumes of waste disposed. Operational costs do not go up because we construct a new cell. There may be de minimis increases in utility costs and maintenance of any new electrical/mechanical equipment.

7. D&D Information

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 existing central plateau cleanup 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 using the design of supercell 10. This will also provide efficient use of engineering resources.

The central plateau 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 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 central plateau cleanup contractor as needed to provide best value to the government. Subcontracting strategies for these services are to 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 retrieval has been completed in 18 tanks with three in progress.

The Department is committed to treating all Hanford tank waste safely and effectively. The Department is on track to initiate tank waste treatment via the Direct-Feed Low-Activity Waste approach no later than 2025, which aligns with the Amended Consent Decree and Tri-Party Agreement. 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 Waste Treatment and Immobilization Plant's Low-Activity Waste Vitrification Facility using a Tank-Side Cesium Removal 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 \$158,476,000 in fiscal year (FY) 2024.

Highlights of the FY 2024 Budget Request

The Office of River Protection FY 2024 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 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. The work at the Waste Treatment and Immobilization Plant's High-Level Waste Vitrification Facility will also continue to advance facility design and construction for those systems at 90% design complete.

Funding is also requested for the following capital projects:

- 15-D-409, Low-Activity Waste Pretreatment System, to support construction of the Advanced Modular Pretreatment System (15-D-409-02). The Advanced Modular Pretreatment System is a follow-on tank waste pretreatment capability to the Tank-Side Cesium Removal Demonstration Subproject (15-D-409-01), which began operations in January 2022.
- 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 2023 & FY 2024 Key Milestones

The following listing represents key milestones included in the Tri-Party Agreement and the Amended Consent Decree for performance in fiscal years 2023 and 2024.

- (October 2022) M-062-40I; Select a Minimum of 3 Scenarios
- (January 2023) 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 Five. ¹
- (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.
- (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-062-21; Annually Submit Data Which Demonstrates Operation of Waste Treatment Plant at a Rate Sufficient to Meet M-062-00.
- (September 2023) M-045-91E5; Provide Single Shell Tanks Farms Dome Deflection Surveys Every Two Years to Ecology.
- (September 2023) M-045-91K; Complete Initial Baseline Visual Inspections of All Single Shell Tanks.
- (October 2023) M-062-40J; Submit System Plan to Ecology.
- (October 2023) M-045-92AG; Submit Yearly Reports Summarizing the Results of Maintenance and Performance Monitoring Activities.
- (October 2023) M-045-92AB; Complete Construction of Barrier Four in 241-U Farm.
- (October 2023) M-045-92; Complete Installation of 4 Additional Interim Barriers.
- (December 2023) M-062-56; Submit Permit Application for Design and Construction of the Low Activity Waste Pretreatment Capability.
- (March 2024) M-045-91K-T01; Submit Report of the Initial Baseline Visual Inspection of All Single Shell Tanks Remaining to be Inspected.
- (August 2024) M-062-21A; Annually Submit Data Which Demonstrates Operation of Waste Treatment Plant at a Rate Sufficient to Meet M-062-00.
- (August 2024) D-00A-08; Start Low-Activity Waste Facility Cold Commissioning.¹

¹ 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. The force majeure per Consent Decree approved approach was amended by the court on July 18, 2022, adding 579 days to the milestones.

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) which pushed out the hot commissioning of Waste Treatment and Immobilization Plant's Low Activity Waste Vitrification Facility by three years to 2023 and High-Level Waste Vitrification Facility hot commissioning by 14 years to 2033; and Waste Treatment and Immobilization Plant initial operations by 14 years to 2036.

In December 2020, the U.S. District Court Eastern District of Washington issued an order modifying amended Consent Decree 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. In July 2022, the United States District Court, Eastern District of Washington issued an order modifying the Amended Consent Decree on the basis that COVID-19 constitutes a force majeure event. The order established an extension of the B-2, B-3, A-7, A-8, and A-9 milestones in order to offset work interruptions due to COVID-19.

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 Vitrification 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 June 22, 2023.
- 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 (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 approach to the near-term vitrification of low-activity tank waste. To that end, the Department is continuing to advance startup and commissioning of Waste Treatment and Immobilization Plant's Low-Activity Waste Vitrification Facility, along with the Effluent Management Facility, Balance of Facilities and Analytical Laboratory.

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 Vitrification Facility, and the Pretreatment Facility, will be isolated from the operational facilities and will continue preservation maintenance activities. High-Level Waste Vitrification Facility is also advancing design, reinitiating procurement support and initial planning to restart construction activities.

The Department is in the process of finalizing the High-Level Waste Analysis of Alternatives that will be used to support decisions on the optimal approach to take on the high-level waste portion of the Hanford tank waste inventory. Meanwhile, the Department continues to work closely with the State of Washington on options to safely and effectively retrieve high-level liquid waste from the tanks.

River Protection

Funding (\$K)

	FY 2022 Enacted	FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 Enacted	FY 2024 Request vs FY 2023 Enacted (%)
Defense Environmental Cleanup					
Office of River Protection					
ORP Low-Level Waste Offsite Disposal					
ORP-0014A / Low-Level Waste Offsite Disposal	7,000	0	0	+0	+0%
Tank Farm Activities					
ORP-0014 / Radioactive Liquid Tank Waste Stabilization and Disposition					
Operating	837,642	851,100	813,625	-37,475	-4%
Construction					
15-D-409: Low Activity Waste Pretreatment System, Hanford (ORP-0014)	0	0	60,000	+60,000	+100%
23-D-403: Hanford 200 West Area Tank Farms Risk Management Project (ORP-0014)	0	4,408	15,309	+10,901	+247%
	837,642	855,508	888,934	+33,426	+4%
Waste Treatment and Immobilization Plant					
ORP-0060 / Major Construction-Waste Treatment Plant					
Construction					
01-D-16D: High Level Waste Facility	144,358	392,200	600,000	+207,800	+53%
01-D-16E: Pretreatment Facility	20,000	20,000	20,000	+0	+0%
18-D-16: Waste Treatment and Immobilization Plant LBL/Direct Feed LAW	586,000	412,700	0	-412,700	-100%
ORP-0070 / Waste Treatment Plant Commissioning	50,000	50,000	466,000	+416,000	+832%
Subtotal, Waste Treatment and Immobilization Plant	800,358	874,900	1,086,000	+211,100	+24%
Total, Office of River Protection	1,645,000	1,730,408	1,974,934	+244,526	+14%

**River Protection
Explanation of Major Changes (\$K)**

	FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 Enacted
Defense Environmental Cleanup			
Office of River Protection			
Tank Farm Activities			
ORP-0014 / Radioactive Liquid Tank Waste Stabilization and Disposition			
<ul style="list-style-type: none"> The increase is primarily attributed to design and construction activities associated with the Advanced Modular Pretreatment System (15-D-409-02) and the 200 West Area Risk Management Project (23-D-403). 	855,508	888,934	+33,426
Waste Treatment and Immobilization Plant			
ORP-0060 / Major Construction-Waste Treatment Plant			
<ul style="list-style-type: none"> The decrease is primarily attributed to the completion of the Direct-Feed Low-Activity Waste segment. 	824,900	620,000	-204,900
ORP-0070 / Waste Treatment Plant Commissioning			
<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. 	50,000	466,000	+416,000
Total, River Protection	1,730,408	1,974,934	+244,526

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 retrieval has been completed in 18 tanks with three in progress, including six tanks that were assumed to have leaked. Ultimately, most 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 milestone date of August 1, 2025, for startup of the Low-Activity Waste Vitrification Facility as reflected in the 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 2023 Enacted	FY 2024 Request	Explanation of Changes FY 2024 Request vs FY 2023 Enacted
\$855,508,000	\$888,934,000	+\$33,426,000
<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 facility including auxiliary buildings. Major planned 	<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 facility including auxiliary buildings. 	<ul style="list-style-type: none"> The increase is primarily attributed to design and construction activities associated with the Advanced Modular Pretreatment System (15-D-409-02) and the 200 West Area Risk Management Project (23-D-403).

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 Tank AP-106 for Direct-Feed Low-Activity Waste strategy.

Waste Feed Delivery

- Complete AP Tank Farm electrical infrastructure maintenance to support Direct-Feed Low-Activity Waste operations.
- Conduct maintenance activities in AW Tank 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

- Maintain functionality of critical facilities and

Tank-Side Cesium Removal Operations

- Procure and fabricate 20 additional ion-exchange columns to support Tank-Side Cesium Removal operations.
- Conduct second campaign of pretreatment of supernatant through Tank-Side Cesium Removal system and stage waste in Tank AP-106 for Direct-Feed Low-Activity Waste strategy.

Waste Feed Delivery

- Conduct pretreated waste transfers from Tank AP-106 for Low Activity Waste Treatment 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 two evaporator campaigns.

Maintenance of Infrastructure and Aging Tanks

- 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

- Develop Retrieval Completion Certification and Retrieval Data Report for Tank AX-103.
- Complete Tank AX-101 retrieval operations, which will conclude all retrieval operations in AX-Farm.

equipment to support Direct-Feed Low-Activity Waste operations and the Hanford mission until all tank farms are closed.

AX Farm Retrievals

- Initiate retrieval operations in Tank AX-101.

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 Tank 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.

West Area Risk Management (23-D-403)

- Complete conceptual design of the treatment capability.

222-S Laboratory Operations

- Provide analytical services to the Hanford site in support of Direct-Feed Low-Activity Waste and other site operations.

Research and Development

- Support activities related to technology development initiatives aimed at accelerating the Hanford Tank Waste Mission.

A Farm Retrievals

- Conduct Tank A-101 retrieval operations.
- Complete Tank A-102 and Tank A-106 retrieval system installations.

Tank Closure

- Complete construction on U Tank Farm surface barrier.

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.

West Area Risk Management (23-D-403)

- Achieve Critical Decision 1 – Alternative Selection and Cost Range.
- Complete final design of the treatment capability.
- Achieve Critical Decision 3A to support long lead procurements and site preparation.

222-S Laboratory Operations

- Provide analytical services to the Hanford site in support of Direct-Feed Low-Activity Waste and other site operations.
- Complete 1F radiological hot cell maintenance.
- Initiate renovations in rooms 1J, 4C, 4K, 1GA, and 1GC.
- Begin construction of Ancillary Equipment Addition.

Research and Development

- Support activities related to technology development initiatives aimed at accelerating the Hanford Tank Waste Mission.

Low Activity Waste Pretreatment System (15-D-409-02)

- Complete final design and initiate construction of the Advanced Modular Pretreatment System.

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 includes the following: Pretreatment Facility, High-Level Waste Vitrification Facility, Low-Activity Waste Vitrification 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 Vitrification 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 Vitrification 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 Vitrification 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 2023 Enacted	FY 2024 Request	Explanation of Changes FY 2024 Request vs FY 2023 Enacted
\$824,900,000	\$620,000,000	-\$204,900,000
<p>Low-Activity Waste Facility, Balance of Facilities/Direct Feed Low-Activity Waste/Effluent Management Facility –</p> <ul style="list-style-type: none"> Complete first Low-Activity Waste Facility melter heat-up and check out. Complete second Low-Activity Waste Facility melter heat-up and check out. Complete cold Commissioning Management Assessment. <p>High-Level Waste Facility and Pretreatment Facility Engineering Design Activities:</p> <ul style="list-style-type: none"> Achieve 60% design on all 56 systems. 	<p>High-Level Waste Vitrification Facility and Pretreatment Facility Engineering Design Activities:</p> <ul style="list-style-type: none"> Complete 60% design of all process and utility systems. Continue 90% design for systems associated with chemical process, mechanical handling, Melter feed, off gas and ventilation systems. Engineering support to facilitate building enclosure. Develop design changes associated with alternate tank waste feed routing to the High-Level Waste Vitrification Facility. 	<ul style="list-style-type: none"> The decrease is primarily attributed to the completion of the Direct-Feed Low-Activity Waste segment.

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- Complete 90% design for sixteen systems covering Chemical, Melter Feed, Off gas and Ventilation systems and Facility Structural design.
 - Conduct annual update to the Preliminary Documented Safety Analysis to maintain alignment with design.

Procurement Activities:

- Complete vendor awards for design for Melter Feed equipment and pumps, Ventilation Filter housing and equipment.

Maintenance/Construction Activities:

- Perform Preservation Maintenance.
- Complete Construction Planning and Material staging.
- Complete Subcontract Planning and initiate contractor mobilization.
- Initiate construction preparation to support ramp up.
- Pretreatment facility:
- Support facility preservation and maintenance activities.

- Conduct annual update to the Preliminary Documented Safety Analysis to maintain alignment with design updates.

Procurement Activities:

- Complete vendor awards for plant equipment to support design completion, including mechanical handling process and utility system and ventilation equipment.

Maintenance/Construction Activities:

- Continue preservation maintenance.
- Develop long-term construction planning and material staging.
- Develop subcontract planning and continue contractor mobilization.
- Continue low-risk construction for those systems at 90 percent design.
- Pretreatment facility:
- Support facility preservation and maintenance 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 required to support the treatment of tank wastes in the Waste Treatment and Immobilization Plant including the implementation of the strategy of the Direct-Feed Low-Activity Waste approach, which is the first phase of operations. This includes the operational scope for the Low-Activity Waste Vitrification Facility, the Analytical Laboratory, the Balance of Facilities, and the Effluent Management Facility starting with hot commissioning after Critical Decision 4, “Approve Start of Operations or Project Completion” 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 2023 Enacted	FY 2024 Request	Explanation of Changes FY 2024 Request vs FY 2023 Enacted
\$50,000,000	\$466,000,000	+\$416,000,000
<ul style="list-style-type: none"> Procure long lead spare parts and miscellaneous consumables to support operations. Complete fabrication and assembly of two spare melters for the Low-Activity Waste facility. 	<ul style="list-style-type: none"> Begin Hot Commissioning and ramp up of capability for Direct-Feed Low-Activity Waste. 	<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 2022 Enacted	FY 2022 Actuals	FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 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)	134,867	47,555	30,999	30,999	14,665	41,648
Total, Capital Operating Expenses	134,867	47,555	30,999	30,999	14,665	41,648

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

River Protection (Direct Funded)

Construct New Maintenance Shop ^a	13,678	9,267	2,995	2,995	1,416	0	-1,416
Effluent Treatment Facility Acetonitrile Treatment Upgrade ^a	18,094	11,324	5,801	5,801	969	0	-969
Effluent Treatment Facility TF Load in Expansion ^a	15,836	5,822	6,875	6,875	3,139	0	-3,139
222-S Ancillary Equipment Addition ^a	9,255	1,175	0	0	0	8,080	+8,080
222-S Lab Renovation – Room 4A ^a	5,460	0	0	0	0	5,460	+5,460
222-S Lab Renovation – Room 4C ^a	4,408	0	0	0	0	4,408	+4,408
222-S Lab Renovation – Room 4K ^a	6,108	0	0	0	0	6,108	+6,108
222-S Lab Renovation – Room 1J ^a	4,480	0	0	0	0	4,480	+4,480
222-S Lab Renovation – Room 1GA/1GC ^a	5,384	0	0	0	0	5,384	+5,384
222-Standards Lab ^a	8,835	1,107	0	0	0	7,728	+7,728
222-S Office Space Addition ^a	9,648	4,526	4,828	4,828	294	0	-294
AP Farm Tanker Truck Loading and Off Loading Station ^a	2,212	2,211	1	1	0	0	0
Modular Grout System	2,381	1,646	735	735	0	0	0
ETF Motor Control Center Upgrades	10,688	4,092	6,596	6,596	0	0	0
ETF Brine Storage Tanks ^a	18,400	6,385	3,168	3,168	8,847	0	-8,847
Total, River Protection	134,867	47,555	30,999	30,999	14,665	41,648	+26,983
Total, Capital Summary	134,867	47,555	30,999	30,999	14,665	41,648	+26,983

^a These capital investments represent expenditures that may be accelerated to FY 2023 based on emerging or identified risks.

**Office of River Protection
Construction Projects Summary (\$K)**

Total	Prior Years	FY 2022 Enacted	FY 2022 Actuals	FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 Enacted
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Waste Treatment and Immobilization Plant, Hanford WA (ORP-0060)

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

Total Estimate Cost (TEC)	TBD	7,754,000	586,000	469,000	412,700	0	0
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Other Project Costs (OPC)	0	0	0	0	0	0	0
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01-D-16D, High-Level Waste Facility

Total Estimate Cost (TEC)	TBD	2,830,833	144,358	52,000	392,200	600,000	+207,800
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Other Project Costs (OPC)	0	0	0	0	0	0	0
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01-D-16E Pretreatment Facility

Total Estimate Cost (TEC)	TBD	3,757,050	20,000	4,700	20,000	20,000	0
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Other Project Costs (OPC)	0	0	0	0	0	0	0
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Total Estimate Cost (TEC)	TBD	14,341,883	750,358	525,700	824,900	620,000	+207,800
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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	14,341,883	750,358	525,700	824,900	620,000	+207,800
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23-D-403 200 West Area Tank Farms Risk Management Project (ORP-0014)

Total Estimated Cost (TEC)	TBD	0	0	0	4,408	15,309	+10,901
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Other Project Cost (OPC)	TBD	0	3,422	3,422	500	5,000	+4,500
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Total Project Cost (TPC) 23-D-403	TBD	0	3,422	3,422	4,908	20,309	+15,401
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15-D-409 Low-Activity Waste Pretreatment System (ORP-0014)

Total Estimated Cost (TEC)	TBD	320,053	0	0	0	60,000	+60,000
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Other Project Cost (OPC)	TBD	19,314	1,167	1,167	3,000	7,700	+4,700
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Total Project Cost (TPC) 15-D-409	TBD	339,367	1,167	1,167	3,000	67,700	+64,700
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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 FY 2024 budget request for the Waste Treatment and Immobilization Plant is \$620,000,000, to continue to advance facility design and construction for those systems at 90% design complete.

On December 15, 2016, the Deputy Secretary of Energy approved the direct-feed low-activity waste approach contract modification, which included hot commissioning and a project execution plan (Critical Decision 4a) to commence no later than August 31, 2023. Subsequent to the approval, Contract No. DE-AC27-01RV14136, *Design, Construction, and Commissioning of the Hanford Tank Waste Treatment and Immobilization Plant*, 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. Once the HLW facility has reached 90% design completion, the rebaseline effort for HLW will be initiated. Once the rebaseline effort is complete, this construction project data sheet will be formally revised and submitted to Congress.

The U.S. Department of Energy continues startup testing and commissioning of the Low-Activity Waste Facility, Analytical Laboratory, and Balance of Facilities. For the High-Level Waste Facility, the Department has initiated ramp-up of design, procurement, and low-risk construction activities. For the Pretreatment Facility the Department continues preservation and maintenance of the facilities and associated equipment, components, and material. While the Department remained focused on meeting the milestones contained in the Court's March 11, 2016, Amended Consent Decree, to include the near-term December 31, 2023, Low-Activity Waste Facility hot commissioning complete milestone, the novel coronavirus disease 2019 pandemic was a force majeure event creating work interruptions at the Hanford Site. The Court's new Amended Consent Decree, dated July 18, 2022, granted a 579-day extension to this milestone and has moved the Low-Activity Waste Facility hot commissioning complete milestone to August 1, 2025. The direct-feed low-activity waste portion of the project has experienced both cost and schedule delays associated with coronavirus disease 2019 (e.g., workforce impacts and supply chain shortages). The project continues to work towards achieving the milestones as soon as possible.

Significant Changes

This project was initiated in fiscal year 2001. This construction project data sheet is an update of the FY 2023 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 level 4 federal project director has been assigned to this project.

On July 18, 2022, the Court granted the amendment of the Consent Decree on the basis that the novel coronavirus disease 2019 pandemic being a force majeure event that created work interruptions at the Hanford Site, justifying amendment under Section VII.E (Force Majeure) of the Consent Decree. ECF No. 258 at 2–8. According to the Court-approved method for calculating schedule extensions in this circumstance, the remobilization period between March 23, 2020, and March 13, 2022, warranted a 579-day extension to the B-2, B-3, A-7, A-8, and A-9 milestones.

Due to COVID-19 impacts, safety, quality, and management issues the Department has determined that the completion of the Waste Treatment and Immobilization Plant Project will exceed the currently approved total project cost and the project completion date (CD-4a).

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	09/1995	09/1996	AUG 1998	4Q FY2005	OCT 2001	N/A	1Q FY2007
FY 2002	09/1995	09/1996	4Q FY1998	4Q FY2005	MAY 2002	N/A	1Q FY2007
FY 2003	09/1995	09/1996	4Q FY1998	4Q FY2005	MAY 2002	N/A	1Q FY2007
FY 2004	09/1995	09/1996	4Q FY1998	4Q FY2005	MAY 2002	N/A	1Q FY2007
FY 2003	09/1995	09/1996	04/21/2003	4Q FY2005	04/21/2003	N/A	3Q FY2008
Congressional Notification							
FY 2005	09/1995	09/1996	04/21/2003	4Q FY2005	04/21/2003	N/A	3Q FY2008
FY 2004	09/1995	09/1996	04/21/2003	4Q FY2005	04/21/2003	N/A	3Q FY2008
Reprogramming							
FY 2006	09/1995	09/1996	04/21/2003	4Q FY2007	04/21/2003	N/A	3Q FY2008
FY 2007	09/1995	09/1996	04/21/2003	4Q FY2007	04/21/2003	N/A	3Q FY2008
FY 2008	09/1995	09/1996	04/21/2003	4Q FY2010	04/21/2003	N/A	2Q FY2017
FY 2009	09/1995	09/1996	04/21/2003	4Q FY2013	04/21/2003	N/A	1Q FY2020
FY 2010	09/1995	09/1996	04/21/2003	1Q FY2016	04/21/2003	N/A	1Q FY2020
FY 2011	09/1995	09/1996	04/21/2003	1Q FY2016	04/21/2003	N/A	1Q FY2020
FY 2012	09/1995	09/1996	04/21/2003	1Q FY2016	04/21/2003	N/A	1Q FY2020
FY 2013	09/1995	09/1996	04/21/2003	1Q FY2016	04/21/2003	N/A	1Q FY2020
FY 2014	09/1995	09/1996	04/21/2003	1Q FY2016	04/21/2003	N/A	1Q FY2020
FY 2013	09/1995	09/1996	04/21/2003	1Q FY 2016	04/21/2003	N/A	1Q FY 2020
Reprogramming							
FY 2015	09/1995	09/1996	04/21/2003	1Q FY2016	04/21/2003	N/A	1Q FY2020
FY 2016	09/1995	09/1996	04/21/2003	1Q FY2016	04/21/2003	N/A	TBD
FY 2017	09/1995	09/1996	04/21/2003	1Q FY2016	04/21/2003	N/A	TBD
FY 2018	09/1995	09/1996	04/21/2003	TBD	04/21/2003	N/A	TBD
FY 2019	09/1995	09/1996	04/21/2003	TBD	04/21/2003	N/A	TBD
FY 2020	09/1995	09/1996	04/21/2003	TBD	04/21/2003	N/A	TBD
FY 2021	09/1995	09/1996	04/21/2003	TBD	04/21/2003	N/A	TBD
FY 2022	09/1995	09/1996	04/21/2003	TBD	04/21/2003	N/A	TBD
FY 2023	09/1995	09/1996	04/21/2003	TBD	04/21/2003	N/A	TBD
FY 2024	09/1995	09/1996	04/21/2003	TBD	04/21/2003	N/A	TBD

Conceptual design complete = actual date the conceptual design was completed (if applicable).

D&D complete = completion of decontamination and decommissioning (D&D) work.

Final design complete = estimated/actual date the project design will be/was completed.

#Q = number of quarter.

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.

FY = fiscal year.

N/A = not applicable.

PB = performance baseline.

TBD = to be determined.

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
FY 2024	TBD	TBD	TBD	0	0	TBD	TBD

- D&D = decontamination and decommissioning.
- FY = fiscal year.
- OPC = other project cost.
- TEC = total estimated cost.
- TBD = to be determined.

The FY 2001 budget request presented the contract value using a privatization approach for this project. The contract included design, construction, and commissioning (at a total estimated cost of \$5,466,000,000), and 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 fractions 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

**Environmental Management/
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Treatment and Immobilization Plant,
Hanford, WA**

FY 2024 Congressional Justification

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.

On December 15, 2016, the Deputy Secretary of Energy 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. The U.S. Department of Energy then chartered an Analysis of Alternatives 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 and Pretreatment facilities.

On July 18, 2022, the Court granted the amendment of the Consent Decree on the basis that the novel coronavirus disease 2019 pandemic being a force majeure event that created work interruptions at the Hanford Site, justifying amendment under Section VII.E (Force Majeure) of the Consent Decree. ECF No. 258 at 2–8. According to the Court-approved method for calculating schedule extensions in this circumstance, the remobilization period between March 23, 2020, and March 13, 2022, warranted a 579-day extension to the B-2, B-3, A-7, A-8, and A-9 milestones.

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. The Court’s new Amended Consent Decree, dated July 18, 2022, granted a 579-day extension to this milestone and has moved the Low-Activity Waste Facility hot commissioning complete milestone to August 1, 2025.

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 are a minimum treatment capacity of 18 metric tons of glass per day for the Low-Activity Waste Facility and are a minimum treatment capacity of 3.6 metric tons per day for the High-Level Waste Facility (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) necessary for the plant to operate.

Justification

The Waste Treatment and Immobilization Plant is the cornerstone of the U.S. Department of Energy, 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 completed 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.

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Treatment and Immobilization Plant,
Hanford, WA**

FY 2024 Congressional Justification

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 initiate ramp-up of design, procurement, and construction activities for the High-Level Waste Facility and continue preservation and maintenance for the Pretreatment Facility, 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 metric ton sodium per year
High-Level Waste Pretreatment	735 metric ton as delivered solids per year
Liquid Waste Effluent Management Facility Efficiency	3.1 volume reduction
Low-Activity Waste Vitrification	18 metric ton glass per day
High-Level Waste Vitrification	3.6 metric ton 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). 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 August 2025. 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 constructed and tested 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.

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	Obls	Costs	Approps	Obls	Costs	Approps	Obls	Costs	Approps	Obls	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	662,000	606,728	25,000	25,000	66,169	15,000	15,000	15,806
FY 2021	811,000	829,208	518,256	786,000	804,208	496,119	25,000	25,000	17,335	0	0	4,802
FY 2022	750,358	392,000	525,700	586,000	296,676	474,255	144,358	83,971	55,623	20,000	20,000	3,939
FY 2023	824,900	858,119	628,556	412,700	385,532	451,090	392,200	452,587	174,840	20,000	20,000	2,626
FY 2024	620,000	1,032,284	807,648	0	412,284	450,000	600,000	600,000	350,848	20,000	20,000	6,800
Out Years	TBD	TBD	TBD	0	0	198,855	TBD	TBD	TBD	TBD	TBD	TBD
Grand Total	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD

- Approps = appropriations.
- LAW = low-activity waste.
- LBL = Low-Activity Waste Facility, Balance of Facilities, and Analytical Laboratory.
- Obls = obligations.
- TBD = to be determined.
- WTP = Waste Treatment and Immobilization Plant.

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		
CTE	PTE	OVB	CTE	CTE	PTE	OVB	CTE	CTE	PTE	OVB	CTE

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.

CTE = current total estimate.

CX = commissioning.

N/A = not applicable.

OVB = original validated baseline.

PTE = previous total estimate.

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TBD = to be determined.

7. Schedule of Appropriation Requests

(Dollars in Thousands)

Request Year	Type	Prior Years	FY 2021	FY 2022	FY 2023	FY 2024	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	13,530,613	-	-	-	-	TBD	TBD
FY 2021	TEC/TPC	13,530,613	609,924	-	-	-	TBD	TBD
FY 2022	TEC/TPC	13,530,613	811,000	666,000	-	-	TBD	TBD
FY 2023	TEC/TPC	13,530,613	811,000	750,358	824,900	-	TBD	TBD
FY 2024	TEC/TPC	13,530,613	811,000	750,358	824,900	620,000	TBD	TBD

- FY = fiscal year.
- TBD = to be determined.
- TEC = total estimated cost.
- TPC = total project cost.

The U.S. Department of Energy 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 Waste Treatment and Immobilization Plant total project cost 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 decontamination and decommissioning 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 construction project data sheet.

9. Decontamination and Decommissioning 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.

Current contractor:

- 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 June 22, 2023.

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 of Energy:

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" – to be determined

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 2024 Request for the Hanford 200 West Area Tank Farms Risk Management Project is \$20,309,000, including \$15,309,000 of Total Estimated Cost and \$5,000,000 of Other Project Cost.

Critical Decision 0, “Approve Mission Need” was approved 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:

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-3A	CD-3	CD-4	D&D Complete
FY 2023	7/2/2021	2Q FY2023	3Q FY2023	TBD	TBD	N/A	TBD	TBD	N/A
FY 2024	7/2/2021	4QFY2023	1QFY2024	TBD	4QFY2024	1QFY2024	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 completed

CD-3A – Long Lead Procurement and Site Preparation

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	YBD	TBD	TBD	N/A	TBD	TBD
FY 2024 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 Critical Decision 3, “Approve Start of Construction” 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. Based on the Analysis of Alternatives the project will design, build, install and commission a Tank-Side Cesium Removal system at the SY Tank Farm. The 200 West Tank-Side Cesium Removal system design will utilize the design and lessons learned from the recently completed Tank-Side Cesium Removal Demonstration Subproject (15-D-409-01) and be coordinated with the Advanced Modular Pretreatment System (15-D-409-02). The 200 West Tank-Side Cesium Removal system will be fabricated off-site and installed onto a newly constructed concrete pad along the east side of the SY Tank Farm. Based on a pre-conceptual screening of below-grade obstructions and evaluation of the SY tank utilization strategies, this has been initially determined as the most beneficial siting. The 200 West Tank-Side Cesium Removal system will consist of a process enclosure to facilitate the filtration and ion exchange process, an ancillary enclosure housing equipment for air, water, and chemical supply to the process, and a control enclosure containing the human-machine interface equipment to operate the system.

The 200 West Tank-Side Cesium Removal system will be fed waste from Tank SY-101 by a newly fabricated and installed waste transfer pump and associated equipment at the SY-01A central pump pit. Feed will be provided by a recirculation loop with a feed and return transfer line routing from the SY-01A pit to the 200 West Tank-Side Cesium Removal process enclosure. Once the waste is pre-treated through the 200 West Tank-Side Cesium Removal, it will not be reintroduced into an existing SY Farm Tank. The pre-treated product waste will be directed to a verification tank to facilitate staging and sampling, as necessary, to qualify the feed prior to transporting the waste to Tank AP-106. The verification tank headspace will be ventilated by the existing SY Tank Farm exhausters.

Spent ion exchange columns will be interim stored on a concrete pad located adjacent to the 200 West Tank-Side Cesium Removal system. The spent ion exchange columns will be removed by a dedicated forklift and transported to the storage pad via concrete travel path. The project will seek approval of Critical Decision 1, "Approve Alternative Selection and Cost Range" following conceptual design and will also seek approval of Critical Decision 3A, "Approve Start of Construction" for long-lead procurements and fabrications, primarily the Tank-Side Cesium Removal enclosures and the SY-101 feed pump.

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 Office of River Protection 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 the Direct-Feed Low-Activity Waste approach to near-term vitrification of low-activity tank 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 associated radioactive decay 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	4,408	4,408	4,408
FY 2024	15,309	14,309	14,309
Outyears	TBD	TBD	TBD
Total, Design	TBD	TBD	TBD
Construction			
Outyears	TBD	TBD	TBD
Total, Construction	TBD	TBD	TBD
TEC			
FY 2023	4,408	4,408	4,408
FY 2024	15,309	14,309	14,309
Outyears	TBD	TBD	TBD
Total TEC	TBD	TBD	TBD
Other Project Cost (OPC)			
OPC except D&D			
FY 2022	3,422	3,422	3,422
FY 2023	500	500	500
FY 2024	5,000	5,000	5,000
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	4,908	4,908	4,908
FY 2024	20,309	19,309	19,309
Outyears	TBD	TD	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	3,908	TBD
Contingency	TBD	0	TBD
Total, Design	TBD	3,908	TBD
Construction			
Construction	TBD	TBD	TBD
Contingency	TBD	TBD	TBD
Total, Construction	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
Permitting, Readiness, Testing & Turnover	TBD	TBD	TBD
Contingency	TBD	TBD	TBD
Total, OPC	TBD	TBD	TBD
Contingency, OPC	TBD	TBD	TBD
Total, TPC	TBD	TBD	TBD
Total Contingency	TBD	0	TBD

4. Schedule of Appropriations Requests

		Prior Years	FY 2023	FY 2024	Outyears	Total
FY 2023 Request	TEC	0	3,908	TBD	TBD	TBD
	OPC	4,000	500	TBD	TBD	TBD
	TPC	4,000	4,408	TBD	TBD	TBD
FY 2023 Amended ¹	TEC	0	43,500	TBD	TBD	TBD
	OPC	4,000	1,500	TBD	TBD	TBD
	TPC	4,000	45,000	TBD	TBD	TBD
FY 2024 Request	TEC	0	4,408	15,309	TBD	TBD
	OPC	4,000	500	5,000	TBD	TBD
	TPC	4,000	4,908	20,309	TBD	TBD

¹ FY 2023 request was increased \$40,592,000 by the Office of Management and Budget after submittal to Congress.

5. 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	TBD	TBD	TBD
Total	TBD	TBD	TBD	TBD

6. Decommissioning & Demolition 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.

7. 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.

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

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

Summary

The FY 2024 request for the Low-Activity Waste Pretreatment System is \$67,700,000 to support design and construction of the Advanced Modular Pretreatment System (15-D-409-02), including \$60,000,000 of Total Estimated Cost and \$7,700,000 of Other Project Cost. The Tank-Side Cesium Removal Demonstration Subproject (15-D-409-01) is complete. On January 4, 2022, Critical Decision-4a was approved to start operations. Critical Decision-4 was approved on April 12, 2022, to start Hot Operations of the Tank-Side Cesium Removal Demonstration Subproject. This Project Data Sheet is an update of the fiscal year 2020 Project Data Sheet. The cost range is currently being defined throughout the Critical Decision-1 process.

Significant Changes

To support the deployment of the Tank-Side Cesium Removal system, substantial infrastructure upgrades occurred in the AP Tank Farm. Upgrades to integrate the Tank-Side Cesium Removal system in the AP Tank are referred to as Tank Farm Upgrades. Upgrades to provide transfer lines from the AP Tank Farm to the Waste Treatment and Immobilization Plant are referred to as Waste Feed Delivery. The Tank-Side Cesium Removal system, combined with the Tank Farm Upgrades and the Waste Feed Delivery scope are collectively referred to as the Tank-Side Cesium Removal Demonstration Subproject (15-D-409-01), under the Low-Activity Waste Pretreatment System project.

This Project Data Sheet is an update of the FY 2020 Project Data Sheet and includes the next subproject, the Advanced Modular Pretreatment System (15-D-409-02). This subproject was previously referenced as the Full Capability Low-Activity Waste Pretreatment System (15-D-409-02), but has been renamed to distinguish it from the title of the appropriation. Experience obtained from the Tank-Side Cesium Removal Demonstration Subproject will inform the Advanced Modular Pretreatment System, which is going through an Analysis of Alternatives.

A Federal Project Director is assigned to the project.

**Critical Milestone History
Overall Project (15-D-409)**

	Fiscal Quarter or Date							
	CD-0	Conceptual Design Complete	CD-1	CD-2	Final Design Complete	CD-3	D&D Complete	CD-4
FY 2015	2Q FY2014	2Q FY2015	TBD	TBD	TBD	TBD	N/A	TBD
FY 2016	3/17/2014	2Q FY2015	2Q FY2015	TBD	TBD	TBD	N/A	TBD
FY 2017	3/17/2014	1/15/2015	5/19/2015	TBD	TBD	TBD	N/A	TBD
FY 2018	3/17/2014	1/15/2015	5/19/2015	TBD	TBD	TBD	N/A	TBD
FY 2019	3/17/2014	1/15/2015	5/19/2015	TBD	TBD	TBD	N/A	TBD
FY 2020	3/17/2014	1/15/2015	5/19/2015	TBD	TBD	TBD	N/A	TBD

Fiscal Quarter or Date

	Conceptual Design Complete	CD-1	CD-2	Final Design Complete	CD-3	D&D Complete	CD-4	
FY 2024	3/17/2014	1/15/2015	5/19/2015	TBD	TBD	TBD	N/A	TBD

CD-0 – Approve Mission Need

Conceptual Design Complete – Estimated date the conceptual design will be completed

CD-1 – Approve Alternative Selection and Cost Range

CD-3a – Long Lead Procurement and Site Preparation

CD-2 – Approve Performance Baseline

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

CD-3 – Approve Start of Construction

D&D Complete – Completion of D&D work

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

Tank-Side Cesium Removal Demonstration Subproject (15-D-409-01)

Fiscal Quarter or Date

Fiscal Year	CD-0	Conceptual Design Complete	CD-1	CD-2	Final Design Complete	CD-3	D&D Complete	CD-4
FY 2015	2Q FY2014							
FY 2016	3/17/2014	2Q 2015	2Q 2015					
FY 2017	3/17/2014	1/15/2015	5/19/2015					
FY 2018	3/17/2014	1/15/2015	5/19/2015	TBD	TBD	TBD	N/A	TBD
FY 2019	3/17/2014	1/15/2015	5/19/2015	TBD	TBD	TBD	N/A	TBD
FY 2019 Update	3/17/2014	1/15/2015	5/19/2015	TBD	TBD	TBD	N/A	TBD
FY 2020	3/17/2014	1/15/2015	5/19/2015	TBD	TBD	TBD	N/A	TBD
FY 2024	3/17/2014	1/15/2015	5/19/2015	2/26/2020	2/26/2020	2/26/2020	N/A	4/12/2022

Advanced Modular Pretreatment System (15-D-409-02):

Fiscal Quarter or Date

Fiscal Year	CD-0	Conceptual Design Complete	CD-1	CD-2	Final Design Complete	CD-3	D&D Complete	CD-4
FY 2020	3/17/2014	TBD	TBD	TBD	TBD	TBD	N/A	TBD
FY 2024	3/17/2014	TBD	TBD	TBD	TBD	TBD	N/A	TBD

CD-0 – Approve Mission Need

Conceptual Design Complete – Estimated date the conceptual design will be completed

CD-1 – Approve Alternative Selection and Cost Range

CD-2 – Approve Performance Baseline

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

CD-3 – Approve Start of Construction

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D&D Complete – Completion of D&D work
 CD-4 – Approve Start of Operations or Project Completion.
 Project Cost History

Tank-Side Cesium Removal Demonstration Subproject (15-D-409-01)

(Dollars in Thousands)

Fiscal Year	TEC, Design	TEC, Construction	TEC, Total	OPC	TPC
FY 2018	TBD	TBD	TBD	TBD	TBD
FY 2019	TBD	TBD	TBD	TBD	TBD
FY 2020	TBD	TBD	TBD	TBD	TBD
FY 2024	21,515	126,900	148,415	9,124	157,539

Advanced Modular Pretreatment System (15-D-409-02)

(Dollars in Thousands)

Fiscal Year	TEC, Design	TEC, Construction	TEC, Total	OPC	TPC
FY 2024	TBD	TBD	TBD	TBD	TBD

Overall Project (15-D-409)

(Dollars in Thousands)

Fiscal Year	TEC, Design	TEC, Construction	TEC, Total	OPC	TPC
FY 2015	60,000	TBD	TBD	TBD	TBD
FY 2016	TBD	TBD	TBD	TBD	TBD
FY 2017	TBD	TBD	TBD	TBD	TBD
FY 2018	TBD	TBD	TBD	TBD	TBD
FY 2019	TBD	TBD	TBD	TBD	TBD
FY 2020	TBD	TBD	TBD	TBD	TBD
FY 2024	TBD	TBD	TBD	TBD	TBD

2. Scope and Justification

Scope

This project will design and build a Low-Activity Waste Pretreatment System to treat tank waste and to produce a low-activity waste feed stream that meets the waste acceptance criteria of the Waste Treatment and Immobilization Plant Low-Activity Waste Facility. Operation of the Low-Activity Waste Pretreatment System and the Low-Activity Waste Facility will reduce environmental risk by immobilizing tank farm liquids, freeing up approximately 1,000,000 gallons per year of double-shell tank space, allowing additional single-shell tanks to be retrieved, and reduce startup risks of the Waste Treatment and Immobilization Plant.

The Low-Activity Waste Pretreatment System will be designed with the throughput to provide sufficient feed to operate the two large Waste Treatment Plant Low-Activity Waste Facility melters at full capacity. The Low-Activity Waste Pretreatment System will be designed and deployed in a phased manner to correspond with the startup of the Low-Activity Waste Facility.

The Low-Activity Waste Pretreatment System project consists of the following subprojects:

Tank-Side Cesium Removal Demonstration Subproject (15-D-409-01): The initial phase utilized Tank-Side Cesium Removal equipment to provide initial feed. The subproject constructed the waste transfer system to feed waste from tank-side cesium removal to the Waste Treatment and Immobilization Plant, which demonstrated the technology, methodology,

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procedures, and practices needed to provide the initial 5 million gallons of pretreated low-activity waste feed to the Waste Treatment and Immobilization Plant.

Advanced Modular Pretreatment System (15-D-409-02): Experience obtained from the Tank-Side Cesium Removal Demonstration Subproject including design, fabrication, factory acceptance testing, permitting, and operations will inform the Advanced Modular Pretreatment System’s final course of action and alternative project selection.

Justification

The Low-Activity Waste Facility remains on schedule to meet interim milestones in the Amended Consent Decree, State of Washington v. DOE, Case No. 2:08-CV-5085-RMP (E.D. Wash.). Under the Amended Consent Decree, interim milestone D-00A-09, the Low-Activity Waste Facility must complete hot commissioning by August 1, 2025 – meaning “the point at which the Low-Activity Waste facility has demonstrated its ability to produce immobilized low-activity waste glass of acceptable quality.” Provision for a tank waste treatment capability is required to provide low-activity waste feed to the Low-Activity Waste Facility.

Operation of the Advanced Modular Pretreatment System along with the Low-Activity Waste Facility mitigates Waste Treatment and Immobilization Plant startup and commissioning risks and accelerates overall low-activity waste immobilization. Based on an estimated 10 to 20 years of operations, it is expected that 9,600 metric tons of tank waste sodium (15 percent of the tank farms sodium inventory) will be immobilized, reducing environmental risk, and freeing up approximately 1 million gallons per year of double-shell tank space, which can then be used to support waste retrievals from the older single-shell tanks to the newer and safer double-shell tanks.

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 were verified prior to the approval of Critical Decision 4. The Objective Key Performance Parameters represent the desired project performance.

Performance Measure	Threshold						
System throughput	Capacity to support Waste Treatment and Immobilization Plant Low-Activity Waste Facility vitrification operations at 30 Metric Ton of glass per day, instantaneous rate with at least 20% Waste Oxide Loading.						
Waste Treatment and Immobilization Plant Low-Activity Waste Facility Vitrification Waste Acceptance Criteria	Capability to meet Waste Treatment and Immobilization Plant Low-Activity Waste Facility Feed Acceptance Criteria as defined in 24590-WTP-ICD-MG-01-030, Rev. 1 ICD-30 Direct LAW Feed Table 5.						
Solid’-s removal	Low-Activity Waste Pretreatment System shall be capable of removing undissolved (entrained) solids from tank supernatant waste. Strontium-90 and Transuranic (waste) TRU shall be limited in the feed to Waste Treatment and Immobilization Plant as specified below.						
	<table border="1"> <thead> <tr> <th>Radionuclide</th> <th>Maximum Radionuclide Concentration in Treated Low-Activity Waste, Ci/gmol Sodium</th> </tr> </thead> <tbody> <tr> <td>Strontium-90</td> <td>1.12E-03</td> </tr> <tr> <td>TRU^a</td> <td>1.30E-05</td> </tr> </tbody> </table>	Radionuclide	Maximum Radionuclide Concentration in Treated Low-Activity Waste, Ci/gmol Sodium	Strontium-90	1.12E-03	TRU ^a	1.30E-05
	Radionuclide	Maximum Radionuclide Concentration in Treated Low-Activity Waste, Ci/gmol Sodium					
Strontium-90	1.12E-03						
TRU ^a	1.30E-05						
^a Transuranic (waste) TRU is defined as alpha-emitting radionuclides with an atomic number greater than 92, with half-life greater than 20 years (HNF-EP-0063, Hanford Site Solid Waste Acceptance Criteria).							

Performance Measure	Threshold
Cesium removal	The cesium-137 concentration in immobilized low-activity waste must be < 0.3 Ci/m3 to meet DOE M 435.1-1, Radioactive Waste Management Manual, requirements for near surface disposal. The maximum cesium-137 concentration in the feed to Waste Treatment and Immobilization Plant must be less than or equal to 3.18E-05 Ci/gmol sodium per 24590-WTP-ICD-MG-01-030, Rev 1.
Environmental compliance	Comply with all applicable environmental regulations. For example, WAC 17 -303, "Dangerous Waste Regulations," a subsection of which drives secondary containment for waste containing systems (e.g., encased waste transfer lines) and leak detection in secondary containment.

3. Project Cost and Schedule

Financial Schedule

Low-Activity Waste Pretreatment System funding is appropriated at the overall project level (15-D-409) and is allocated to the subprojects in the tables below.

Tank-Side Cesium Removal Demonstration Subproject (15-D-409-01)

(Dollars in Thousands)

	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
Design			
FY 2018	3,110	3,110	3,110
FY 2019	18,405	13,471	13,471
FY 2020	0	4,861	4,861
FY 2021	0	73	73
Total Design	21,515	21,515	21,515
Construction			
FY 2018	89,252	9,304	9,304
FY 2019	37,648	24,610	24,610
FY 2020	0	43,483	43,483
FY 2021	0	46,485	46,485
FY 2022	0	3,018	3,018
Total Construction	126,900	126,900	126,900
TEC			
FY 2018	92,362	12,414	12,414
FY 2019	56,053	38,081	38,081
FY 2020	0	48,344	48,344
FY 2021	0	46,558	46,558
FY 2022	0	3,018	3,018
Total, TEC	148,415	148,415	148,415
Other Project Cost (OPC)			
OPC			
FY 2018	1,500	1,500	1,500
FY 2019	340	340	340
FY 2020	263	263	263

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Low Activity Waste
Pretreatment System, Hanford**

FY 2024 Congressional Justification

	Appropriations	Obligations	Costs
FY 2021	6,354	6,354	6,354
FY 2022	667	667	667
Total, OPC	9,124	9,124	9,124
Total Project Cost (TPC)			
FY 2018	93,862	13,914	13,914
FY 2019	56,393	38,421	38,421
FY 2020	263	48,607	48,607
FY 2021	6,354	52,912	52,912
FY 2022	667	3,685	3,685
Total, TPC ¹	157,539	157,539	157,539

¹ Includes \$21.3 million of fee.

Advanced Modular Pretreatment System (15-D-409-02): The final schedule is based on past Tank-Side Cesium Removal Demonstration Subproject performance, with some design changes and potentially more than one unit. The preliminary estimates in this Project Data Sheet are prior to the Analysis of Alternatives that will be recommended by an independent contractor and accepted by the Office of River Protection Manager, DOE Environmental Management, DOE Project Management, and the Deputy Secretary of Energy, anticipated in November 2022.

(Dollars in Thousands)

	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
Design			
FY 2024	30,900	15,450	15,450
Outyears	TBD	TBD	TBD
Total Design	TBD	TBD	TBD
Construction			
FY 2024	29,100	0	0
Outyears	TBD	TBD	TBD
Total Construction ¹	TBD	TBD	TBD
TEC			
FY 2024	60,000	15,450	15,450
Outyears	TBD	TBD	TBD
Total, TEC	TBD	TBD	TBD
Other Project Cost (OPC)			
OPC			
FY 2022	500	500	500
FY 2023	3,000	3,000	3,000
FY 2024	7,700	7,700	7,700
Outyears	TBD	TBD	TBD
Total, OPC	TBD	TBD	TBD

(Dollars in Thousands)

	Appropriations	Obligations	Costs
Total Project Cost (TPC)			
FY 2022	500	500	500
FY 2023	3,000	3,000	3,000
FY 2024	67,700	23,150	23,150
Outyears	TBD	TBD	TBD
Total, TPC	TBD	TBD	TBD

Overall Project (15-D-409)¹

(Dollars in Thousands)

	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
Design			
FY 2015	5,765	5,765	5,765
FY 2016	69,475	25,544	25,544
FY 2017	30,824	46,175	46,175
FY 2018	3,110	30,092	30,092
FY 2019	18,405	14,926	14,926
FY 2020	0	5,034	5,034
FY 2021	0	43	43
FY 2022	0	0	0
FY 2023	0	0	0
FY 2024	30,900	15,450	15,450
Outyears	TBD	TBD	TBD
Total Design	TBD	TBD	TBD
Construction			
FY 2015	17,235	1,209	1,209
FY 2016	5,525	14,173	14,173
FY 2017	42,176	11,523	11,523
FY 2018	89,890	12,571	12,571
FY 2019	37,648	25,751	25,751
FY 2020	0	43,479	43,479
FY 2021	0	46,485	46,485
FY 2022	0	3,022	3,022
FY 2023	0	0	0
FY 2024	29,100	0	0
Outyears	TBD	TBD	TBD
Total Construction	303,713	303,713	303,713
TEC			
FY 2015	23,000	6,974	6,974
FY 2016	75,000	39,717	39,717
FY 2017	73,000	57,698	57,698
FY 2018	93,000	42,663	42,663
FY 2019	56,053	40,677	40,677
FY 2020	0	48,513	48,513

**Environmental Management/
River Protection/15-D-409
Low Activity Waste
Pretreatment System, Hanford**

FY 2024 Congressional Justification

(Dollars in Thousands)

	Appropriations	Obligations	Costs
FY 2021	0	46,528	46,528
FY 2022	0	3,022	3,022
FY 2023	0	0	0
FY 2024	60,000	15,450	15,450
Outyears	TBD	TBD	TBD
Total, TEC	462,192	462,192	462,192

Other Project Cost (OPC)

OPC

FY 2014	4,397	4,397	4,397
FY 2015	5,252	5,252	5,252
FY 2016	408	408	408
FY 2017	447	447	447
FY 2018	1,853	1,853	1,853
FY 2019	340	340	340
FY 2020	263	263	263
FY 2021	6,354	6,354	6,354
FY 2022	1,167	1,167	1,167
FY 2023	3,000	3,000	3,000
FY 2024	7,700	7,700	7,700
Outyears	TBD	TBD	TBD
Total, OPC	TBD	TBD	TBD

Total Project Cost (TPC)

FY 2014	4,397	4,397	4,397
FY 2015	28,252	12,226	12,226
FY 2016	75,408	40,125	40,125
FY 2017	73,447	58,145	58,145
FY 2018	94,853	44,516	44,516
FY 2019	56,393	41,017	41,017
FY 2020	263	48,776	48,776
FY 2021	6,354	52,882	52,882
FY 2022	1,167	4,189	4,189
FY 2023	3,000	3,000	3,000
FY 2024	67,700	23,150	23,150
Outyears	TBD	TBD	TBD
Total, TPC	TBD	TBD	TBD

¹ Includes costs incurred prior to inception of the Tank-Side Cesium Removal Demonstration Subproject.

Details of Project Cost Estimate

Tank-Side Cesium Removal Demonstration Subproject (15-D-409-01)

(Dollars in Thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design			
Design	21,515	TBD	N/A
Contingency	N/A	TBD	N/A
Total, Design	21,515	TBD	N/A
Construction			
Building & Site Work	126,900	TBD	N/A
Contingency	N/A	TBD	N/A
Total Construction	126,900	TBD	N/A
Total, TEC	148,415	TBD	N/A
Contingency, TEC		TBD	N/A
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning	500	TBD	N/A
Conceptual Design	2,000	TBD	N/A
Office of Project Management Oversight & Assessments Reviews		TBD	N/A
Other, OPC	6,624	TBD	N/A
Total, OPC except for D&D	9,124	TBD	N/A
Total, OPC	9,124	TBD	N/A
Contingency, OPC	N/A	TBD	N/A
Total, Total Project Cost	157,539	TBD	N/A
Total, Contingency	N/A	TBD	N/A

Advanced Modular Pretreatment System (15-D-409-02)

(Dollars in Thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design			
Design	TBD	TBD	TBD
Contingency	TBD	TBD	TBD
Total, Design	TBD	TBD	TBD

**Environmental Management/
River Protection/15-D-409
Low Activity Waste
Pretreatment System, Hanford**

(Dollars in Thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Construction			
Building & Site Work	TBD	TBD	TBD
Contingency	TBD	TBD	TBD
Total Construction	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	N/A
Conceptual Design	TBD	TBD	N/A
Office of Project Management Oversight & Assessments Reviews	TBD	TBD	N/A
Other, OPC	TBD	TBD	N/A
Total, OPC except for D&D	TBD	TBD	N/A
Total, OPC	TBD	TBD	N/A
Contingency, OPC	TBD	TBD	N/A
Total, Total Project Cost	TBD	TBD	N/A
Total, Contingency	TBD	TBD	N/A

Overall Project (15-D-409)¹

(Dollars in Thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design			
Design	TBD	TBD	N/A
Contingency	TBD	TBD	N/A
Total, Design	TBD	TBD	N/A
Construction			
Building & Site Work	TBD	TBD	N/A
Contingency	TBD	TBD	N/A
Total Construction	TBD	TBD	N/A
Total, TEC	TBD	TBD	N/A
Contingency, TEC	TBD	TBD	N/A

**Environmental Management/
River Protection/15-D-409
Low Activity Waste
Pretreatment System, Hanford**

(Dollars in Thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning	TBD	TBD	N/A
Conceptual Design	TBD	TBD	N/A
Office of Project Management Oversight & Assessments Reviews	TBD	TBD	N/A
Other, OPC	TBD	TBD	N/A
Total, OPC except for D&D	TBD	TBD	N/A
Total, OPC	TBD	TBD	N/A
Contingency, OPC	TBD	TBD	N/A
Total, Total Project Cost ¹	TBD	TBD	N/A
Total, Contingency	TBD	TBD	N/A

¹ Includes costs incurred prior to inception of the Tank-Side Cesium Removal Demonstration Subproject.

Schedule of Appropriation Requests¹

(Dollars in Thousands)

Request		Prior Years	FY 2023	FY 2024	Outyears	Total
FY 2015	TEC	23,000	0	0	0	23,000
	OPC	9,649	0	0	0	9,649
	TPC	32,649	0	0	0	32,649
FY 2016	TEC	98,000	0	0	0	98,000
	OPC	10,057	0	0	0	10,057
	TPC	108,057	0	0	0	108,057
FY 2017	TEC	171,000	0	0	0	171,000
	OPC	10,504	0	0	0	10,504
	TPC	181,504	0	0	0	181,504
FY 2018	TEC	264,000	0	0	0	264,000
	OPC	12,357	0	0	0	12,357
	TPC	276,357	0	0	0	276,357
FY 2019	TEC	320,053	0	0	0	320,053
	OPC	12,697	0	0	0	12,697
	TPC	332,750	0	0	0	332,750
FY 2020	TEC	320,053	0	0	0	320,053
	OPC	12,960	0	0	0	12,960
	TPC	333,013	0	0	0	333,013
FY 2024	TEC	320,053	0	60,000	TBD	TBD
	OPC	20,481	3,000	7,700	TBD	TBD
	TPC	340,534	3,000	67,700	TBD	TBD

¹ No Construction Project Data Sheets were submitted for FY 2021, FY 2022, or FY 2023.

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 of this Capital Asset (fiscal quarter)	TBD

Related Funding Requirements

(Dollars in Thousands)

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

Operations and Maintenance

5. Decontamination and Decommissioning Information

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

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

6. Acquisition Approach

An acquisition strategy for completion of the design and construction phase of the project will be developed after the selection of the Analysis of Alternatives. The acquisition strategy will include alternatives such as having the Tank Farms Contractor subcontract for construction services or the Department could directly contract with a construction firm or with another entity.

Subsequent to Critical Decision 1, the Assistant Secretary for the Office of Environmental Management will endorse the Acquisition Plan selected option where the tank farms prime contractor will subcontract for construction services. The Advanced Modular Pretreatment System (15-D-409-02) design, equipment procurement, installation, and operation will be performed by the Tank Farms Project’s prime contractor.

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's EM 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 as well as environmental cleanup to non-residential levels.

EM has stewardship responsibilities for the Savannah River National Laboratory, 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; and sustaining and improving our nuclear security. 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 2024.

Highlights of the FY 2024 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. To reach the end state of the completing the Savannah River Site Liquid Waste Mission, the Savannah River Site will accelerate risk reduction by optimizing the fully integrated Liquid Waste system. This will initially be performed by processing higher curie salt feed batches through the Salt Waste Processing Facility and then implementing the Next Generation Solvent at the Salt Waste Processing Facility to increase throughput. Additionally, the Savannah River Site will accelerate the closure of Tank 9, 10, and 11 which reside below the water table. These tanks carry the highest liability to the Liquid Waste Mission and will be accelerated to reduce this risk as early as possible. The FY 2024 request includes other project cost and total estimated cost funding for two line-item construction projects: Saltstone Disposal Units #8 and #9 project is \$33,216,522 (includes \$31,250,000 in Construction costs and \$1,966,522 in Other Project Costs funds) and Saltstone Disposal Units 10-12 project is \$61,250,000 (includes \$56,250,000 of Design and Construction and \$5,000,000 of Other Project Cost funds).

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, and hazardous 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; the South Carolina Department of Natural Resources for maintaining the Crackerneck Wildlife Management Area and Ecological Preserve; the South Carolina Department of Health and Environmental Control for the implementation of the DOE and South Carolina Agreement in Principle for the Environmental Surveillance and Oversight Program for independent and periodic monitoring of discharges, emissions, or biological parameters necessary and required to verify the effectiveness of the DOE programs; and the Environmental Protection Agency for oversight and implementation of the Federal Facility Agreement.

The Safeguards and Security Program will continue to protect nuclear materials, sensitive weapon and nuclear material production technology, equipment, information facilities, and support the Savannah River Site remediation and cleanup programs through overall site access security and protection of personnel and government property as part of EM's overall landlord responsibilities for the 310 square mile nuclear reservation. 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 and across the EM complex by providing integrated solutions that are both modern and practical to address complex environmental cleanup and closure, as well as long-term surveillance and maintenance problems. The Laboratory leads the Network of National Laboratories for Environmental Management and Stewardship and administers the EM Minority Serving Institutions Partnership Program. The Laboratory plays a critical role for the National Nuclear Security Administration in both weapons and non-proliferation programs by providing essential, enduring, and increasing surveillance, operational/production technology advancement, and research and development services to the National Nuclear Security Administration Defense Program; conducts significant nonproliferation research and development for the National Nuclear Security Administration and other national security missions; and manages the Mobile Plutonium Facility. The Laboratory also supports Offices of Science, Legacy Management and Cybersecurity, Energy Security, and Emergency Response.

The Infrastructure and Land Management Program manages a portfolio of general facilities and utilities 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 would impact the reliability of our safety systems, waste processing and disposal, tank closure, and other cleanup mission completion.

Also included in Infrastructure and Land Management is the line-item construction project 18-D-402, Emergency Operations Center Replacement Project (\$34,733,000 for construction contract award and 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.

FY 2023 and 2024 Key Milestones/Outlook

- (November 2022) Appendix E for FY 2023
- (November 2022) Federal Facility Compliance Act Site Treatment Plan Annual Update
- (December 2022) Submit Sixth Five-Year Remedy Review Report for Savannah River Site Operable Units with Operating Equipment
- (December 2022) Complete Operational Closure of F Tank Farm Diversion Boxes 5 and 6
- (January 2023) Issue Sixth Five-Year Remedy Review Report for Savannah River Site Operable Units with Geosynthetics. and/or Stabilization systems
- (April 2023) Start Remedial Action Lower Three Run Integrator Operable Unit
- (August 2023) Submit Early Construction and Operational Disposal Site N-1, 631-2G and 690-N Operable Unit Corrective Measures Implementation/Remedial Action Implementation Plan
- (August 2023) Submit Early Construction and Operational Disposal Site N-1, 631-2G and 690-N Operable Unit Land Use Control Implementation Plan
- (September 2023) Issue Explanation of Significant Differences (ESD) from Current ROD for Wetland at Dunbarton Bay
- (September 2023) 2023 Resource Conservation and Recovery Act Permit Renewal Application for General Information (Volume I, Revision 0)
- (September 2023) 2023 Resource Conservation and Recovery Act Permit Renewal Application for the Mixed Waste Management Facility (Volume XXIII, Rev.0)
- (September 2023) 2023 Resource Conservation and Recovery Act Permit Renewal Application for the Sanitary Landfill
- (September 2023) Submit Rev 0. of the F-Area Diversion Boxes FDB-5 and -6 Explanation of Significant difference (ESD) to the Interim Record of Decision, F-Area Tank Farm, Tanks 17 and20
- (November 2023) Appendix E for FY 2024
- (December 2023) Issue Record of Decision Early Construction and Operational Disposal Site N-1 (South of N Area), Central Shops Scrap Lumber Pile (631-2G), Building 690-N
- (February 2024) Submit Sixth Five-Year Remedy Review Report for Savannah River Site Operable Units with Operating Equipment
- (March 2024) Submit ECODS L-3 and L-Area Rubble Pits OU Rev. 1 RFI/RI Report with BSA and CMS/FS (3 milestones)
- (March 2024) Issue F-Area Diversion Boxes FDB-5 and -6 Explanation of Significant difference (ESD) to the Interim Record of Decision, F-Area Tank Farm, Tanks 17 and20
- (September 2024) Initiate RI Field Start for Building 716-A, Automotive Repair Facility and Building 725-A, Paint Shop
- (September 2024) Initiate RFI/RI Field Start of Sandblast Area CMH-002 and Spill on 02/01/57 from 904-44G

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 accomplish the environmental cleanup and risk reduction objectives at Savannah River Site. There are several key agreements, laws, and regulations to govern cleanup of the Site:

- 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 FY 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 FY 2001 (Public Law 106-398) as amended by Section 3115 of the National Defense Authorization Act for FY 2004 (Public Law 108-136). (50 U.S. Code § 2633 continuation of processing treatment and disposal of legacy nuclear materials.)
- 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 FY 2005

In relation to PBS-14C, Radioactive Liquid Tank Waste Stabilization and Disposition, negotiation of new Federal Facility Agreement milestones was successfully completed and agreement signed on December 27, 2022. This negotiation resolved all elements of the Savannah River Site (SRS) Federal Facility Agreement (FFA) Appendix L, Statement of Dispute Resolution, entered in November 2007 and most recently revised in the Suspension Agreement (April 2019), with the exceptions of Paragraphs 9.b and 18 from the 2007 Statement of Dispute Resolution in Appendix L, by committing to implement the actions in this 2022 High Level Waste Tank Milestones Agreement. The new Liquid Waste milestones consist of commitments of Preliminary Cease Waste Removal from 16 non-compliant storage tanks starting in FY 2025 and commitments to complete operational closure of 16 non-compliant storage tanks starting in FY 2029. There is one additional regulatory commitment to submit Revision 0 of the F-Area Diversion Boxes FDB-5 and -6 Explanation of Significant Difference (ESD) to the Interim Record of Decision, F-Area Tank Farm, Tanks 17 and 20 by 9/30/2023 and to issue this document by 3/1/2024.

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, 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 follow-on acquisition for these services is currently in the acquisition-planning phase.
- Savannah River Mission Completion LLC: Contract covers liquid radioactive waste storage, treatment, stabilization, and disposition and cleaning and closing of the liquid radioactive waste storage tanks and ancillary equipment. The Integrated Mission Completion Contract was 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 a DOE Environmental Management "END STATE" Indefinite-Delivery/Indefinite-Quantity Contract with an ordering period of up to 10 years from the effective date of Contract and one option to extend the contract for five years.
- Centerra Group, LLC: Contract covers the protective services at the Savannah River Site. It is a cost-plus-award-fee contract. The follow-on procurement acquisition for these services is currently in the acquisition-planning phase.
- Ameresco Federal Solutions: Contract is for the construction and operation of the Biomass Cogeneration Facility, steam, and electrical power 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 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 soil consistent with regulatory agreements. DOE's completion strategy provides a comprehensive risk-based approach to the legacy cleanup project, such as dispositioning radioactive liquid waste through vitrification of the 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 soil 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 2022 Enacted	FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 Enacted	FY 2024 Request vs FY 2023 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	889,365	851,660	880,323	+28,663	+3%
Construction					
18-D-401: Saltstone Disposal Unit #8/9, SR (SR-0014C)	68,000	49,832	31,250	-18,582	-37%
20-D-401: Saltstone Disposal Unit 10 11 12	19,500	37,668	56,250	+18,582	+49%
	976,865	939,160	967,823	+28,663	+3%

Savannah River Legacy Pensions

SR-0101 / Savannah River Legacy Pensions	130,882	132,294	65,898	-66,396	-50%
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Savannah River National Laboratory O&M

SR-SRNL-0100 / SRNL Infrastructure and Support	0	41,000	42,000	+1,000	+2%
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Savannah River Risk Management Operations

SR-0011C / NM Stabilization and Disposition	314,760	340,008	301,608	-38,400	-11%
SR-0013 / Solid Waste Stabilization and Disposition	45,968	45,509	45,373	-136	+0%
SR-0030 / Soil and Water Remediation & Facility Deactivation and Decommissioning	55,305	60,455	62,514	+2,059	+3%
SR-0041 / Surveillance, Maintenance, and Deactivation	25,500	21,463	22,582	+1,119	+5%
SR-0042 / Infrastructure and Land Management					
Operating	17,557	18,429	21,032	+2,603	+14%
Construction					
18-D-402: Emergency Operations Center	8,999	25,568	34,733	+9,165	+36%
19-D-701: SR Security System Replacement	5,000	12,000	0	-12,000	-100%
	31,556	55,997	55,765	-232	+0%

**Environmental Management/
Savannah River**

	FY 2022 Enacted	FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 Enacted	FY 2024 Request vs FY 2023 Enacted (%)
Subtotal, Savannah River Risk Management Operations	473,089	523,432	487,842	-35,590	-7%
SR Community and Regulatory Support					
SR-0100 / Savannah River Community and Regulatory Support	11,805	12,137	12,389	+252	+2%
Total, Savannah River Site	1,592,641	1,648,023	1,575,952	-72,071	-4%
Safeguards and Security					
SR-0020 / Safeguards and Security	164,444	159,848	162,933	+3,085	+2%
Total, Defense Environmental Cleanup	1,757,085	1,807,871	1,738,885	-68,986	-4%

**Savannah River
Explanation of Major Changes (\$K)**

FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 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

- Liquid Waste Operations increased by \$20,637,000 due to increase of PBS share in site-wide services, Infrastructure work in Tank Farms and Defense Waste Processing Facility.
- Salt Waste Processing Operations increased by \$3,132,000 due to the increase in preparation activities for tanks and the increase in required manpower primarily consisting of laboratory personnel at the Salt Waste Processing Facility.
- Regulatory Commitments increased by \$4,894,000 due to the acceleration of Tanks 9, 10, 11, and 15. The increase in value was offset by the completion of the Tank Closure Cesium Removal demonstration. Tank Closure Cesium Removal operations will not be conducted during FY 2024. Additionally, the F-Tank Farm Diversion Box 5 and 6 closure activities will complete in FY 2023.

	939,160	967,823	+28,663
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Savannah River Legacy Pensions

SR-0101 / Savannah River Legacy Pensions

- Expected legacy pension obligation has decreased.

	132,294	65,898	-66,396
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Savannah River National Laboratory

SR-SRNL-0100 / SRNL Infrastructure and Support

- No significant change.

	41,000	42,000	+1,000
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Savannah River Risk Management Operations

SR-0011C / NM Stabilization and Disposition

- The decrease is attributed to completion of critical infrastructure projects on H/K/L Nuclear Facilities (\$10,800,000) as well as the completion of Phase I activities of dedicated H-Canyon Sludge Batch Tank (\$27,600,000).

	340,008	301,608	-38,400
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SR-0013 / Solid Waste Stabilization and Disposition

- No significant change.

	45,509	45,373	-136
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	FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 Enacted
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SR-0030 / Soil and Water Remediation & Facility Deactivation and Decommissioning

- The increase supports remedial action for Lower Three Runs integrator operable unit and remedial investigation field starts for A-Area buildings, and remedial/dismantlement and removal activities associated with Savannah River Flood Plain and Swamps watershed and Upper Three Runs treatment systems

60,455 62,514 +2,059

SR-0041 / Surveillance, Maintenance, and Deactivation

- No significant change.

21,463 22,582 +1,119

SR-0042 / Infrastructure and Land Management

- The increase is attributed to the additional costs for Forest Service and indirects. (+\$2,603,000).
- Emergency Operations Center project (+\$9,165,000) to support fixed-price construction contract award and long lead procurements.
- Security System Replacement Project (-12,000,000) pending planning for site transition from Office of Environmental Management to the National Nuclear Security Administration.

55,997 55,765 -232

SR Community and Regulatory Support

SR-0100 / Savannah River Community and Regulatory Support

- No significant change.

12,137 12,389 +252

Safeguards and Security

SR-0020 / Safeguards and Security

- Increase supports implementation of Executive Order 14028 cyber security requirements and new security force contract.

159,849 162,933 +3,084

Total, Savannah River	1,807,872	1,738,885	-68,987
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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 construction and demolition, hazardous, low-level radioactive waste and mixed low-level radioactive waste and transuranic wastes. 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 and approximately 30 cubic meters of hazardous and mixed low-level waste annually. As of January 1, 2023, only 37 cubic meters of legacy mixed low-level radioactive waste remains in storage. For transuranic waste, the Site generates approximately 30 cubic meters per year. As of January 1, 2023, 313 cubic meters of legacy transuranic waste remains in storage. Approximately 65 shipments to the Waste Isolation Pilot Plant are expected to be required to complete disposal of the Site's legacy 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 2023 Enacted	FY 2024 Request	Explanation of Changes FY 2024 Request vs FY 2023 Enacted
\$45,509,000	\$45,373,000	-\$136,000
<p><u>Solid Waste Management Program (\$45,509,000)</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 85 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 (\$45,373,000)</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 100 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 5,100 m³ of newly generated low-level radioactive waste. Support treatment/storage/disposal of up to 20 m³ of mixed low-level radioactive waste. Support treatment/storage/disposal of up to 50 m³ of hazardous waste. Support treatment/storage/disposal of sanitary waste and upgrade of waste tracking reporting database. 	<ul style="list-style-type: none"> No significant change.

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 soil, groundwater, streams (and associated wetlands) and waste sites, which is governed through enforceable regulatory milestones and commitments in accordance with Resource Conservation and Recovery Act and other Permits; Comprehensive Environmental Response, Compensation, and Liability Act; and the Federal Facility Agreement to reduce risk and to protect groundwater aquifers and surface waters from the spread of contamination by addressing 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 38 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 in total area) 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 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 United States Department of Agriculture 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 2024 Request supports the next phase of enforceable regulatory cleanup 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

The cleanup mission is the remediation of soil and water and the deactivation and decommissioning of excess facilities constructed in support of nuclear materials production.

Cleanup and decommissioning will continue until all areas at the Savannah River Site are completed. Units at which waste is left at levels precluding unrestricted use 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.

An evaluation of potential closure alternatives identified permanent in situ decommissioning as having the best balance of trade-offs when compared to the complete demolition and removal of Building 235-F. In situ decommissioning will be far less hazardous to workers than demolition and removal, 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. In situ decommissioning is also estimated to cost over \$100 million less than demolition and removal. The permanent decommissioning of Building 235-F will be a major step toward risk reduction and final closure of the nuclear F Area of the Savannah River Site.

Soil and Water Remediation & Facility Deactivation and Decommissioning (PBS: SR-0030)

Activities and Explanation of Changes

FY 2023 Enacted	FY 2024 Request	Explanation of Changes FY 2024 Request vs FY 2023 Enacted
\$60,455,000	\$62,514,000	+\$2,059,000
<u>Soil and Water Remediation (\$48,455,000)</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. 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, 	<u>Soil and Water Remediation (\$51,314,000)</u> <ul style="list-style-type: none"> Achieve compliance with 49 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 41 regulatory-required soil and groundwater remedial systems (3 active & 38 passive) to protect human health, groundwater aquifers, site streams, and the Savannah River. 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 	<ul style="list-style-type: none"> The increase supports remedial action for Lower Three Runs integrator operable unit and remedial investigation field starts for A-Area buildings, and remedial/dismantlement and removal activities associated with Savannah River Flood Plain and Swamps watershed and Upper Three Runs treatment systems

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

235-F Deactivation and Decommissioning
(\$12,000,000)

- Supported surveillance & maintenance and development of CD-0/1 project documentation.

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.
- Continuation of Remedial Action for the Lower Three Runs Integrator Operable Unit
- Initiate Field Start for Building 716-A, Automotive Repair Facility and Building 725-A, Paint Shop.

235-F Deactivation and Decommissioning
(\$11,200,000)

- Support surveillance & maintenance and the preliminary cost estimate for the 235-F decommissioning. And continued work on the decommissioning plan with design, regulatory and nuclear safety scope.

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 (Consisting of F-Area Complex Facilities, as well as the Receiving Basin for Off-Site Fuels Facility in H-Area), deactivation of 235-F Pu Facility, F/H Laboratory Facility, 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, 235-F Pu Facility, F/H Analytical Laboratory, 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 also 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 risks 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.

F/H Analytical Laboratory

The F/H Laboratory performed analytical sampling from radiochemical processing and radiological environmental monitoring programs at the site for over 55 years. To reduce costs and streamline capabilities for analytical services at the Site, DOE initiated a multi-year project to relocate analytical services and methods from the F/H analytical laboratory facilities in F Area to Savannah River National Laboratory's main laboratory in A Area. In FY 2023 the F/H laboratory became excess and is undergoing a planned multi-year facility deactivation.

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 housed several deactivated processing lines including the Plutonium Fuel Form facility, Actinide Billet Line, Plutonium Experimental Facility, and the old metallography lab glovebox.

The project to deactivate the 235-F facility was started in FY 2020 and was completed in early FY 2023. The deactivation project involved the shutdown of all active structures, systems, and components in Building 235-F along with electrical/mechanical isolation of the building. The 235-F decommissioning project was initiated in FY 2023 under PBS SR-0030.

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

Activities and Explanation of Changes

FY 2023 Enacted	FY 2024 Request	Explanation of Changes FY 2024 Request vs FY 2023 Enacted
\$21,463,000	\$22,582,000	+\$1,119,000
<p><u>Facility Surveillance and Maintenance (\$18,500,000)</u></p> <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. <p><u>F/H Laboratory (\$2,963,000)</u></p> <ul style="list-style-type: none"> Completed deactivation of three areas/zones inside F/H lab. 	<p><u>Facility Surveillance and Maintenance (\$20,039,000,000)</u></p> <ul style="list-style-type: none"> Continue surveillance and maintenance of the F-Area Complex Facilities including F-Canyon, FB Line, and F/H laboratory, as well as the Receiving Basin for Off-Site Fuels Facility. <p><u>F/H Laboratory Deactivation (\$2,543,000)</u></p> <ul style="list-style-type: none"> Supports deactivation of 3 additional areas/zones inside F/H lab. 	<ul style="list-style-type: none"> No significant change.

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 infrastructure and land management activities to sustain natural resources and maintenance of Site's secondary roads and bridges. This PBS also 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.

Infrastructure primarily that supports the Site's electric power transmission was constructed in the early 1950s. It is oversized for current missions, deteriorating, and inefficient. This presents resiliency risks to the Site's programs and missions.

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 percent 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 (USFS), Savannah River manages approximately 170,000 acres of onsite natural resources and forest, which continues USFS stewardship since 1951. These forest management activities include federally required threatened and endangered species habitat management, prescribed fire and wildland fuel management, wildlife habitat and nuisance animal management, wetland restoration, timber sales and forest health, as well as approximately 1,200 miles of secondary and forest roads.

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 first designated National Environmental Research Park, which was established at SRS 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 as required by state and federal regulations. The contractor abides by state and federal regulations addressing cultural resource management and preservation from the period of the Cold War to the present day.

Infrastructure and Land Management (PBS: SR-0042)

Activities and Explanation of Changes

FY 2023 Enacted	FY 2024 Request	Explanation of Changes FY 2024 Request vs FY 2023 Enacted
\$55,997,000	\$55,765,000	-\$232,000
<u>Land Management (\$18,429,000)</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 500. Completed 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 	<u>Infrastructure & Land Management (\$21,032,000)</u> <ul style="list-style-type: none"> Conduct general Site functions including general site infrastructure projects, land management activities to sustain natural resources and maintenance of Site’s secondary roads and bridges. 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 birds in 1986 and now stands at approximately 500. 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 	<ul style="list-style-type: none"> The increase is attributed to the additional costs for Forest Service and indirects. (+\$2,603,000). Emergency Operations Center project (+\$9,165,000) to support fixed-price construction contract award and long lead procurements. Security System Replacement Project (-12,000,000) pending planning for site transition from the Office of Environmental Management to the National Nuclear Security Administration.

- 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 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.

19-D-701 - Savannah River Site Security System Replacement Project (\$12,000,000)

- Started K Area Argus installation and construction.

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 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.

Capital Projects (\$34,733,000)

- Supports construction award and start for the Emergency Operations Center/Savannah River Site Operations Center facilities.

18-D-402 – Emergency Operations Center

Replacement Project (\$25,568,000)

- Completed Final Design and award construction contract.

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, allowing proper disposition of the material thereby reducing proliferation risks and long-term costs associated with storage of the materials. The approved Accelerated Basin De-inventory mission allows for the dissolution of Spent Nuclear Fuel; however, chemical separation and recovery of specific isotopes can be achieved through H-Canyon, if required.

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 the Department of Commerce (National Institute of Standards and Technology reactor). As of January 1, 2023, L-Basin is approximately 85 percent full for Material Test Reactor type fuel storage, and 70 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 of 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 stored in both drums and tanks.

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

Activities and Explanation of Changes

FY 2023 Enacted	FY 2024 Request	Explanation of Changes FY 2024 Request vs FY 2023 Enacted
\$340,008,000	\$301,608,000	-\$38,400,000
<p><u>Surveillance and Maintenance– H-Area (\$170,062,000)</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. 	<p><u>Surveillance and Maintenance– H-Area (\$172,725,000)</u></p> <ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> The decrease is attributed to completion of critical infrastructure projects on H/K/L Nuclear Facilities (\$10,800,000) as well as the completion of Phase I activities of dedicated H-Canyon Sludge Batch Tank (\$27,600,000).

- 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.

Surveillance and Maintenance – K-Area
(\$74,761,000)

- 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.
- Supported shipments of Pu material to 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.

H-Canyon Processing (\$13,800,000)

- Supports additional dissolutions of Spent Nuclear Fuel and the discard of material to H-Area Tank Farm.

Surveillance and Maintenance – K-Area
(\$73,550,000)

- 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.
- Support shipments of Pu material to Waste Isolation Pilot Plant disposal.

Surveillance and Maintenance – L-Area
(\$44,955,000)

- 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.

H-Canyon Processing (\$10,378,000)

- Supports additional dissolutions of Spent Nuclear Fuel and the discard of material to H-Area Tank Farm.

H-Canyon Dedicated Storage Sludge Batch Tank

(\$27,600,000)

- Provided engineering and procure services to complete phase I activities for modifying existing salt waste tank into sludge batch receipt tank.

Nuclear Facilities Critical Infrastructure Projects

(\$10,800,000)

- Replaced 3 roofs in H- and K- Areas.
- Replaced K-Area Fire Panel.

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 230,000,000 curies currently stored in 43 underground storage tanks (as of August 2022).

The Liquid Waste Program has reduced risk so far (as of January 2023) by:

- Producing 4,346 canisters with 64,192,547 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 4,829,644 gallons of salt waste (321,345 in Hot Commissioning and 2,064,319 for One Year Operation) through the Salt Waste Processing Facility.
- Processing 371,188 gallons of salt waste through Tank Closure Cesium Removal.
- Disposing over 34,171,424 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.

A new strategy for the completion of the liquid waste program mission is being developed and implemented to achieve significant risk and financial liability reduction that provides the best overall optimal solution to Site accelerated completion and closure.

To support completion of the liquid waste program mission, acceleration of risk reduction will be pursued by optimizing the fully integrated Savannah River Site Liquid Waste system. This will initially be performed by processing higher curie salt feed batches through the Salt Waste Processing Facility system and then implementing the Next Generation Solvent at the Salt Waste Processing Facility to increase throughput. Additionally, closure of Tank 9, 10, and 11 which reside below the water table of the Savannah River Site will be accelerated. These tanks carry the highest liability to the Liquid Waste mission and will be accelerated to reduce this risk as early as possible. Optimizations will continue to be developed, informed by system modeling, to further accelerate the Liquid Waste mission.

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 January 2023, approximately 34,200,000 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 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 a permitted outfall referred to as the National Pollutant Discharge Elimination System. 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 January 2023, the Defense Waste Processing Facility has produced 4,346 canisters immobilizing 64,193,000 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 percent 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 safely store about 6,864 canisters, which includes double stacking in Glass Waste Storage Building 1. Based on engineering evaluation and successful physical demonstration, canister double stacking will also be performed in Glass Waste Storage Building 2. Modifications to allow for double stacking operations will be initiated in FY2024. 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 the 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.

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 93 percent of the 34,200,000 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 which allowed for 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 processed a total of 2,385,664 gallons of salt waste by the end of the One Year Operations (321,345 in Hot Commissioning and 2,064,319 for 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 is 6,000,000 gallons processing rate per year and will be about 9,000,000 gallons processing rate per year after implementing the Next Generation Solvent. Processing salt waste through the Salt Waste Processing Facility is needed to disposition most 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 FY 2022, the Salt Waste Processing Facility processed 1,648,690 gallons of available feed and 876,830 in FY2023 (as of January 2023) after accounting for outages to perform Glycolic Flowsheet conversion in Defense Waste Processing Facility for a grand total of 4,829,644 since SWPF start of operations. The Salt Waste Processing Facility is planned to process, in FY 2023, up to 6 million gallons making it 9 million gallons total volume to be processed since start of Hot Commissioning in October 2020. In FY 2024, it is assumed that the Salt Waste Processing Facility will process a total volume of up to 6 million gallons resulting in 15 million gallons since the Salt Waste Processing Facility was fully integrated into the Liquid Waste System.

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 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 Unit 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 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 Critical Decision-2/3 was approved in September 2021 and site preparation activities began in FY 2022 and construction in FY 2023. 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 2023 Enacted	FY 2024 Request	Explanation of Changes FY 2024 Request vs FY 2023 Enacted
\$939,160,000	\$967,823,000	+\$28,663,000
<p><u>Liquid Waste Operations (\$696,180,000)</u></p> <ul style="list-style-type: none"> • Pay PBS share of site-wide services and 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 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. 	<p><u>Liquid Waste Operations (\$716,817,000)</u></p> <ul style="list-style-type: none"> • Pay PBS share of site-wide services and 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 remaining spaces. • Begin modification of Glass Waste Storage Building #2 for double stacking operations. • Perform Tank Farm operations activities, including waste removal and evaporator operations. • Operate Defense Waste Processing Facility to produce 200-260 canisters (dependent on salt processing) of vitrified high-level waste. • Continue Melter 5 Procurement preparation Perform tank modifications on 3 tanks to support bulk waste removal (Tanks 33, 34, 39) for Sludge Batches to feed Defense Waste Processing Facility. • Continue processing in Defense Waste Processing Facility of Sludge Batch 10. • Continue sludge washing and qualification of Sludge Batch 11. 	<ul style="list-style-type: none"> • Liquid Waste Operations increased by \$20,637,000 due to increase of PBS share in site-wide services, Infrastructure work in Tank Farms and Defense Waste Processing Facility. • Salt Waste Processing Operations increased by \$3,132,000 due to the increase in preparation activities for tanks and increase in required manpower primarily laboratory personnel at the Salt Waste Processing Facility. • Regulatory Commitments increased by \$4,894,000 due to the acceleration of Tanks 9, 10, 11, and 15. The increase in value was offset by the completion of the Tank Closure Cesium Removal demonstration. Tank Closure Cesium Removal operations will not be conducted during FY 2024. Additionally, the F-Tank Farm Diversion Box 5 and 6 closure activities will complete in FY 2023.

- 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 4.5 million gallons per year rate. Plan to process 3.652 million gallons in FY 2023 for a total volume of 7,604,000 gallons since SWPF start of operations.
- 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 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.

Salt Waste Processing Operations (\$139,479,000)

- Operate Salt Waste Processing Facility at 6.0 million gallons per year rate. Plan to process an equivalent volume of up to 5.795 million gallons of higher curie salt batches .
- Continue 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 needed for salt batches to feed the Salt Waste Processing Facility.
- Perform tank modifications on 4 tanks (Tanks 28, 31, 36, 46, 47) for salt dissolution 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 Items.

Saltstone Disposal (\$87,500,000)

- Complete construction of Saltstone Disposal Unit 9.
- Complete site preparation activities and initiate construction activities for Saltstone Disposal Unit 10.
- Begin site preparation activities and initiate construction preparation for Saltstone Disposal Unit 11 and 12.
- Support Saltstone Production Facility operations to support Salt Waste Processing Facility

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
- Laid up operations of Tank Closure Cesium Removal project in to accelerate closure of tanks 9 – 11 and to focus on SWPF operations to meet revised 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.
- Prepare tanks 9, 10, and 11 for accelerated operational closure
- Completed 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

production rates by completing construction of Saltstone Disposal Units.

Regulatory Commitments (\$24,027,000)

- Continue preparation of Tanks 1, 2 and 14 to support newly agreed FFA commitments.
- Complete Tanks 9 and 10 Salt Dissolution, heel removal, and Annulus Cleaning activities to accelerate closure in support of newly agreed FFA commitments.
- Complete heel removal installation and heel removal operation in support of newly agreed FFA commitments.
- Complete heel removal and annulus cleaning on Tank 15 in support of newly agreed FFA commitments.

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 2023 Enacted	FY 2024 Request	Explanation of Changes FY 2024 Request vs FY 2023 Enacted
\$132,294,000	\$65,898,000	-\$66,396,000
<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 decreased.

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 2023 Enacted	FY 2024 Request	Explanation of Changes FY 2024 Request vs FY 2023 Enacted
\$12,137,000	\$12,389,000	+\$252,000
<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, 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 	<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 management of the Crackerneck Wildlife Management Area and Ecological Reserve (\$170,242). • 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 (\$3,983,565). • Provide support to Georgia and South Carolina Emergency Management Support (\$542,572). • Support Interagency Agreement for the Environmental Protection Agency, Region 4 	<ul style="list-style-type: none"> • No significant change.

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).

oversight of the Federal Facility Agreement (\$300,000).

- Provide support to the Site-Specific Advisory Board (Savannah River Citizen’s Advisory Board) (\$329,553).
- 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 2023 Enacted	FY 2024 Request	Explanation of Changes FY 2024 Request vs FY 2023 Enacted
\$159,849,000	\$162,933,000	+\$3,084,000
<u>Safeguards and Security Program (\$144,668,000)</u> <ul style="list-style-type: none"> • 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. • Supported infrastructure maintenance and upgrades. 	<u>Safeguards and Security Program (\$146,172,000)</u> <ul style="list-style-type: none"> • 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. • Support infrastructure maintenance and upgrades. 	<ul style="list-style-type: none"> • Increase supports implementation of Executive Order 14028 cyber security requirements and new security force contract.

Cyber Security (\$15,180,027)

- 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.

Cyber Security (\$16,761,000)

- 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.
- Supports Executive Order 14028 cyber security requirements.

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 operations, maintenance, and utilities obligations for Savannah River National Laboratory.

The PBS supports EM’s share of the operations, maintenance, and utilities for Savannah River National Laboratory facilities. National Nuclear Security Administration will contribute an equal amount through their own funding source.

SRNL Infrastructure and Support (PBS: SR-SRNL-0100)

Activities and Explanation of Changes

FY 2023 Enacted	FY 2024 Request	Explanation of Changes FY 2024 Request vs FY 2023 Enacted
\$41,000,000	\$42,000,000	+\$1,000,000

<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"> Funds EM’s share of the Savannah River National Laboratory Operations and Maintenance. Supports the operations and maintenance of more than 20 buildings and major support structures in the limited area that includes more than 320,000 square feet of category II radiological facilities. Assures facilities are available to meet laboratory analytical and Research and Development activities supporting DOE missions. Assures nuclear facility safety bases are maintained in support of safe nuclear operations. 	<ul style="list-style-type: none"> No significant change.
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**Savannah River
Capital Summary (\$K)**

Total	Prior Years	FY 2022 Enacted	FY 2022 Actuals	FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs. FY 2023 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	0
Minor Construction (<\$25M)	78,010	6,391	0	2,730	0	0	0
Total, Capital Operating Expenses	78,010	6,391	0	2,730	0	0	0

Minor Construction (Total Project Cost (TPC) <\$25M)

Savannah River National Lab (Indirect Funded)

Y-710 Renovate Lab C-159/C-163 – Install (3) Gloveboxes/Hoods & Services	6,000	3,531	0	920	0	0	0
Y-847 SRNL New Facility (Non-RAD) 767	17,500	10	0	10	0	0	0
New Project Y-### SRNL New Facility (Non-RAD) 767-1A	20,000	0	0	0	0	0	0
Y-815 Control Room System Replacement Delta V	7,510	2,850	0	1,800	0	0	0
New Project Y-### Design and Construct a Seismic Qualified Material Storage Vault 773A-B070	12,000	0	0	0	0	0	0
New Project Y-### Replace Roof Systems in the SRNL Campus 773-41A, 773-42A, & 773-43A, Sand Filters	15,000	0	0	0	0	0	0
Total, Savannah River National Lab	78,010	6,391	0	2,730	0	0	0
Total, Capital Summary	78,010	6,391	0	2,730	0	0	0

Note: This table reflects notification to Congress of SRNL minor construction projects including Institutional General Plant Projects in progress and planned to start in FY 2024. It represents planning under the new SRNL M&O contract. Except for previous year costs, previous year table values associated with the Site M&O contract were not carried forward. This table constitutes a rebaselining of minor construction projects with EACs >\$5M and <\$25M for SRNL that are funded through SRNL indirects.

**Savannah River
Construction Summary (\$K)**

	Total	Prior Years	FY 2022 Enacted	FY 2022 Actuals	FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs. FY 2023 Enacted
18-D-401, Saltstone Disposal Unit #8 and #9, SR (SR-0014C)							
Total Estimate Cost (TEC)	255,345	93,577	65,500	65,500	49,832	31,250	-18,582
Other Project Costs (OPC)	24,655	13,064	4,155	4,155	4,125	1,966	-10,905
Total Project Cost (TPC) 18-D-401	280,000	106,641	69,655	69,655	53,957	33,216	-20,741
18-D-402, Emergency Operations Center, SR (SR-0042)							
Total Estimate Cost (TEC)	TBD	15,051	8,999	6,616	25,568	34,733	+9,165
Other Project Costs (OPC)	TBD	4,000	0	0	0	0	0
Total Project Cost (TPC) 18-D-402	TBD	19,051	8,999	6,616	25,568	34,733	+9,165
19-D-701, SR Security Replacement System, SR (SR-0042)							
Total Estimate Cost (TEC)	TBD	14,525	5,500	5,500	12,000	0	-12,000
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	5,500	5,500	12,000	0	-12,000
20-D-401, Saltstone Disposal Unit #10, #11 and #12, SR (SR-0014C)							
Total Estimate Cost (TEC)	451,507	1,062	19,500	17,807	37,668	56,250	+18,582
Other Project Costs (OPC)	44,493	1,350	4,400	4,400	4,250	5,000	+750
Total Project Cost (TPC) 20-D-401	496,000	2,412	23,900	22,207	41,918	61,250	+19,332

**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 2024 Request for the Saltstone Disposal Units 8/9 project is \$33,216,522 (Includes \$31,250,000 in Design and Construction costs and \$1,966,522 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 Units 6 and 7, 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 2023 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 Level 3 (working toward Level 4) 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
FY 2024	3/17/2017	12/11/2017	12/11/2017	05/01/2019	4Q2023	05/01/2019		9/30/2024

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, Phased Design was utilized as a tailoring strategy

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

**Environmental Management/
Savannah River/18-D-401 Saltstone
Disposal Units 8/9**

FY 2024 Congressional Justification

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
FY 2024	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, 34,000,000 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 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

**Environmental Management/
Savannah River/18-D-401 Saltstone
Disposal Units 8/9**

FY 2024 Congressional Justification

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	
Capacity	Provide saltstone grout containment capacity of no less than 30,000,000 gallons.	N/A
Throughput	Provide infrastructure capable of delivering saltstone grout at 100 gallons per minute minimum.	N/A
Leak Detection	Install a leak detection system in accordance with the Z-Area Industrial Solid Waste Landfill Permit requirements.	N/A

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
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

(dollars in thousands)

	Appropriations	Obligations	Costs
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	31,250	31,250	31,250
Outyears	15,186	15,186	15,186
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	31,250	31,250	31,250
Outyears	15,186	15,186	15,186
Total, TEC	255,345	255,345	255,345
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	1,966	1,966	1,966
Outyears	1,345	1,345	1,345
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

Environmental Management/
Savannah River/18-D-401 Saltstone
Disposal Units 8/9

FY 2024 Congressional Justification

(dollars in thousands)

	Appropriations	Obligations	Costs
FY 2022	69,655	69,655	69,655
FY 2023	53,957	53,957	53,957
FY 2024	33,216	33,216	33,216
Outyears	16,531	16,531	16,531
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
Contingency, TEC			
	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
Total, OPC			
Total, Contingency	10,104	10,104	10,104

Environmental Management/
Savannah River/18-D-401 Saltstone
Disposal Units 8/9

FY 2024 Congressional Justification

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total, TPC	280,000	280,000	280,000
Total, Contingency	43,729	43,729	43,729

Schedule of Appropriation Requests

Request		Prior Years	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	Outyears	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
FY 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						36,986
FY 2021	TEC	0	500	7,577	20,000	65,500					93,577
	OPC	0	2,409	3,250	3,250	4,155					13,064
	TPC	0	2,909	10,827	23,250	69,655					106,641
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		208,909
	OPC	0	2,409	3,250	3,250	4,155	4,155	4,125	3,311		21,344
	TPC	0	2,909	10,827	23,250	69,655	69,655	53,957	49,747		280,000
FY 2024	TEC	0	500	7,577	20,000	65,500	65,500	49,832	31,250	15,186	255,345
	OPC	0	2,409	3,250	3,250	4,155	4,155	4,125	1,966	1,345	24,655
	TPC	0	2,909	10,827	23,250	69,655	69,655	53,957	33,216	16,531	280,000

Environmental Management/
Savannah River/18-D-401 Saltstone
Disposal Units 8/9

FY 2024 Congressional Justification

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 2024 request for the Emergency Operations Center Replacement Project is \$34,733,000 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 \$93,671,000, based on a Class 3 Cost Estimate, and Critical Decision -4 range of FY 2022 to FY 2028. The project has completed final design and the Office of Project Management will perform an Independent Cost Estimate to be followed by an External Independent Review to support CD-2/3 approval. CD-2/3 approval is expected in late FY 2023.

Significant Changes

This Construction Project Data Sheet is an update of the FY 2023 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	4Q FY 2022	02/24/2022	4Q FY 2022	N/A	TBD
FY 2024	01/05/2017	6/23/2020	6/23/2020	4Q FY2023	02/24/2022	4Q FY 2023	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

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 2021	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
FY 2024	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.

2. Project Scope and Justification

Scope

The scope of this project is to design and construct a new modern, code-compliant emergency management facility necessary to respond to emergency event scenarios. The primary Emergency Operations Center (EOC) and 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 new facility will be approximately 31,000 square feet in size to hold both the emergency response functions and the 911 functions, as well as an additional administrative wing to co-locate the necessary personnel for daily oversight of emergency management.

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. National Fire Protection Association Standard 1221 requires the (Savannah River Site Operations Center) to be manned 24 hours per day, in addition to other specialized construction 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 functions at SRS;
- Construct new facilities to house the primary EOC and 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	0
FY 2023	0	0	0
Outyears	TBD	TBD	TBD
Total, Design	TBD	TBD	TBD

Construction

FY 2021	5,500	5,500	0
FY 2022	8,999	8,999	8,999
FY 2023	25,568	25,568	25,568
FY 2024	34,733	34,733	34,733

(dollars in thousands)

	Appropriations	Obligations	Costs
Outyears	TBD	TBD	TBD
Total, Construction	TBD	TBD	TBD
TEC			
FY 2018	500	500	0
FY 2019	1,259	1,259	0
FY 2020	6,792	6,792	1,000
FY 2021	6,500	6,500	6,207
FY 2022	8,999	8,999	8,999
FY 2023	25,568	25,568	25,568
FY 2024	34,733	34,733	34,733
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	409
FY 2022	0	0	0
FY 2023	0	0	0
FY 2024	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	1,015
FY 2021	6,500	6,500	12,116
FY 2022	8,999	8,999	8,999
FY 2023	25,568	25,568	25,568
FY 2024	34,733	34,733	34,733
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
------------------------	-------------------------	-----------------------------

Total Estimated Cost

Design

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

Construction

Site Preparation	TBD	N/A	TBD
Equipment	TBD	N/A	TBD
Other 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	100	N/A	TBD
Conceptual Design	2,100	N/A	TBD
Start-up	TBD	N/A	TBD
Contingency	TBD	N/A	TBD
Total, OPC except D&D	TBD	N/A	TBD

Total, OPC	TBD	N/A	TBD
Total, Contingency	TBD	N/A	TBD

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

Request		Prior Years	FY 2022	FY 2023	FY 2024	Outyears	Total
FY 2018	OPC	500					500
	TEC	500					500
	TPC	1,000					1,000
FY 2019	OPC	4,000					4,000
	TEC	1,759					1,759
	TPC	5,759					5,759
FY 2020	OPC	4,000					4,000
	TEC	8,551					8,551
	TPC	12,551					12,551
FY 2021	OPC	4,000					4,000
	TEC	15,051					15,051
	TPC	19,051					19,051
FY 2022	OPC	4,000				TBD	TBD
	TEC	15,051	8,999			TBD	TBD
	TPC	19,051	8,999			TBD	TBD
FY 2023	OPC	4,000				TBD	TBD
	TEC	15,051	8,999	25,568		TBD	TBD
	TPC	19,051	8,999	25,568		TBD	TBD
FY 2024	OPC	4,000	0			TBD	TBD
	TEC	15,051	8,999	25,568	34,733	TBD	TBD
	TPC	19,051	8,999	25,568	34,733	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 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 as necessary.

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 (E3S) 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 \$15,000,000 in operating expense cost funding (PBS 20) prior to FY 2019.

The FY 2024 request for the Savannah River Site Security System Replacement is \$0.

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.

A CD-2/3 package for the K Area Argus Subproject was submitted for approval in June 2022. The project team developed a Class 1 estimate, with an accuracy range of -3% - +15%, and is expected for projects with an 80% or greater confidence level. The package reflected an increase of \$43M to the original K Area Argus estimate of \$37,291,000, resulting in a new TPC of \$79,400,000. This increase was applied to the CD-1 high end range and an updated Preliminary Project Execution Plan and Acquisition Strategy was approved by EM-1. The new CD-1 range is \$91M-\$134M, as approved by EM-1. Each subproject is still expected to remain under \$100M and will be managed independently.

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, received CD-2/3 in FY22 ahead of schedule. 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 2023 Construction Project Data Sheet and does not include a new start for the budget year.

K Area Argus CD-2/3 approval reflects an increase over the original CD-1 estimate of \$43M, for a TPC of \$79M. This increase was due to an inaccurate CD-1 assessment of the security differences between K Area and H Area,

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which require more labor-intensive installation, and more equipment in K Area than the CD-1 parametric estimate assumed. The overall CD-1 range of the project was revised from \$49-91M to \$91-134M. The Preliminary Project Execution Plan and the Acquisition Strategy were updated and approved by EM-1.

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
FY 2024	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	5/7/2020
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	5/7/2020

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	N/A	4Q FY2022	N/A	4Q FY 2028
FY 2020	8/26/2015	8/08/2016	8/08/2016	TBD	TBD	N/A	4Q FY2022	N/A	4Q FY 2028
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
FY 2024	8/26/2015	8/08/2016	8/08/2016	8/4/2022	8/4/2022	N/A	8/4/2022	N/A	4Q FY 2028

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	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
FY 2024	8/26/2015	8/08/2016	8/08/2016	TBD	TBD	N/A	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	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
FY 2024	8/26/2015	8/08/2016	8/08/2016	TBD	TBD	N/A	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	TBD	TBD	TBD	TBD	N/A	TBD	TBD
FY 2023	15,000	TBD	TBD	TBD	TBD	N/A	TBD	TBD
FY 2024	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
FY 2024	11,588	67,849	79,437	0	N/A	0	79,437

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
FY 2024	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
FY 2024	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 (E3S) 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 E3S has exceeded its useful life. Field installation of the E3S began in the late-1980's with the first subsystem operational in H-Area (December 1991). The last E3S 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, E3S components, including those installed during the last upgrade, are no longer commercially available, making it difficult to maintain reliability of the system. The existing

E3S 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 E3S poses critical operational risks to H-Area, L-Area, K-Area, and Savannah River National Laboratory. If there is an Area-wide failure of E3S, 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 the SRS Security Replacement Project 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.	Replace the current, obsolete Electronic Safeguards and Security system with the DOE Standard system, Argus.

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	987
FY 2020	0	0	1,551
FY 2021	0	0	0
FY 2022	0	0	0
Total, Construction	2,937	2,937	2,538

	Budget Authority (Appropriations)	Obligations	Costs
TEC			
FY 2019	2,937	2,937	987
FY 2020	0	0	1,551
FY 2021	0	0	0
Total, TEC	2,937	2,937	2,538
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	221
FY 2016	0	0	1,234
FY 2017	0	0	2,916
FY 2018	5,000	5,000	1,886
FY 2019	0	0	5,771
FY 2020	0	0	2,639
FY 2021	0	(157)	176
FY 2022	0	0	0
Total, OPEX*	15,000*	14,843	14,843
Total Project Cost (TPC)			
FY 2015 ^a	10,000	10,000	221
FY 2016	0	0	1,234
FY 2017	0	0	2,916
FY 2018 ^a	5,000	5,000	1,886
FY 2019	2,937	2,937	6,758
FY 2020	0	0	4,190
FY 2021	0	(157)	176
FY 2022	0	0	0
Total, TPC	17,937	17,780	17,381

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

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* \$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, and what wasn't spent at the end of the project was returned to PBS 20.

K Area Subproject

	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	1,194
FY 2023	0	0	0
Outyears	0	0	0
Total, Design	11,588	11,588	10,905
Construction			
FY 2019	0	0	0
FY 2020	0	0	0
FY 2021	1,000	1,000	0
FY 2022	4,500	4,500	671
FY 2023	12,000	12,000	12,000
FY 2024	0	0	0
Outyears	50,349	50,349	55,178
Total, Construction	67,849	67,849	67,849
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	4,500	4,500	1,865
FY 2023	12,000	12,000	12,000
FY 2024	0	0	0
Outyears	50,349	50,349	55,178
Total, TEC	79,437	79,437	78,754
OPC			
FY 2019	0	0	0
FY 2020	0	0	0

	Budget Authority (Appropriations)	Obligations	Costs
FY 2021	0	0	0
FY 2022	0	0	0
FY 2023	0	0	0
FY 2024	0	0	0
Outyears	0	0	0
Total, OPC	0	0	0

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	4,500	4,500	1,865
FY 2023	12,000	12,000	12,000
FY 2024	0	0	0
Outyears	50,349	50,349	55,178
Total, TPC	79,437	79,437	78,754

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	500	500	0
FY 2023	0	0	0
FY 2024	0	0	0
Outyears	TBD	TBD	TBD
Total, Design	TBD	TBD	TBD

	Budget Authority (Appropriations)	Obligations	Costs
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
FY 2024	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	500	500	0
FY 2023	0	0	0
FY 2024	0	0	0
Outyears	TBD	TBD	TBD
Total, TEC	TBD	TBD	TBD
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
FY 2024	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	500	500	0
FY 2023	0	0	0
FY 2024	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.

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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
FY 2024	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
FY 2024	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
FY 2024	0	0	0
Outyears	TBD	TBD	TBD
Total, TEC	TBD	TBD	TBD
OPC			
FY 2019	0	0	0
FY 2020	0	0	0
FY 2021	0	0	0

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	Budget Authority (Appropriations)	Obligations	Costs
FY 2022	0	0	0
FY 2023	0	0	0
FY 2024	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
FY 2024	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	500	500	0
FY 2023	0	0	0
FY 2024	0	0	0
Outyears	TBD	TBD	TBD
Total, Design	TBD	TBD	TBD

	Budget Authority (Appropriations)	Obligations	Costs
Construction			
FY 2019	2,937	2,937	998
FY 2020	0	0	1,551
FY 2021	1,000	1,000	0
FY 2022	4,500	4,500	0
FY 2023	5,000	5,000	0
FY 2024	0	0	0
Outyears	TBD	TBD	TBD
Total, Construction	TBD	TBD	TBD
TEC			
FY 2019	10,000	10,000	1,713
FY 2020	4,525	4,525	5,142
FY 2021	1,000	1,000	5,405
FY 2022	5,000	5,000	0
FY 2023	5,000	5,000	0
FY 2024	0	0	0
Outyears	TBD	TBD	TBD
Total, TEC	TBD	TBD	TBD
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
FY 2024	0	0	0
Outyears	TBD	TBD	TBD
Total, OPC	TBD	TBD	TBD
OPEXa			
FY 2015	10,000	10,000	221
FY 2016	0	0	1,234
FY 2017	0	0	2,916
FY 2018	5,000	5,000	1,886
FY 2019	0	0	5,771
FY 2020	0	0	2,639
FY 2021	0	(157)	176

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	Budget Authority (Appropriations)	Obligations	Costs
FY 2022	0	0	0
Outyears	0	0	0
Total, OPEX	15,000	14,843	14,843

Total Project Cost (TPC)

FY 2015	10,000	10,000	221
FY 2016	0	0	1,234
FY 2017	0	0	2,916
FY 2018	5,000	5,000	1,886
FY 2019	10,000	10,000	7,484
FY 2020	4,525	4,525	7,781
FY 2021	1,000	843	5,581
FY 2022	5,000	5,000	0
FY 2023	5,000	5,000	0
FY 2024	0	0	0
Outyears	TBD	TBD	TBD
Total, TPC	TBD	TBD	TBD

5. Details of Project Cost Estimate

H Area Subproject

(dollars in thousands)

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

Design			
Design	N/A	N/A	N/A
Contingency	N/A	N/A	N/A
Total, Design	N/A	N/A	N/A
Contingency	N/A	N/A	N/A
Construction	N/A	N/A	N/A
Site Preparation	N/A	N/A	N/A
Equipment	N/A	N/A	N/A
Other Construction	N/A	N/A	N/A
Contingency	N/A	N/A	N/A
Total, Construction	N/A	N/A	N/A

Environmental Management/
Savannah River/19-D-701 SR Security
System Replacement Project

FY 2024 Congressional Justification

	(dollars in thousands)		
	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Contingency	N/A	N/A	N/A
Total, TEC	N/A	N/A	N/A
Contingency, TEC	N/A	N/A	N/A

Other Project Cost (OPC)

OPC except D&D			
Conceptual Planning	N/A	N/A	N/A
Conceptual Design	N/A	N/A	N/A
Start-Up	N/A	N/A	N/A
Contingency	N/A	N/A	N/A
Other OPC	N/A	N/A	N/A
Total, OPC	N/A	N/A	N/A
Contingency, OPC	N/A	N/A	N/A

Operating Expense Costs (OPEX) H Area Subproject Only ^b

Conceptual Planning	221	275	221
Conceptual Design	1,234	1,924	1,234
Start-Up	3,473	412	3,473
Design	1,753	5,063	1,753
Design Contingency	0	984	0
Other Project Costs (OPC)	926	0	926
OPC Contingency	232	137	232
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. TEC \$2.937M 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)

Total Estimated Cost (TEC) ^a

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Design			
Design	11,061	7,620	11,061
Contingency	0	1,413	0
Total, Design	11,061	7,620	11,061
Contingency	0	1,413	0
Construction			
Site Preparation	0	0	0
Equipment	1,614	300	1,614
Other Construction	56,514	18,771	56,514
Contingency	6,868	7,103	6,868
Total, Construction	64,996	19,071	64,996
Contingency	6,868	7,103	6,868
Total, TEC	76,057	26,691	76,057
Contingency, TEC	6,868	7,103	6,868

Other Project Cost (OPC)

OPC except D&D			
Conceptual Planning	0	0	0
Conceptual Design	0	0	0
Start-Up	0	0	0
Contingency	500	0	500
Other OPC	2,880	2,084	2,880

Total, OPC	3,380	2,084	3,380
Contingency, OPC	500	0	500

Total K Area, TPC	79,437	28,775	79,437
Total K Area, Contingency	500	0	500

L 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			
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	N/A	N/A	N/A
Conceptual Design	N/A	N/A	N/A
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	TBD	TBD
Total L Area, Contingency	TBD	TBD	TBD

SRNL/General Site Subproject

(dollars in thousands)

Current Total Estimate	Previous Total Estimate	Original Validated Baseline
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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	N/A	N/A	N/A
Conceptual Design	N/A	N/A	N/A
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 SRNL/Gen Site, TPC

TBD TBD TBD

Total SRNL/Gen Site, Contingency

TBD TBD TBD

Overall Project (19-D-701)

(dollars in thousands)

Current Total Estimate	Previous Total Estimate	Original Validated Baseline
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(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	N/A	N/A	N/A
Conceptual Design	N/A	N/A	N/A
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
Conceptual Design	1,234	1,924	1,234
Start-Up	3,473	412	3,473
Design	1,753	5,063	1,753
Design Contingency	0	984	0
Other Project Costs (OPC)	926	0	926
OPC Contingency	232	137	232
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 Project, TPC	133,615	TBD	TBD
Total Project, Contingency	592	TBD	TBD
Environmental Management/ Savannah River/19-D-701 SR Security System Replacement Project			

FY 2024 Congressional Justification

6. Schedule of Appropriation Requests (\$K)

Request	Type	Prior Years	FY 2022	FY 2023	FY 2024	Outyears	Total
FY 2019	TEC	10,000				TBD	TBD
	OPC	0				TBD	TBD
	OPE X	15,000				0	15,000
	TPC	25,000				TBD	TBD
FY 2020	TEC	14,525				TBD	TBD
	OPC	0				TBD	TBD
	OPE X	15,000				0	15,000
	TPC	29,525				TBD	TBD
FY 2021	TEC	15,525				TBD	TBD
	OPC	0				TBD	TBD
	OPE X	15,000				0	15,000
	TPC	30,525				TBD	TBD
FY 2022	TEC	15,525	5,000			TBD	TBD
	OPC	0	0			TBD	TBD
	OPE X	15,000	0			0	15,000
	TPC	30,525	5,000			TBD	TBD
FY 2023	TEC	15,525	5,000	12,000		TBD	TBD
	OPC	0	0	0		TBD	TBD
	OPE X	15,000	0	0		0	15,000
	TPC	30,525	5,000	12,000		TBD	TBD
FY 2024	TEC	15,525	5,000	12,000	0	TBD	TBD
	OPC	0	0	0	0	TBD	TBD
	OPE X	15,000	0	0	0	0	15,000
	TPC	30,525	5,000	12,000	0	TBD	TBD

7. 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

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 2024 Request for the Saltstone Disposal Units 10-12 project is \$61,250,000 (includes \$56,250,000 of Design and Construction costs and \$5,000,000 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 to design and construct the three (3) Saltstone Disposal Units with Critical Decision 4 date of July 2030.

Saltstone Disposal Units 10-12 will be designed and constructed based on successful completion of Saltstone Disposal Units 6 and 7, 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 2023 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 (FPD) has been assigned. The FPD is a Level III working toward Level IV certification.

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
FY 2024	9/11/2017	12/21/2018	12/21/2018	9/13/2021	4QFY29	9/13/2021	N/A	7/8/2030

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, Phased Design tailoring strategy

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

**Environmental Management/
Savannah River/20-D-401 Saltstone
Disposal Units 10-12**

FY 2024 Congressional Justification

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
FY 2024	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, 34,000,000 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	N/A
Capacity	Provide saltstone grout containment capacity of no less than 30,000,000 gallons.	N/A
Throughput	Provide infrastructure capable of delivering saltstone grout at 100 gallons per minute minimum.	N/A
Leak Detection	Install a leak detection system in accordance with the Z-Area Industrial Solid Waste Landfill Permit requirements.	N/A

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	56,250	56,250	56,250

(dollars in thousands)

	Appropriations	Obligations	Costs
FY 2025	82,500	82,500	82,500
FY 2026	82,500	82,500	82,500
FY 2027	82,500	82,500	82,500
FY 2028	59,950	59,950	59,950
Out years	31,270	31,270	37,284
	441,340	441,340	441,340

Total, Construction

TEC			
FY 2020	500	500	48
FY 2021	562	562	473
FY 2022	17,807	17,807	10,002
FY 2023	37,668	37,668	40,000
FY 2024	56,250	56,250	56,250
FY 2025	82,500	82,500	82,500
FY 2026	82,500	82,500	82,500
FY 2027	82,500	82,500	82,500
FY 2028	59,950	59,950	59,950
Outyears	31,270	31,270	37,284
	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	5,000	5,000	5,000
FY 2025	6,700	6,700	6,700
FY 2026	6,800	6,800	6,800
FY 2027	6,800	6,800	6,800
FY 2028	3,100	3,100	3,100
Outyears	6,093	6,093	3,938

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	22,207	22,207	14,402
FY 2023	41,918	41,918	44,250
FY 2024	61,250	61,250	61,250
FY 2025	89,200	89,200	89,200

(dollars in thousands)

	Appropriations	Obligations	Costs
FY 2026	89,300	89,300	89,300
FY 2027	89,300	89,300	89,300
FY 2028	63,050	63,050	63,050
Outyears	37,363	37,363	41,222
Total, TPC	496,000	496,000	496,000

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	441,341	441,341	441,341
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		Prior Years	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	Outyears	Total
FY 2020	TEC	500								TBD	TBD
	OPC	500								TBD	TBD
	TPC	1,000								TBD	TBD
FY 2022	TEC	1,062	19,500							TBD	TBD
	OPC	1,450	4,400							TBD	TBD
	TPC	2,512	23,900							TBD	TBD
FY 2023	TEC	1,062	19,500	37,668						393,277	451,507
	OPC	1,450	4,400	4,250						34,393	44,493
	TPC	2,512	23,900	41,918						427,670	496,000
FY 2024	TEC	1,062	19,500	37,668	56,250	82,500	82,500	82,500	59,950	29,577	451,507
	OPC	1,450	4,400	4,250	5,000	6,700	6,800	6,800	3,100	5,993	44,493
	TPC	2,512	23,900	41,918	61,250	89,200	89,300	89,300	63,050	35,570	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. Within the nine Operable Units, there are 73 contaminant release sites at Site 300, of which 69 have been completed. EM's responsibility is the characterization, remedy selection, and implementation for remaining perchlorate contamination in Building 850 groundwater, 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.

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 2033. 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 2024 Budget Request

Demolition planning efforts will continue on other National Nuclear Security Administration-owned high-risk contaminated excess facilities including Building 280 and Building 212 (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.

FY 2023 - FY 2024 Key Milestones/Outlook

- (July 2023) Complete metals and uranium background survey.
- (August 2023) Start of Building 280 Demolition and Dismantlement.
- (September 2023) Start of Building 281 Demolition and Dismantlement.
- (April 2024) Start of Building 175 slab and soil removal.
- (May 2024) Complete Legacy Slab 377 slab and soil removal.
- (September 2024) Continue Building 251 (Heavy Element Facility) demolition to slab.

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 remove the demolished Building 175 (Mars E-Beam Facility) slab and soil, remove the Legacy Slab 377 slab and soil, and commence decommissioning and demolition planning activities for Legacy Slab and Building 212. 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 2022 Enacted	FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 Enacted	FY 2024 Request vs FY 2023 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)	416	400	430	+30	+8%
VL-LLNL-0031 / Soil and Water Remediation-Lawrence Livermore National Laboratory - Site 300	1,390	1,442	1,449	+7	+0%
Subtotal, Lawrence Livermore National Laboratory	1,806	1,842	1,879	+37	+2%
LLNL Excess Facilities D&D					
CBC-LLNL-0040 / LLNL Excess Facilities D&D	35,000	35,000	20,195	-14,805	-42%
Total, NNSA Sites	36,806	36,842	22,074	-14,768	-40%

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

FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 Enacted
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Defense Environmental Cleanup

NNSA Sites

Lawrence Livermore National Laboratory

VL-FOO-0013B-D / Solid Waste Stabilization and Disposition Support - Lawrence Livermore National Laboratory (Defense)

- No significant change.

400 430 +30

VL-LLNL-0031 / Soil and Water Remediation-Lawrence Livermore National Laboratory - Site 300

- No significant change.

1,442 1,449 +7

LLNL Excess Facilities D&D

CBC-LLNL-0040 / LLNL Excess Facilities D&D

- The decrease reflects progress to complete the 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 20,195 -14,805

Total, Lawrence Livermore National Laboratory

36,842 22,074 -14,768

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 2023 Enacted	FY 2024 Request	Explanation of Changes FY 2024 Request vs FY 2023 Enacted
\$400,000	\$430,000	+\$30,000
<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"> • 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 2023 Enacted	FY 2024 Request	Explanation of Changes FY 2024 Request vs FY 2023 Enacted
\$1,442,000	\$1,449,000	+\$7,000
<ul style="list-style-type: none"> • Finalize the metals and uranium background survey. • 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"> • Continue the Treatability Study for Enhanced In Situ Bioremediation of Perchlorate in Ground water at Building 850/Operable Unit 5. • Initiate the Remedial Investigation/Feasibility Study for Building 812. 	<ul style="list-style-type: none"> • No significant change.

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- Initiate 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 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 2023 Enacted	FY 2024 Request	Explanation of Changes FY 2024 Request vs FY 2023 Enacted
\$35,000,000	\$20,195,000	-\$14,805,000
<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"> • Continue progress on demolition and disposition of Building 280, Building 251, Building 281, and removal of the Building 280, 175, and 377 slabs. • Commence characterization activities at additional excess facilities. 	<ul style="list-style-type: none"> • The decrease reflects progress to complete the 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.

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 2024 Budget Request

In FY 2024, the Site will:

- Complete 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 and removal of transuranic waste from Waste Control Specialists LLC commercial radioactive waste treatment and disposal facility.
- 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.
- Submit a Corrective Measures Evaluation Report for the Chromium Plume with a proposed remedy to New Mexico Environment Department.
- Install 2 and initiate 3 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.
- Continue Decontamination and Demolition of Deactivated National Nuclear Security Administration excess high-risk facilities (Ion Beam Facility).

FY 2023 and FY 2024 Key Milestones/Outlook

- (January 2023) Continue shipments of transuranic waste from Technical Area 54-Area G to the Waste Isolation Pilot Plant.
- (January 2023) Continue remediation activities of transuranic waste at Area G.
- (August 2023) Start installation of Chromium Plume well R-76.
- (June 2023) Initiate size reduction of Corrugated Metal Pipes Transuranic waste.
- (August 2023) Submit Investigation Report for North Ancho Canyon Aggregate Area.
- (August 2023) Submit Investigation Report for Threemile Canyon Aggregate Area.
- (September 2023) Submit Investigation Report for Twomile Canyon Aggregate Area.

- (January 2024) Continue shipments of transuranic waste from Technical Area 54 Area G to Waste Isolation Pilot Plant.
- (January 2024) Continue remediation activities of transuranic waste at Area G.
- (January 2024) Continue remediation and Demolition and Dismantlement 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 2023.
- (March 2024) Complete the size reduction of the Corrugated Metal Pipes at Technical Area-54 Area G.
- (May 2024) Summary report detailing the installation of moisture monitoring system at Material Disposal Area T.
- (June 2024) Investigation Report for Twomile Canyon Aggregate Area.
- (September 2024) Investigation Report for Starmer/Upper Pajarito Canyon Aggregate Area.
- (September 2024) Investigation Report for Portrillo and Fence Canyon Aggregate Areas.
- (September 2024) Completion of the Southern External Boundary Campaign.
- (September 2024) Complete the installation of two and initiate drilling on 3 Regional Aquifer monitoring wells in support of the Chrome and Royal Demolition Explosives Campaigns.

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 New Mexico Environment Department initiated a complaint in district court in February 2021 asking for court ordered renegotiation of the Consent Order settlement. Discussions are ongoing. 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. A new Individual Permit has been issued by Region VI of the US Environmental Protection Agency on August 1, 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 consist of 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 the 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 2022 Enacted	FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 Enacted	FY 2024 Request vs FY 2023 Enacted (%)
Defense Environmental Cleanup					
NNSA Sites					
Los Alamos Excess Facilities D&D					
CBC-LANL-0040 / Los Alamos Excess Facilities D&D	17,000	40,519	13,648	-26,871	-66%
Los Alamos National Laboratory					
VL-FAO-0101 / Miscellaneous Programs and Agreements in Principle	3,394	3,394	3,394	+0	+0%
VL-LANL-0013 / Solid Waste Stabilization and Disposition-LANL Legacy	105,059	116,256	115,264	-992	-1%
VL-LANL-0030 / Soil and Water Remediation-LANL	166,666	166,666	155,173	-11,493	-7%
Subtotal, Los Alamos National Laboratory	275,119	286,316	273,831	-12,485	-4%
Total, NNSA Sites	292,119	326,835	287,479	-39,356	-12%
Safeguards and Security					
VL-LANL-0020 / Safeguards and Security	0	5,000	5,000	+0	+0%
Total, Defense Environmental Cleanup	292,119	331,835	292,479	-39,356	-12%

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

	FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 Enacted
Defense Environmental Cleanup			
Los Alamos			
EMLA Cleanup Activities			
VL-LANL-0013 / Solid Waste Stabilization and Disposition-LANL Legacy			
• No significant change.	116,256	115,264	-992
VL-LANL-0030 / Soil and Water Remediation-LANL			
• The decrease in funding levels will continue to support ongoing environmental restoration work. Highlighted scope elements include ongoing Aggregate Area investigations and cleanup, chrome plume characterization and interim measure operation, and characterization of Building 257 and Industrial Waste Lines at TA-21.	166,666	155,173	-11,493
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 decrease will support the continuation of decontamination and demolition of deactivated National Nuclear Security Administration excess high-risk facilities (Ion Beam Facility).	40,519	13,648	-26,871
Safeguards and Security			
VL-LANL-0020 / Safeguards and Security			
• No change.	5,000	5,000	+0
Total, Los Alamos National Laboratory	331,835	292,479	-39,356

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 2023 Enacted	FY 2024 Request	Explanation of Changes FY 2024 Request vs FY 2023 Enacted
\$116,256,000	\$115,264,000	-\$992,000
<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"> 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"> No significant change.

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- 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).
- 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 2023 Enacted	FY 2024 Request	Explanation of Changes FY 2024 Request vs FY 2023 Enacted
\$166,666,000	\$155,173,000	-\$11,493,000
<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"> 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 decrease in funding levels will continue to support ongoing environmental restoration work. Highlighted scope elements include ongoing Aggregate Area investigations and

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.
- Continue Southern External Boundary Consent Order Campaign, investigation of 60 Solid Waste Management Units and Areas of Concern.

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.

cleanup, chrome plume characterization and interim measure operation, and characterization of Building 257 and Industrial Waste Lines at TA-21.

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- 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.
 - Continue characterization and initiate Decontamination and Demolition of Technical Area 21 Building 21-257 and industrial waste line.
 - 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.
 - Continue vapor monitoring at Material Disposal Areas C and L.
 - Continue operation of the Soil Vapor Extraction at MDA 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 2023 Enacted	FY 2024 Request	Explanation of Changes FY 2024 Request vs FY 2023 Enacted
\$3,394,000	\$3,394,000	+\$0
<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"> • 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 2023 Enacted	FY 2024 Request	Explanation of Changes 2024 Request vs FY 2023 Enacted	FY
\$40,519,000	\$13,648,000		-\$26,871,000
<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"> • Continue Decontamination and Demolition of Deactivated National Nuclear Security Administration excess high-risk facilities (Ion Beam Facility). 	<ul style="list-style-type: none"> • This decrease will support the continuation 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 2023 Enacted	FY 2024 Request	Explanation of Changes FY 2024 Request vs FY 2023 Enacted
\$5,000,000	\$5,000,000	+\$0
<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"> Perform safeguard and security activities as required by the Department of Homeland Security directive and identified and authorized by the DOE HQ building security plan. 	<ul style="list-style-type: none"> No change.

Nevada

Overview

The Environmental Management Nevada Program mission is comprised of environmental remediation, operation of the Nevada National Security Site waste disposal facilities, and community and regulatory support activities. Environmental restoration activities are carried out in accordance with the Federal Facility Agreement and Consent Order and include contaminated surface soil from former atmospheric nuclear testing, contaminated groundwater from former underground nuclear testing, and industrial sites where contamination is present due to nuclear testing support activities. Industrial sites include everything from landfill, septic systems, and abandoned waste to large nuclear facilities that require deactivation, decontamination, demolition, and disposal. The Nevada National Security Site waste disposal mission includes disposal of onsite generated wastes and supports important safe and secure disposal facilities for wastes generated by cleanup activities across the Department of Energy complex as well as national security and other scientific research missions that generate low-level radioactive waste. Community and regulatory support activities provide stakeholder and Tribal entity support in the State of Nevada for Environment Management activities on the Nevada National Security Site and the United States Air Force's Nevada Test and Training Range.

Highlights of the FY 2024 Budget Request

The Environmental Management Nevada Program FY 2024 budget supports continued progress towards risk-informed closure of 82 remaining subsurface contaminated groundwater and 19 remaining 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 Environmental Management 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 2024 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.

FY 2023 and FY 2024 Key Milestones/Outlook

PBS VL-NV-0030:

- (December 2022) Completed Corrective Action Unit 101 Central Pahute Mesa Phase II Final Well Installation Presentation #1 to the State of Nevada.
- (December 2022) Completed Corrective Action Unit 102 Western Pahute Mesa Phase II Final Well Installation Presentation #1 to the State of Nevada.
- (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 2021 Post-Closure Report to the State of Nevada.
- (August 2023) Submit Corrective Action Unit 101 Central Pahute Mesa CY 2021 Annual Groundwater Sampling Report to the State of Nevada.
- (August 2023) Submit Corrective Action Unit 102 Western Pahute Mesa CY 2021 Annual Groundwater Sampling Report to the State of Nevada.
- (September 2023) Provide Corrective Action Unit 101 Central Pahute Mesa Phase II Data Completion Presentation #8 to the State of Nevada.
- (September 2023) Provide Corrective Action Unit 102 Western Pahute Mesa Phase II Data Completion Presentation #8 to the State of Nevada.
- (September 2023) Submit Corrective Action Unit 578 Miscellaneous Inactive Sites Streamline Approach for Environmental Restoration Plan.
- (October 2023) Submit Corrective Action Unit 101 Central Pahute Mesa Corrective Action Decision Document/Corrective Action Plan to the State of Nevada.
- (October 2023) Submit Corrective Action Unit 102 Western Pahute Mesa Corrective Action Decision Document/Corrective Action Plan to the State of Nevada.

- (December 2023) Provide Corrective Action Unit 101 Central Pahute Mesa Phase II Final Well Installation Presentation #2 to the State of Nevada.
- (December 2023) Provide Corrective Action Unit 102 Western Pahute Mesa Phase II Final Well Installation Presentation #2 to the State of Nevada.
- (February 2024) Submit Corrective Action Unit 578 Miscellaneous Inactive Sites Closure Report.
- (June 2024) Submit Final CY 2023 Post-Closure Report to the State of Nevada.
- (August 2024) Submit Corrective Action Unit 101 Central Pahute Mesa CY 2023 Annual Groundwater Sampling Report to the State of Nevada.
- (August 2024) Submit Corrective Action Unit 102 Western Pahute Mesa CY 2023 Annual Groundwater Sampling Report to the State of Nevada.

PBS VL-NV-0080:

- (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.
- (September 2024) 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 2023) Continue funding to the State of Nevada.
- (September 2024) 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 Federal Compliance with Pollution Control Standards
- 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 pre-demolition characterization and hazardous abatement for decontamination and decommissioning tasks; complete groundwater corrective action investigation and drill required monitoring wells; closure of Corrective Action Unit

**Environmental Management/
Nevada**

FY 2024 Congressional Justification

578 Miscellaneous Inactive Sites; maintain radioactive waste acceptance program; maintain post-closure requirements; and overall program integration and management). Planned Task Order 2 – Extensions include (complete groundwater corrective action unit closure including additional monitoring well drilling requirements; maintain radioactive waste acceptance program; maintain post-closure requirements; and overall program integration and management). Planned Task Order #3 (demolition and closure for corrective action unit 572 Test Cell C Ancillary Buildings and Structures and demolition of building 3901 and miscellaneous structures at corrective action unit 114 Engine Maintenance Assembly & Disassembly Facility) is currently under development and is planned to be awarded in FY 2023. Planned Task Order #4 (demolition of building 3900 and closure for corrective action 114 Engine Maintenance Assembly & Disassembly Facility).

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 footprints.

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 former underground test locations, surface or near-surface soil contamination locations and 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 2022 Enacted	FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 Enacted	FY 2024 Request vs FY 2023 Enacted (%)
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Defense Environmental Cleanup

NNSA Sites

Nevada

VL-NV-0030 / Soil and Water Remediation-Nevada	33,326	35,965	34,552	-1,413	-4%
VL-NV-0080 / Operate Waste Disposal Facility-Nevada	37,269	22,787	22,223	-564	-2%
VL-NV-0100 / Nevada Community and Regulatory Support	5,142	3,900	5,177	+1,277	+33%
Subtotal, Nevada	75,737	62,652	61,952	-700	-1%

Nevada
Explanation of Major Changes (\$K)

FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 Enacted
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Defense Environmental Cleanup

NNSA Sites

Nevada

VL-NV-0030 / Soil and Water Remediation-Nevada

- No significant change.

	35,965	34,552	-1,413
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VL-NV-0080 / Operate Waste Disposal Facility-Nevada

- No significant change.

	22,787	22,223	-564
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VL-NV-0100 / Nevada Community and Regulatory Support

- The budget increase is required to meet the State of Nevada regulatory oversight and waste fee agreement.

	3,900	5,177	+1,277
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Total, Nevada

	62,652	61,952	-700
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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 1295 contaminated soil and industrial-type 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. Successful completion of work under this PBS includes engagement with Tribes and community stakeholders to foster support and understanding of remediation strategies as part of EM’s commitment to maintain a robust public outreach program on behalf of the Department.

Starting in FY 2024, activities at approximately 2,073 (95%) contaminated soil, industrial-type and groundwater sites are closed and activities at approximately 101 remaining sites continue to make progress.

Soil and Water Remediation-Nevada (PBS: VL-NV-0030)

Activities and Explanation of Changes

FY 2023 Enacted	FY 2024 Request	Explanation of Changes FY 2024 Request vs FY 2023 Enacted
\$35,965,000	\$34,552,000	-\$1,413,000

<p>Groundwater Remediation:</p> <ul style="list-style-type: none"> 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 planning and design for drilling and development of two (2) Monitoring Wells for Corrective Action Units 101/102 Pahute Mesa. 	<p>Groundwater Remediation:</p> <ul style="list-style-type: none"> Continue annual groundwater data collection and sampling for Corrective Action Units 101/102 Pahute Mesa. Complete Corrective Action Decision Document/Corrective Action Plan. Complete drilling and development of two Monitoring Wells for Corrective Action Units 101/102 Pahute Mesa. 	<ul style="list-style-type: none"> No significant change.
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- Install a remote groundwater sensing demonstration project on the Nevada National Security Site to detect the presence, levels, and characteristics of groundwater in the desert.

Industrial Sites:

- Complete Streamline Approach for Environmental Restoration Plan for Corrective Action Unit 578 Miscellaneous Inactive Sites.
- Complete hazardous abatement activities for Corrective Action Unit 114 Engine Maintenance Assembly & Disassembly Facility.
- Complete hazardous abatement activities and initiate demolition for Corrective Action Unit 572 Test Cell C Ancillary Buildings and Structures.

Post-Closure Long-term Monitoring:

- 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.

Industrial Sites:

- Complete Closure Report for Corrective Action Unit 578 Miscellaneous Inactive Sites.
- Initiate demolition of building 3901 and miscellaneous structures for Corrective Action Unit 114 Engine Maintenance Assembly & Disassembly Facility.

Post-Closure Long-term Monitoring:

- 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.
- Continue Corrective Action Unit 111 Revegetation activities.

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 waste disposal capability to meet the needs of all DOE sites through FY 2035 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 2023 Enacted	FY 2024 Request	Explanation of Changes FY 2024 Request vs FY 2023 Enacted
\$22,787,000	\$22,223,000	-\$564,000
<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 enhancements to real-time radiography capabilities to include procurement of portal unit. Continue operation of Resource Conservation and Recovery Act mixed low-level waste disposal cell. 	<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. Complete enhancements to real-time radiography capabilities to include installation, training and execution of increased real-time radiography. 	<ul style="list-style-type: none"> No significant change.

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- 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.
 - Continue operation of Resource Conservation and Recovery Act mixed low-level waste disposal cell.
 - Support cleanup activities across the DOE complex by providing disposal capacity and services for approximately 1.2M cubic feet (34,000 cubic meters) of low-level radioactive, mixed low-level radioactive waste, and classified waste.
 - Complete cell closure activities for Corrective Action Unit 577 Area 5 Chromium Containing Waste Disposal Cells.

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 2023 Enacted	FY 2024 Request	Explanation of Changes FY 2024 Request vs FY 2023 Enacted
\$3,900,000	\$5,177,000	+\$1,277,000
<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"> • 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 budget increase is required to meet the State of Nevada regulatory oversight and waste fee agreement.

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 (NMED) 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 2024 Budget Request

In FY 2024, 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 2024 funding will support continuation of updating the Current Conceptual Model/Corrective Measures Evaluation Report. At the Burn Site Groundwater Area of Concern, FY 2024 funding will support preparation for a public hearing associated with the selection of the final remedy. At the Tijeras Arroyo Groundwater Area of Concern, FY 2024 funding supports the technical staff as the New Mexico Environment Department reviews the Corrective Measures Implementation Report.

FY 2023 and FY 2024 Key Milestones/Outlook

- (June 2023) Submit Corrective Measures Implementation Plan Report for NMED Review of the Tijeras Arroyo Groundwater Area of Concern.
- (October 2023) Begin updating Current Conceptual Model/Corrective Measures Evaluation Report for Technical Area-V Groundwater Area of Concern.
- (October 2023) Continue updating Current Conceptual Model/Corrective Measures Evaluation Report for Burn Site Groundwater Area of Concern.
- (March 2024) Prepare for a public hearing associated with the selection of the final remedy for Burn Site Groundwater Area of Concern.
- (May 2024) Submit the Current Conceptual Model/Corrective Measures Evaluation Report for Technical Area-V 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. Updating the Conceptual Model Report and a Corrective Measures Evaluation Report will continue into FY 2023 as the technical staff gets closer to submittal.

(2) Tijeras Arroyo Groundwater Area of Concern -The New Mexico Environment Department has reviewed the revised and updated Current Conceptual Model and Corrective Measures Report and has endorsed the project's recommendation of natural monitored attenuation remedial alternative. In FY 2023, the Corrective Measures Implementation Report will be submitted and reviewed by New Mexico Environmental Department.

(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 began the process of updating the Current Conceptual Model and Corrective Measures Report and will continue throughout FY 2023.

Sandia Site Office

Funding (\$K)

FY 2022 Enacted	FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 Enacted	FY 2024 Request vs FY 2023 Enacted (%)
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Defense Environmental Cleanup

NNSA Sites

Sandia National Laboratories

VL-SN-0030 / Soil and Water Remediation-Sandia

4,576

4,003

2,264

-1,739

-43%

Sandia Site Office
Explanation of Major Changes (\$K)

FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 Enacted
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Defense Environmental Cleanup

NNSA Sites

Sandia National Laboratories

VL-SN-0030 / Soil and Water Remediation-Sandia

- Decrease reflects \$1,700,000 reduction due to regulatory requirement changes for the Technical Area-V Groundwater Area of Concern. Phase II of the Bioremediation study is no longer required. This included the installation of an additional well, plus additional performance analysis and evaluation of contaminant reduction.

	4,003	2,264	-1,739
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Total, Sandia Site Office

	4,003	2,264	-1,739
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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 2023 Enacted	FY 2024 Request	Explanation of Changes FY 2024 Request vs FY 2023 Enacted
\$4,003,000	\$2,264,000	-\$1,739,000
<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"> • Continue updating Current Conceptual Model/Corrective Measures Evaluation Report for Technical Area-V Groundwater Area of Concern and then submit to the New Mexico Environment Department for review. • Prepare for a public hearing associated with the selection of the final remedy for Burn Site Groundwater Area of Concern. • Support the New Mexico Environment Department as they review the finalized Corrective Measure Implementation Report for the Tijeras Arroyo Groundwater Area of Concern. • Support responses and comments to the Implementation Management Plan associated with the selection of the final remedy for the Tijeras Arroyo Groundwater Area of Concern. 	<ul style="list-style-type: none"> • Decrease reflects \$1,700,000 reduction due to regulatory requirement changes for the Technical Area-V Groundwater Area of Concern. Phase II of the Bioremediation study is no longer required. This included the installation of an additional well, plus additional performance analysis and evaluation of contaminant reduction.

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 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. State acceptance of the final project Resource Conservation and Recovery Act report was received in September 2022.

The remaining scope of work at the Separations Process Research Unit site consists of completing planning to address remaining transuranic waste, contract claims resolution, and closeout.

Highlights of the FY 2024 Budget Request

The FY 2024 budget request of \$15,300,000 supports work associated with closing out the demolition contract claims and continuing work to safely maintain, evaluate, and develop processing plans to treat, transport, and dispose of Separations Process Research Unit transuranic waste.

FY 2023- FY 2024 Key Milestones/Outlook

- (April 2023) Award the second contract phase task order to Deliver a Transportation Plan, Separations Process Research Unit Waste Disposition Plan, and, for the suspect transuranic waste that will be disposed of as low-level waste following commercial treatment, complete a Level 4 Schedule and Cost estimate.
- (January 2024) Award the third contract phase for commercial shipping, treatment, and disposal as low-level waste of a portion of the Separations Process Research Unit transuranic waste.
- (September 2024) Initiate Headquarters strategy for processing, shipping and disposal at Waste Isolation Pilot Plant of remaining Transuranic waste.
- (September 2024) 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

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. The three Processing Plans were evaluated in FY 2023 and a follow-up task order to Deliver a Transportation Plan, Separations Process Research Unit Waste Disposition Plan, and for the suspect transuranic waste that will be disposed of as low-level waste following commercial treatment, complete a Level 4 Schedule and Cost estimate will be awarded in FY 2023. A follow-up task order under this basic ordering agreement for treatment and disposal of this waste is planned to be awarded in FY 2024. 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 2023 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.
- 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 follow-up task order in FY 2024 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 the Waste Isolation Pilot Plant.

Separations Process Research Unit

Funding (\$K)

FY 2022 Enacted	FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 Enacted	FY 2024 Request vs FY 2023 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	15,300	15,300	+0	+0%
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**Separations Process Research Unit
Explanation of Major Changes (\$K)**

	FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 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 change.

15,300	15,300	+0
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Total, Separations Process Research Unit

15,300	15,300	+0
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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 2023 and FY 2024 supports the 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 2023 Enacted	FY 2024 Request	Explanation of Changes FY 2024 Request vs FY 2023 Enacted
\$15,300,000	\$15,300,000	+\$0
<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"> 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 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 2024 Budget Request

The major activities planned for the West Valley Demonstration Project for FY 2024 focus on the ongoing demolition of the Main Plant Process Building; continuing site operations and maintenance; and disposition of newly generated and legacy waste. In addition, the West Valley Demonstration Project will continue the preparation of the Supplemental Environmental Impact Statement for Phase 2 Decommissioning of the West Valley Demonstration Project.

FY 2023 and FY 2024 Key Milestones/Outlook

- (August 2023) Complete installation of new Guard House.
- (September 2023) Continue demolition of Main Plant Process Building.
- (September 2023) Ship and dispose of 9,000 tons of Main Plant Process Building Demolition debris.
- (September 2023) Award Supplemental Environmental Impact Statement Contract.
- (September 2023) Awarded Site Technical assistance contract. November 2023) Completed demolition and waste disposal of the Load in/Load Out Facility.
- (September 2024) Ship Debris from Main Plant Process Building Demolition.
- (September 2024) Award Phase 1 Decommissioning Soil Remediation (Phase 1B) Contract.

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 (Phase 1A) 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 November 4, 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 was awarded in 2022.
- Technical Assistance Contract was awarded in the second quarter of FY 2023 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 Environmental Impact Statement 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. A follow-on contract will be awarded in 2023.

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, removal of the above grade portion of the Main Plant Process Building 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 was successfully deactivated, and demolition started on September 21, 2022. Demolition is 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 Main Plant Process Building and 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 2022 Enacted	FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 Enacted	FY 2024 Request vs FY 2023 Enacted (%)
Defense Environmental Cleanup					
Safeguards and Security					
OH-WV-0020 / Safeguards and Security-West Valley	5,298	5,984	5,865	-119	-2%
Non-Defense Environmental Cleanup					
West Valley Demonstration Project					
OH-WV-0013 / Solid Waste Stabilization and Disposition-West Valley	24,901	23,547	31,713	+8,166	+35%
OH-WV-0040 / Nuclear Facility D&D-West Valley	63,219	66,335	58,169	-8,166	-12%
Subtotal, West Valley Demonstration Project	88,120	89,882	89,882	+0	+0%
Total, West Valley Demonstration Project	93,418	95,866	95,747	-119	+0%

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

	FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 Enacted
Defense Environmental Cleanup			
Safeguards and Security			
OH-WV-0020 / Safeguards and Security-West Valley			
• No significant change.	5,984	5,865	-119
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.	23,547	31,713	+8,166
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.	66,335	58,169	-8,166
Total, West Valley Demonstration Project	95,866	95,747	-119

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 (e.g., EO 14028, DOE O 205.1C, EM-CSPP).

Safeguards and Security-West Valley (PBS: OH-WV-0020)

Activities and Explanation of Changes

FY 2023 Enacted	FY 2024 Request	Explanation of Changes FY 2024 Request vs FY 2023 Enacted
\$5,984,000	\$5,865,000	-\$119,000
<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 (e.g., EO 14028, DOE O 205.1C, EM-CSPP), 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 (e.g., EO 14028, DOE O 205.1C, EM-CSPP), training and qualifications for the West Valley Demonstration Project. Develop and maintain a Cybersecurity Program Plan and implement the EM-CSPP, DOE O 205.1C, and Executive Order 14028. 	<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 2023 Enacted	FY 2024 Request	Explanation of Changes FY 2024 Request vs FY 2023 Enacted
\$23,547,000	\$31,713,000	+\$8,166,000
<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"> • 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, package, ship, and dispose 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 2023 Enacted	FY 2024 Request	Explanation of Changes FY 2024 Request vs FY 2023 Enacted
\$66,335,000	\$58,169,000	-\$8,166,000
<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"> • 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. • Repair and restore Lake 1 Spillway. 	<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 2024 Budget Request

The Energy Technology Engineering Center's FY 2024 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. The site will continue its collaborations with the State of California so that once a Record of Decision for soils is published, the Department can begin 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 Program Environmental Impact Report and the Department issues a Soils Record of Decision pursuant to the National Environmental Policy Act (NEPA), the Department cannot initiate soil remediation.

FY 2023 & FY 2024 Key Milestones/Outlook

- (September 2024) Continue planning of groundwater final remedy in collaboration the State of California.
- (September 2024) Continue discussions with the State of California on planning soil remediation.
- (September 2024) Issue Soils Record of Decision.
- (December 2024) 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. Also, the California Environmental Quality Act requires the State of California to complete an Environmental Impact Report before additional remediation can be conducted. 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 the State anticipates will be completed for the Santa Susana Field Laboratory in FY 2023; 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.

The State of California announced a Settlement Agreement with The Boeing Company in May 2022 providing a framework for a cleanup standard for Boeing's areas of responsibility at the Santa Susana Field Laboratory. The cleanup standards in this framework are up to and including a "resident with garden" standard for chemical constituents and cleanup to "background" levels for radiological contamination. This Settlement Agreement does not apply to DOE's soil remediation in Area IV, but would be applied to adjacent areas, separated only by administrative boundaries.

Contractual Framework

The Energy Technology Engineering Center demolition, surveillance and maintenance contractor, North Wind Portage, Inc., will continue to perform general environmental monitoring, surveillance, and maintenance. The current contract has options that extend through September 2023. The procurement for a new contract to assume site cleanup, surveillance and maintenance scope is underway. Uncertainties with the timing of procurement could lead to additional extensions for the current contractor.

The regulatory/technical support contractor, CDM Smith is supporting the development of the National Environmental Policy Act and other regulatory documentation. The contract expires in December 2023.

In December 2021, the DOE awarded a cooperative agreement with the Santa Ynez Band of Chumash Indians 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. The DOE identified numerous challenges to implement Administrative Order on Consent with the current Look-Up Table Values in final Environmental Impact Statement. The DOE anticipates working with the State of California with the support of the Network of National Laboratories for Environmental Management and Stewardship to reconcile these differences in a timely manner. The State of California anticipates Final Program Environmental Impact Report will be issued and certified in FY 2023. Should the State and DOE reach a timely resolution, the State certify Environmental Impact Report, and the DOE issue its Soils Record of Decision, Energy Technology Engineering Center would begin implementation of soil remediation in FY 2024 or 2025.

Energy Technology Engineering Center

Funding (\$K)

FY 2022 Enacted	FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 Enacted	FY 2024 Request vs FY 2023 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

21,340	26,409	44,135	+17,726	+67%
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**Energy Technology Engineering Center
Explanation of Major Changes (\$K)**

FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 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

- Increase supports soil and groundwater remediation activities increasing groundwater interim measures before the state regulator completes its environmental review and subsequently initiating the soil and groundwater cleanup.

26,409	44,135	+17,726
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Total, Energy Technology Engineering Center	26,409	44,135	+17,726
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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 Program Environmental Impact Report will affect the timing and scope of 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 2023 Enacted	FY 2024 Request	Explanation of Changes FY 2024 Request vs FY 2023 Enacted
\$26,409,000	\$44,135,000	+\$17,726,000
<ul style="list-style-type: none"> Complete soils and groundwater planning activities. Complete Soil Remediation Action Implementation Plan. Continue soil remediation planning after Record of Decision is published. Actual cleanup is dependent on State completion of the Programmatic Environmental Impact Report. Accelerate groundwater remediation. 	<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 Program Environmental Impact Report. Initiate groundwater remediation after implementation plan is approved by the State regulators and State completion of the Program Environmental Impact Report. 	<ul style="list-style-type: none"> Increase supports soil and groundwater remediation activities increasing groundwater interim measures before the state regulator completes its environmental review and subsequently initiating the soil and groundwater cleanup.

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 2022, the Project will have shipped more than 13 million tons of material.

Direct maintenance and repair at the Moab Uranium Mill Tailings Remedial Action Project is estimated to be \$549,000 in FY 2024.

Highlights of the FY 2024 Budget Request

EM's FY 2024 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; continuing removal and handling of the autoclaves; and extracting contaminated groundwater and injecting freshwater to protect the Colorado River.

FY 2023 & FY 2024 Key Milestones/Outlook

- (September 2023) Excavate, transport, and dispose of approximately 1,000,000 tons of tailings.
- (September 2024) Excavate, transport, and dispose of approximately 1,000,000 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 an End State Contract for up to 10 years 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. This contract was extended eight months and will be followed by the Technical Assistance Contract for EMCBC field sites.

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 2022 Enacted	FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 Enacted	FY 2024 Request vs FY 2023 Enacted (%)
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Non-Defense Environmental Cleanup

Small Sites

Moab

CBC-MOAB-0031 / Soil and Water Remediation-Moab

67,000

67,000

67,000

+0

+0%

Moab
Explanation of Major Changes (\$K)

FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 Enacted
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Non-Defense Environmental Cleanup

Small Sites

Moab

CBC-MOAB-0031 / Soil and Water Remediation-Moab

- No change.

	67,000	67,000	+0
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Total, Moab	67,000	67,000	+0
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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 2023 Enacted	FY 2024 Request	Explanation of Changes FY 2024 Request vs FY 2023 Enacted
\$67,000,000	\$67,000,000	+\$0
<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 1,000,000 tons). • 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. • Atlas building demolition. • Initiation of autoclave handling. • Mill debris demolition. 	<ul style="list-style-type: none"> • Conduct Moab and Crescent Junction operation and maintenance. • Operate interim remedial action for contaminated groundwater and develop groundwater compliance action plan. • Excavate tailings and transport (4 trains/week) to the disposal cell (approximately 1,000,000 tons). • Perform operations and maintenance of the materials handling system and infrastructure. • Continue equipment maintenance/replacement. • Continue autoclave handling and removal. • Place a portion of the interim cover. • Procure and delivery of cover rock. 	<ul style="list-style-type: none"> • No change.

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. 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 eleven years, Congress has provided approximately \$200,000,000 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 Bayview areas.

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 (e.g., EO 14028, DOE O 205.1C, EM Cybersecurity Program Plan), 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 Lawrence Livermore National Laboratory.

Highlights of the FY 2024 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 several sites across the nation.

Other Sites

Funding (\$K)

	FY 2022 Enacted	FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 Enacted	FY 2024 Request vs FY 2023 Enacted (%)
Defense Environmental Cleanup					
Closure Sites					
Closure Sites Administration					
CBC-0100-EM / Litigation Support	2,329	2,452	2,423	-29	-1%
CBC-0100-FN / CBC Post Closure Administration - Fernald	1,076	1,062	500	-562	-53%
CBC-0100-RF / CBC Post Closure Administration - Rocky Flats	582	553	100	-453	-82%
Subtotal, Closure Sites Administration	3,987	4,067	3,023	-1,044	-26%
Non-Defense Environmental Cleanup					
Small Sites					
Lawrence Berkeley National Laboratory					
CBC-LBNL-0040 / Decontamination and Decommissioning-Lawrence Berkeley National Laboratory	5,000	15,000	0	-15,000	-100%
Other Sites					
CBC-0040-EF / Excess Office of Science Facilities	15,000	10,554	0	-10,554	-100%
Total, Small Sites	20,000	25,554	0	-25,554	-100%
Total, Other Sites	23,987	29,621	3,023	-26,598	-90%

Other Sites
Explanation of Major Changes (\$K)

	FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 Enacted
Defense Environmental Cleanup			
Closure Sites			
Closure Sites Administration			
CBC-0100-EM / Litigation Support			
• No significant change.	2,452	2,423	-29
CBC-0100-FN / CBC Post Closure Administration - Fernald			
• Decrease reflects reduced funding requirements for Fernald Workers II Settlement and post-closure administrative costs.	1,062	500	-562
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.	553	100	-453
Non-Defense Environmental Cleanup			
Small Sites			
Lawrence Berkeley National Laboratory			
CBC-LBNL-0040 / Decontamination and Decommissioning-Lawrence Berkeley National Laboratory			
• Decrease reflects the completion of the existing Old Town Demolition decontamination and decommissioning projects.	15,000	0	-15,000
Other Sites			
CBC-0040-EF / Excess Office of Science Facilities			
• No funding requested in FY 2024.	10,554	0	-10,554
Total, Other Sites	29,621	3,023	-26,598

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 2023 Enacted	FY 2024 Request	Explanation of Changes FY 2024 Request vs FY 2023 Enacted
\$2,452,000	\$2,423,000	-\$29,000
<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"> Provide ongoing litigation support to sites supported by the EM Consolidated Business Center. Support records vault lease and records management costs. 	<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 2023 Enacted	FY 2024 Request	Explanation of Changes FY 2024 Request vs FY 2023 Enacted
\$1,062,000	\$500,000	-\$562,000
<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"> Fund the Fernald Workers II class action lawsuit and contract closeout at the Fernald closure site. 	<ul style="list-style-type: none"> Decrease reflects reduced 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 2023 Enacted	FY 2024 Request	Explanation of Changes FY 2024 Request vs FY 2023 Enacted
\$553,000	\$100,000	-\$453,000
<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"> Support Rocky Flats Closure Project’s legal requirements. 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 enable the overall cleanup mission. These activities are typically managed through the Headquarters office(s) since they advance 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 EM 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;
- Asian American or Native American Pacific Islander-serving Institutions;
- Alaska Native-serving Institutions or Native Hawaiian-serving Institutions;
- Predominantly Black Institutions; and
- Native American-serving Nontribal Institutions.

The EM Minority Serving Institutions Partnership Program is made up of the following programs:

- 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, DOE field sites, 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.
- 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.

- Graduate Fellowship Program: This is a year-long fellowship program that includes salary, travel for conferences, and professional networking events at various DOE facilities.
- Competitive grants: (1) Technology, Curriculum, Professional Development Program grants; e.g., technology needs such as instrumentation and specialized equipment, and (2) Shared Interest Research Partnership Program potentially awarded on targeted research. Workshops and site visits may be provided to initiate or grant awards, enhance field site interactions, or to provide information.

Community Capacity Building

A Community Capacity Building Grant Program was established in FY 2023 to provide disadvantaged communities with needs-based capacity building identified through stakeholder engagement and Tribal consultation. The program will use a merit-based, competitive process to prioritize resources to recipients near EM locations affected by high or persistent poverty who have not benefitted from the significant economic activity generated by EM. The Community Capacity Building Program will allow for an expansion of already proven effective investments and review potential new activities to support economic capacity building:

- Site reindustrialization and land transfer for community investment and reuse: 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 and bolster economic development.
- 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 investments.
- Educational capacity for stakeholders and Tribal members to assist with independent oversight of EM cleanup activities and build economic development.

Technology Development

In FY 2024, 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 2024 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.

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 2023 pursuant to the Nevada Gold Mines legal settlement. DOE plans to complete additional National Environmental Policy Act environmental analyses and initiate the fee rule in FY 2023. 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 2023, 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 three of the ten sites, Rio Algom Mining LLC, West Chicago Environmental Response Trust, and Western Nuclear, Inc. These companies will continue to complete their remediation efforts.

Mission Support

Funding (\$K)

FY 2022 Enacted	FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 Enacted	FY 2024 Requested vs FY 2023 Enacted (%)
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Defense Environmental Cleanup

Innovation and Technology Development

Mission Support

HQ-TD-0100 / Technology Development

30,000 40,000 30,000 -10,000 -25%

Program Support

Mission Support

EM-HBCU-0100 / Minority Serving Institution Partnerships Program

56,000 56,000 56,000 +0 +0%

HQ-CCB-0100 / Community Capacity Building

0 19,044 40,000 +20,956 +110%

HQ-MS-0100 / Policy, Management, and Technical Support

6,979 7,239 7,504 +265 +4%

Subtotal, Mission Support

62,979 82,283 103,504 +21,221 +26%

Total, Defense Environmental Cleanup

92,979 122,283 133,504 +11,221 +9%

Non-Defense Environmental Cleanup

Mercury Storage Receipts

Mission Support

HQ-MSF /

0 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 0 -2,100 -100%

Total, Non-Defense Environmental Cleanup

2,100 5,100 3,000 -2,100 -41%

Uranium Enrichment Decontamination and Decommissioning Fund

U/Th Reimbursements

Mission Support

HQ-UR-0100 / Reimbursements to Uranium/Thorium Licensees

16,155 14,800 24,400 +9,600 +65%

Total, Mission Support

111,234 142,183 160,904 +18,721 +13%

Environmental Management/

Mission Support

Mission Support
Explanation of Major Changes (\$K)

	FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 Enacted
Defense Environmental Cleanup			
Innovation and Technology Development			
Mission Support			
HQ-TD-0100 / Technology Development			
<ul style="list-style-type: none"> Decrease reflects the ramp-down of activities for spent nuclear fuel management and ventilation systems research. 	40,000	30,000	-10,000
Program Support			
EM-HBCU-0100 / Minority Serving Institution Partnerships Program			
<ul style="list-style-type: none"> No change. 	56,000	56,000	+0
HQ-CCB-0100 / Community Capacity Building			
<ul style="list-style-type: none"> Increase supports expansion of investments for disadvantaged communities. 	19,044	40,000	+20,956
HQ-MS-0100 / Policy, Management, and Technical Support			
<ul style="list-style-type: none"> No significant change. 	7,239	7,504	+265
Non-Defense Environmental Cleanup			
Management and Storage of Elemental Mercury			
HQ-MSF-0100 / Management and Storage of Elemental Mercury			
<ul style="list-style-type: none"> Decrease due to completion of National Environmental Policy Act analysis. 	2,100	0	-2,100
Mercury Storage Receipts			
HQ-MSF /			
<ul style="list-style-type: none"> No change. 	3,000	3,000	+0
Uranium Enrichment Decontamination and Decommissioning Fund			
U/Th Reimbursements			
HQ-UR-0100 / Reimbursements to Uranium/Thorium Licensees			
<ul style="list-style-type: none"> Increase supports all FY 2023 and prior claims. 	14,800	24,400	+9,600
Total, Mission Support	142,183	160,904	+18,721

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 2023 Enacted	FY 2024 Request	Explanation of Changes FY 2024 Request vs FY 2023 Enacted
\$7,239,000	\$7,504,000	+\$265,000
<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 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 indicate whether and how EM’s commitment to safety is working. 	<ul style="list-style-type: none"> No significant change.

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- Continue to provide support to various advisory groups such as the Nuclear Regulatory Commission, National Academy of Sciences and Low-Level Radioactive Waste Forum, to obtain technical assistance and expertise that indirectly supports EM mission objectives.
 - Continue to provide support to packaging and transportation stakeholders outreach grants.
 - Continue to provide rapid response from technical experts or “External/Internal” review teams to address emerging, imminent technical issues impeding site cleanup and closure.
 - Continue to provide technical solution projects designed to reduce near-term technical risks and technical assistance to include site troubleshooting, consulting, scientific or technical problem solving.
- Continue to 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 2023 Enacted	FY 2024 Request	Explanation of Changes FY 2024 Request vs FY 2023 Enacted
\$19,044,000	\$40,000,000	+\$20,956,000
<ul style="list-style-type: none"> Completed listening sessions with State and Tribal Government Working Group and Energy Communities Alliance. Benchmark existing Federal government technical assistance/capacity building financial programs at the Environmental Protection Agency (EPA) (Thriving Communities Technical Assistance Centers), DOE Office of Clean Energy Demonstration, and DOE Office of Legacy Management (Environmental Justice grants). Review screening tools to inform design of competitive, merit-based process to identify appropriate recipients including U.S. Census, EPA Environmental Justice Screen, and White House Council on Environmental Quality Climate and Economic Justice Screening Tool. 	<ul style="list-style-type: none"> Continued support for existing and 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"> Increase supports expansion of investments for disadvantaged communities.

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. The EM Minority Serving Institutions Partnership Program is made up of the following programs:

- 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, DOE field sites, 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.
- 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.
- EM Minority Serving Institutions Shared Interest Research Partnership Program: Grants or contracts potentially awarded on targeted research.
- 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.
- Graduate Fellowship Program: This is year-long fellowship program includes salary, travel for conferences and professional networking events at various DOE facilities.

Minority Serving Institution Partnerships Program (PBS: EM-HBCU-0100)

Activities and Explanation of Changes

FY 2023 Enacted	FY 2024 Request	Explanation of Changes FY 2024 Request vs FY 2023 Enacted
\$56,000,000	\$56,000,000	+\$0
<ul style="list-style-type: none"> Continue support for the Department’s Minority Serving Institution Partnerships Program to attract, develop, and retain the technical workforce at its national laboratories, field sites, and offices required to execute its mission. Develop a Minority Serving Institution Science, Technology, Engineering and Mathematics, Manufacturing, and Cybersecurity Consortium. 	<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 DOE national laboratories, field sites, and offices required to execute its mission. 	<ul style="list-style-type: none"> No change.

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 2024 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 2024, 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 2024, 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 2023 Enacted	FY 2024 Request	Explanation of Changes FY 2024 Request vs FY 2023 Enacted
\$40,000,000	\$30,000,000	-\$10,000,000
<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 approaches 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. Continue to support the National Spent Nuclear Fuel Program to address issues related to storing, transporting, processing, and disposing of Department-owned and managed spent nuclear fuel. Continue to support work associated with qualification, testing and research to advance the state-of-the-art containment ventilation systems. 	<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"> Decrease reflects the ramp-down of activities for spent nuclear fuel management and ventilation systems research.

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 2023 Enacted	FY 2024 Request	Explanation of Changes FY 2024 Request vs FY 2023 Enacted
\$2,100,000	\$0	-\$2,100,000
<ul style="list-style-type: none"> Continue receipt of elemental mercury from domestic sources. 	<ul style="list-style-type: none"> Complete fee rule. 	<ul style="list-style-type: none"> Decrease due to completion of National Environmental Policy Act analysis.

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 2023, 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 three of the ten sites, Rio Algom Mining LLC, West Chicago Environmental Response Trust, 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 2023 Enacted	FY 2024 Request	Explanation of Changes FY 2024 Request vs FY 2023 Enacted
\$14,800,000	\$24,400,000	+\$9,600,000
<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 2022 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 supports all FY 2023 and prior claims.

**Title X of the Energy Policy Act of 1992: Uranium/Thorium Reimbursement Program
Status of Payments through Fiscal Year 2022 and Estimated Maximum Program Liability**

(\$ Thousands)

<u>Licensees</u>	Total Payments FY 1994- FY 2022	Approved but Unpaid Claim Balances After FY 2022 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	711
Atlantic Richfield Company ^a	32,306	0	0
Atlas Corporation/Moab Mill Reclamation Trust ^a	9,694	0	0
Cotter Corporation/Colorado Legacy Land	4,884	0	2,121
Dawn Mining Company	17,299	1,851	1,851
Homestake Mining Company	110,130	0	39,571
Pathfinder Mines Corporation/Areva/Orano	10,790	0	328
Petrotomics Company ^a	2,850	0	0
Rio Algom Mining LLC ^b	48,081	0	0
Tennessee Valley Authority	22,220	2,910	2,910
Umetco Minerals Corporation-CO	69,710	9,710	21,824
Umetco Minerals Corporation-WY	25,835	0	1,185
Western Nuclear, Incorporated	33,636	0	0
Subtotal, Uranium	389,740	14,471	70,501
Thorium			
West Chicago ^c	399,652	0	0
Subtotal, Thorium	399,652	0	0
Total, Uranium and Thorium	789,392	14,471	70,501

^a Reimbursements have been completed to the Atlantic Richfield Company, the licensees of the Moab site, the Petrotomics Company, the Rio Algom LLC, West Chicago Environmental Trust, 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 thorium site reimbursement has reached its authority allowed under Title X.

Program Direction

Overview

Program Direction provides orchestration for the Federal workforce responsible for the overall direction and administrative support of the EM program. This includes both Headquarters and field personnel. The EM mission to conduct safe cleanup of the environment from decades of nuclear weapons production and government-sponsored nuclear energy research is carried out by a workforce composed largely of contractors; however, there are various 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 2024 Budget Request

In FY 2024, 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. EM received approval of a new staffing plan in FY 2022 that identifies a full mapping of positions for Headquarters and each of the EM site offices. The staffing plan accounts for a total of 1,483 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 modification staffing plan include:

- The higher position target accounts for EM's historical attrition rate of 10 percent. Additionally, with 28 percent of EM's workforce eligible to retire now and 47 percent in 5 years, the additional positions allow EM to plan for a potential increased rate of attrition.
- Supports 30 career pathways, succession planning for our leadership, and builds the Science, Technology, Engineering and Mathematics technical fields, 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 39 percent of the current EM workforce available to retire in FY 2025.
- Enhance partnerships with Historically Black Colleges and Universities and other Minority Serving Institutions (e.g., Hispanic Serving Institutions) 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 2022 Enacted	FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 Enacted	FY 2024 Request vs FY 2023 Enacted (%)
Carlsbad					
Salaries and Benefits	11,015	11,863	12,949	+1,086	+9%
Travel	488	488	488	+0	+0%
Support Services	220	220	220	+0	+0%
Other Related Expenses	750	750	533	-217	-29%
Total, Carlsbad	12,473	13,321	14,190	+869	+7%
Idaho					
Salaries and Benefits	8,155	8,500	9,403	+903	+11%
Travel	194	194	194	+0	+0%
Support Services	200	200	200	+0	+0%
Other Related Expenses	1,390	1,390	948	-442	-32%
Total, Idaho	9,939	10,284	10,745	+461	+4%
Oak Ridge					
Salaries and Benefits	11,475	14,040	14,618	+578	+4%
Travel	158	158	158	+0	+0%
Support Services	2,265	2,265	1,965	-300	-13%
Other Related Expenses	1,250	1,250	960	-290	-23%
Total, Oak Ridge	15,148	17,713	17,701	-12	+0%
Portsmouth/Paducah Project Office					
Salaries and Benefits	9,566	9,970	11,360	+1,390	+14%
Travel	420	420	420	+0	+0%
Support Services	2,660	2,660	2,260	-400	-15%
Other Related Expenses	1,965	1,965	1,438	-527	-27%
Total, Portsmouth/Paducah Project Office	14,611	15,015	15,478	+463	+3%
Richland					
Salaries and Benefits	39,309	42,023	45,583	+3,560	+8%
Travel	578	578	578	+0	+0%
Support Services	800	800	800	+0	+0%
Other Related Expenses	2,500	2,500	1,811	-689	-28%
Total, Richland	43,187	45,901	48,772	+2,871	+6%
River Protection					
Salaries and Benefits	20,812	23,695	25,429	+1,734	+7%
Travel	525	525	525	+0	+0%
Support Services	389	389	389	+0	+0%
Other Related Expenses	2,300	2,300	1,705	-595	-26%
Total, River Protection	24,026	26,909	28,048	+1,139	+4%
Savannah River					
Salaries and Benefits	40,251	45,652	47,530	+1,878	+4%
Travel	473	473	473	+0	+0%
Support Services	322	322	322	+0	+0%
Other Related Expenses	2,300	2,300	1,652	-648	-28%

**Environmental Management/
Program Direction**

FY 2024 Congressional Justification

	FY 2022 Enacted	FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 Enacted	FY 2024 Request vs FY 2023 Enacted (%)
Total, Savannah River	43,346	48,747	49,977	+1,230	+3%
Small Sites					
Salaries and Benefits	3,969	4,512	4,698	+186	+4%
Travel	158	158	158	+0	+0%
Support Services	420	420	380	-40	-10%
Other Related Expenses	450	450	373	-77	-17%
Total, Small Sites	4,997	5,540	5,609	+69	+1%
Nevada Site Office					
Salaries and Benefits	2,298	2,763	2,877	+114	+4%
Travel	68	68	68	+0	+0%
Support Services	100	100	100	+0	+0%
Other Related Expenses	230	230	235	+5	+2%
Total, Nevada Site Office	2,696	3,161	3,280	+119	+4%
Los Alamos Site Office					
Salaries and Benefits	6,321	7,341	7,643	+302	+4%
Travel	131	131	131	+0	+0%
Support Services	1,450	550	500	-50	-9%
Other Related Expenses	550	550	428	-122	-22%
Total, Los Alamos Site Office	8,452	8,572	8,702	+130	+2%
Field					
Salaries and Benefits	153,171	170,359	182,090	+11,731	+7%
Travel	3,193	3,193	3,193	+0	+0%
Support Services	8,826	7,926	7,136	-790	-10%
Other Related Expenses	13,685	13,685	10,083	-3,602	-26%
Total, Field	178,875	195,163	202,502	+7,339	+4%
Headquarters Operations					
Salaries and Benefits	51,945	57,335	62,756	+5,421	+9%
Travel	1,785	1,785	1,785	+0	+0%
Support Services	30,354	17,968	14,179	-3,789	-21%
Other Related Expenses	690	690	635	-55	-8%
Total, Headquarters Operations	84,774	77,778	79,355	+1,577	+2%
Headquarters Working Capital Fund					
Other Related Expenses	11,869	11,869	11,146	-723	-6%
Consolidated Business Center					
Salaries and Benefits	25,008	27,511	30,715	+3,204	+12%
Travel	400	400	400	+0	+0%
Support Services	2,415	2,415	1,815	-600	-25%
Other Related Expenses	1,866	1,866	960	-906	-49%
Total, Consolidated Business Center	29,689	32,192	33,890	+1,698	+5%
Environmental Management					
Salaries and Benefits	230,124	255,205	275,561	+20,356	+8%
Travel	5,378	5,378	5,378	+0	+0%
Environmental Management/ Program Direction					

	FY 2022 Enacted	FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 Enacted	FY 2024 Request vs FY 2023 Enacted (%)
Support Services	41,595	28,309	23,130	-5,179	-18%
Other Related Expenses	28,110	28,110	22,824	-5,286	-19%
Total, Environmental Management Full Time Equivalents	305,207	317,002	326,893	+9,891	+3%
	1,290	1,375	1,425	+50	+4%

Support Services and Other Related Expenses

	FY 2022 Enacted	FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 Enacted
Support Services				
Technical Support				
Feasibility of Design Considerations	4,000	3,000	2,500	-500
System Definition	100	85	85	-
Economic and Environmental Analysis	6,800	3,990	2,990	-1,000
Test and Evaluation Studies	100	84	84	-
Surveys or Reviews of Technical Operations	9,600	6,950	5,950	-1,000
Total, Technical Support	<u>20,600</u>	<u>14,109</u>	<u>11,609</u>	<u>-2,500</u>
Management Support				
Directives Management Studies	1,900	1,672	1,472	-200
Automatic Data Processing	3,600	2,746	2,246	-500
Training and Education	800	150	150	-
Analysis of DOE Management Processes	1,000	912	912	-
Reports and Analyses Management and General Administrative Support	13,695	8,720	6,741	-1,979
Total, Management Support	<u>20,995</u>	<u>14,200</u>	<u>11,521</u>	<u>-2,679</u>
Total, Support Services	41,595	28,309	23,130	-5,179
Other Related Expenses				
Rent to GSA	2,760	2,760	2,260	-500
Rent to Others	1,167	1,167	867	-300
Communication, Utilities, Misc.	2,125	2,125	1,825	-300
Printing and Reproduction	10	10	10	-
Other Services	5,355	5,355	2,592	-2,763
Training	1,500	1,500	1,318	-182
Purchases from Gov. Accounts	345	345	345	-
Operation and Maintenance of Equipment	282	282	282	-
Supplies and Materials	912	912	894	-18

	FY 2022 Enacted	FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 Enacted
Equipment	1,785	1,785	1,285	-500
Working Capital Fund	11,869	11,869	11,146	-723
Total, Other Related Expenses	28,110	28,110	22,824	-5,286

Program Direction (PBS: HQ-PD-0100)

Activities and Explanation of Changes

FY 2023 Enacted	FY 2024 Request	Explanation of Changes FY 2024 Request vs FY 2023 Enacted
\$305,133,000	\$315,747,000	+\$10,614,000
Salaries and Benefits	\$255,205,000	\$275,561,000
		+\$20,356,000
<ul style="list-style-type: none"> Supports Federal salaries and benefits for EM's full-time equivalent level. 	<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 5.2 percent pay raise and increase for Federal benefits.
Travel	\$5,378,000	\$5,378,000
		+\$0
<ul style="list-style-type: none"> Funding supports 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"> 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"> No change.
Support Services	\$28,309,000	\$23,130,000
		-\$5,179,000
<ul style="list-style-type: none"> Funding supports services in the areas of administrative, procurement and human capital support; technical oversight support; information technology to support 	<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 	<ul style="list-style-type: none"> Decrease aligns resources with planned support services requirements.

modernization of current systems; operation and maintenance of equipment; and operation and maintenance of facilities occupied by EM staff.	modernization of current systems; operation and maintenance of equipment; and operation and maintenance of facilities occupied by EM staff.		
Other Related Expenses	\$16,241,000	\$11,678,000	-\$4,563,000
<ul style="list-style-type: none"> Funding supports fixed requirements associated with rent, utilities, and telecommunications; building and grounds maintenance; computer/video maintenance and support; IT equipment leases, purchases, and maintenance. Also funds miscellaneous purchases such as supplies, materials, and subscriptions. 	<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 2023 Enacted	FY 2024 Request	Explanation of Changes FY 2024 Request vs FY 2023 Enacted
\$11,869,000	\$11,146,000	-\$723,000
Other Related Expenses	\$11,146,000	-\$723,000

- | | | |
|---|--|--|
| <ul style="list-style-type: none"> Funding supports 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 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"> No significant change. |
|---|--|--|

**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 2022 Actual Cost	FY 2022 Planned Cost	FY 2023 Planned Cost	FY 2024 Planned Cost
Carlsbad	11,890	11,890	17,200	20,000
Idaho National Laboratory	26,120	26,120	26,642	32,633
Moab	523	523	536	549
Oak Ridge	114,123	114,123	64,882	66,310
Pacific Northwest National Laboratory	0	0	0	0
Paducah	27,885	27,885	28,666	35,686
Portsmouth	42,502	42,502	59,160	42,400
Richland Operations Office	190,991	190,991	212,800	220,200
Office of River Protection	96,630	96,630	119,229	158,476
Savannah River	72,524	72,524	203,277	203,277
Total, Direct-Funded Maintenance and Repair	583,188	583,188	732,392	752,833

Costs for Indirect-Funded Maintenance and Repair (including Deferred Maintenance Reduction)

(\$K)

	FY 2022 Actual Cost	FY 2022 Planned Cost	FY 2023 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	53,566	53,566	75,540	49,108
Total, Indirect-Funded Maintenance and Repair	59,715	59,715	82,140	55,708

**Environmental Management Research and Development
Research and Development (\$K)**

	FY 2022 Enacted	FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 Enacted
Basic	0	0	0	+0
Applied	10,890	14,190	10,890	-3,300
Development	22,110	28,810	22,110	-6,700
Subtotal, R&D	<u>33,000</u>	<u>43,000</u>	<u>33,000</u>	<u>-10,000</u>
Equipment	0	0	0	+0
Construction	0	0	0	+0
Total, R&D	33,000	43,000	33,000	-10,000

**Environmental Management
Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR)**

	FY 2022 Enacted	FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 Enacted
Technology Development and Deployment				
SBIR	1,095	1,460	1,095	-365
STTR	0	0	0	+0
Oak Ridge				
SBIR	110	110	110	+0
STTR	0	0	0	+0
Total, SBIR	<u>1,205</u>	<u>1,570</u>	<u>1,205</u>	<u>-365</u>
Total, STTR	0	0	0	+0

Safeguards and Security by Activity (\$K)

	FY 2022 Enacted	FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 Enacted	FY 2024 Request vs FY 2023 Enacted (%)
Carlsbad					
Protective Forces	4,418	4,418	4,674	+256	+6%
Physical Security Systems	716	716	757	+41	+6%
Security Investigations	63	63	67	+4	+6%
Program Management	273	273	289	+16	+6%
Subtotal, Carlsbad	5,470	5,470	5,787	+317	+6%
Cyber Security	2,336	2,356	4,500	+2,144	+91%
Total, Carlsbad	7,806	7,826	10,287	+2,461	+31%
Oak Ridge					
Protective Forces	4,285	4,329	5,131	+802	+19%
Physical Security Systems	1,850	2,000	2,215	+215	+11%
Information Security	600	718	719	+1	+0%
Personnel Security	700	821	838	+17	+2%
Security Investigations	200	306	239	-67	-22%
Material Control and Accountability	405	487	485	-2	+0%
Program Management	220	254	263	+9	+4%
Subtotal, Oak Ridge	8,260	8,915	9,890	+975	+11%
Cyber Security	5,140	5,000	4,110	-890	-18%
Total, Oak Ridge	13,400	13,915	14,000	+85	+1%
Paducah					
Protective Forces	5,462	5,666	5,913	+247	+4%
Physical Security Systems	632	650	709	+59	+9%
Information Security	841	865	858	-7	-1%
Personnel Security	583	600	651	+51	+9%
Security Investigations	229	236	342	+106	+45%
Material Control and Accountability	0	0	342	+342	+100%
Security Infrastructure/Construction	5,105	4,708	3,931	-777	-17%
Program Management	1,877	2,045	1,802	-243	-12%
Subtotal, Paducah	14,729	14,770	14,548	-222	-2%
Cyber Security	1,477	1,336	1,982	+646	+48%

	FY 2022 Enacted	FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 Enacted	FY 2024 Request vs FY 2023 Enacted (%)
Total, Paducah	16,206	16,106	16,530	+424	+3%
Portsmouth					
Protective Forces	7,290	10,084	8,960	-1,124	-11%
Physical Security Systems	1,180	702	729	+27	+4%
Information Security	690	424	452	+28	+7%
Personnel Security	613	424	413	-11	-3%
Security Investigations	242	144	149	+5	+3%
Security Infrastructure/Construction	594	434	868	+434	+100%
Program Management	800	609	603	-6	-1%
Subtotal, Portsmouth	11,409	12,821	12,174	-647	-5%
Cyber Security	5,281	3,769	5,190	+1,421	+38%
Total, Portsmouth	16,690	16,590	17,364	+774	+5%
Richland					
Protective Forces	61,266	63,048	62,900	-148	+0%
Physical Security Systems	8,847	10,097	8,888	-1,209	-12%
Information Security	1,090	1,490	1,243	-247	-17%
Personnel Security	2,047	2,047	2,047	+0	+0%
Security Investigations	857	755	708	-47	-6%
Material Control and Accountability	1,069	1,069	1,255	+186	+17%
Program Management	10,226	10,546	10,180	-366	-3%
Subtotal, Richland	85,402	89,052	87,221	-1,831	-2%
Cyber Security	13,898	14,898	13,445	-1,453	-10%
Total, Richland	99,300	103,950	100,666	-3,284	-3%
Savannah River					
Protective Forces	95,442	101,237	110,951	+9,714	+10%
Physical Security Systems	15,279	15,279	15,279	+0	+0%
Information Security	2,690	2,450	2,450	+0	+0%
Personnel Security	8,704	7,950	7,950	+0	+0%
Security Investigations	65	65	65	+0	+0%
Material Control and Accountability	5,702	5,199	5,199	+0	+0%
Security Infrastructure/Construction	3,189	0	0	+0	+0%
Program Management	12,040	12,040	12,040	+0	+0%
Transportation	215	215	215	+0	+0%

Environmental Management

FY 2024 Congressional Justification

	FY 2022 Enacted	FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 Enacted	FY 2024 Request vs FY 2023 Enacted (%)
Subtotal, Savannah River	143,326	144,435	154,149	+9,714	+7%
Cyber Security	21,118	15,414	8,784	-6,630	-43%
Total, Savannah River	164,444	159,849	162,933	+3,084	+2%
Los Alamos National Laboratory					
Protective Forces	0	500	500	+0	+0%
Physical Security Systems	0	500	500	+0	+0%
Information Security	0	750	750	+0	+0%
Personnel Security	0	50	50	+0	+0%
Security Investigations	0	75	75	+0	+0%
Material Control and Accountability	0	50	50	+0	+0%
Security Infrastructure/Construction	0	250	250	+0	+0%
Program Management	0	500	500	+0	+0%
Subtotal, Los Alamos National Laboratory	0	2,675	2,675	+0	+0%
Cyber Security	0	2,325	2,325	+0	+0%
Total, Los Alamos National Laboratory	0	5,000	5,000	+0	+0%
West Valley Demonstration Project					
Protective Forces	3,642	5,316	3,630	-1,686	-32%
Program Management	306	312	421	+109	+35%
Subtotal, West Valley Demonstration Project	3,948	5,628	4,051	-1,577	-28%
Cyber Security	1,350	356	1,814	+1,458	+410%
Total, West Valley Demonstration Project	5,298	5,984	5,865	-119	-2%
Total, Safeguards and Security	323,144	329,220	332,645	+3,425	+1%

Safeguards and Security (\$K)

	FY 2022 Enacted	FY 2023 Enacted	FY 2024 Request	FY 2024 Request vs FY 2023 Enacted	FY 2024 Request vs FY 2023 Enacted (%)
Protective Forces	181,805	194,598	202,659	+8,061	+4%
Physical Security Systems	28,504	29,944	29,077	-867	-3%
Information Security	5,911	6,697	6,472	-225	-3%
Personnel Security	12,647	11,892	11,949	+57	+0%
Security Investigations	1,656	1,644	1,645	+1	+0%
Material Control and Accountability	7,176	6,805	7,331	+526	+8%
Security Infrastructure/Construction	8,888	5,392	5,049	-343	-6%
Program Management	25,742	26,579	26,098	-481	-2%
Transportation	215	215	215	+0	+0%
Subtotal, Safeguards and Security	272,544	283,766	290,495	+6,729	+2%
Cyber Security	50,600	45,454	42,150	-3,304	-7%
Total, Safeguards and Security	323,144	329,220	332,645	+3,425	+1%

DEPARTMENT OF ENERGY
Funding by Site
TAS_0251 - Defense Environmental Cleanup - FY 2024
(Dollars in Thousands)

Request Detail		
Requested Total		
FY 2022	FY 2023	FY 2024

Carlsbad Area Office

Program Direction - Defense Environmental Cleanup	12,473	13,321	14,190
Safeguards and Security - Defense Environmental Cleanup	7,806	7,826	10,287
Total Carlsbad Area Office	20,279	21,147	24,477

Consolidated Business Center

Closure Sites Administration	2,329	2,452	2,423
Program Direction - Defense Environmental Cleanup	34,686	37,732	39,499
Total Consolidated Business Center	37,015	40,184	41,922

East Tennessee Technology Park (K25)

Safeguards and Security - Defense Environmental Cleanup	13,400	13,915	14,000
Total East Tennessee Technology Park (K25)	13,400	13,915	14,000

Fernald Environmental Management Project

Closure Sites Administration	1,076	1,062	500
Total Fernald Environmental Management Project	1,076	1,062	500

Hanford Site

River Corridor and Other Cleanup Operations	254,479	279,085	180,000
Central Plateau Remediation	650,926	695,071	684,289
18-D-404 WESF Modification and Capsule Storage	8,000	3,100	0
22-D-401 Eastern Plateau Fire Station	15,200	3,100	7,000
22-D-402 L-897, 200 Area Water Treatment Facility	12,800	8,900	11,200
23-D-404 181D Export Water System Reconfiguration and Upgrade	0	6,770	27,149
23-D-405 181B Export Water System Reconfiguration and Upgrade	0	480	462
24-D-401 Environmental Restoration Disposal Facility Supercell 11 Expansion Proj	0	0	1,000
Construction - Richland	36,000	22,350	46,811
Richland	941,405	996,506	911,100
Safeguards and Security - Defense Environmental Cleanup	99,300	103,950	100,666
Total Hanford Site	1,040,705	1,100,456	1,011,766

Idaho National Laboratory

Idaho Cleanup and Waste Disposition	432,313	424,295	377,623
Idaho Community and Regulatory Support	2,658	2,705	2,759
22-D-403 Idaho Spent Nuclear Fuel Staging Facility	3,000	8,000	10,159
22-D-404 Additional ICDF Landfill Disposal Cell and Evaporation Ponds Project	5,000	8,000	46,500
23-D-402 - Calcine Construction	0	15,000	10,000
Construction - Idaho	8,000	31,000	66,659
Idaho National Laboratory (INL)	442,971	458,000	447,041
Total Idaho National Laboratory	442,971	458,000	447,041

Idaho Operations Office

Program Direction - Defense Environmental Cleanup	9,939	10,284	10,745
Total Idaho Operations Office	9,939	10,284	10,745

Lawrence Livermore National Laboratory

Lawrence Livermore National Laboratory (LLNL)	1,806	1,842	1,879
LLNL Excess Facilities D&D	35,000	35,000	20,195
NNSA Sites and Nevada Off-Sites	36,806	36,842	22,074
Total Lawrence Livermore National Laboratory	36,806	36,842	22,074

DEPARTMENT OF ENERGY
Funding by Site
TAS_0251 - Defense Environmental Cleanup - FY 2024
(Dollars in Thousands)

Request Detail		
Requested Total		
FY 2022	FY 2023	FY 2024

Los Alamos National Laboratory

Los Alamos National Laboratory (LANL)	275,119	286,316	273,831
Los Alamos Excess Facilities D&D	17,000	40,519	13,648
NNSA Sites and Nevada Off-Sites	292,119	326,835	287,479
Safeguards and Security - Defense Environmental Cleanup	0	5,000	5,000
Total Los Alamos National Laboratory	292,119	331,835	292,479

Nevada Field Office

Program Direction - Defense Environmental Cleanup	2,696	3,161	3,280
Total Nevada Field Office	2,696	3,161	3,280

Nevada Operations Office

Nevada Site	5,142	3,900	5,177
NNSA Sites and Nevada Off-Sites	5,142	3,900	5,177
Total Nevada Operations Office	5,142	3,900	5,177

Nevada National Security Site

Nevada Site	70,595	58,752	56,775
NNSA Sites and Nevada Off-Sites	70,595	58,752	56,775
Total Nevada National Security Site	70,595	58,752	56,775

NNSA Albuquerque Complex

Program Direction - Defense Environmental Cleanup	8,452	8,572	8,702
Total NNSA Albuquerque Complex	8,452	8,572	8,702

Oak Ridge National Laboratory

OR Nuclear Facility D&D	337,062	334,221	335,000
U233 Disposition Program	55,000	55,628	55,000
Oak Ridge (OR)	392,062	389,849	390,000
Total Oak Ridge National Laboratory	392,062	389,849	390,000

Oak Ridge Office

Program Direction - Defense Environmental Cleanup	15,148	17,713	17,701
Total Oak Ridge Office	15,148	17,713	17,701

Oak Ridge Reservation

OR Cleanup and Waste Disposition	73,725	62,000	72,000
Oak Ridge (OR)	73,725	62,000	72,000
Total Oak Ridge Reservation	73,725	62,000	72,000

Oak Ridge Reservation (Off-Site)

OR Community and Regulatory Support	5,096	5,300	5,500
Oak Ridge (OR)	5,096	5,300	5,500
Total Oak Ridge Reservation (Off-Site)	5,096	5,300	5,500

Office of River Protection

Waste Treatment Immobilization Plant Commissioning	50,000	50,000	466,000
Rad Liquid Tank Waste Stabilization and Disposition	837,642	851,100	813,625
01-D-16D High-Level Waste Facility	144,358	392,200	600,000
01-D-16E Pretreatment Facility	20,000	20,000	20,000
15-D-409 Low Activity Waste Pretreatment System	0	0	60,000

DEPARTMENT OF ENERGY
Funding by Site
TAS_0251 - Defense Environmental Cleanup - FY 2024
(Dollars in Thousands)

	Request Detail		
	Requested Total		
	FY 2022	FY 2023	FY 2024
18-D-16 Waste treatment and immobilization plant - LBL/Direct Feed LAW	586,000	412,700	0
23-D-403, Hanford 200 West Area Tank Farms Risk Management Project	0	4,408	15,309
Construction - Office of River Protection	750,358	829,308	695,309
ORP Low-Level Waste Offsite Disposal	7,000	0	0
Office of River Protection (ORP)	1,645,000	1,730,408	1,974,934
Program Direction - Defense Environmental Cleanup	24,026	26,909	28,048
Total Office of River Protection	1,669,026	1,757,317	2,002,982
Paducah Gaseous Diffusion Plant			
Program Direction - Defense Environmental Cleanup	14,611	15,015	15,478
Safeguards and Security - Defense Environmental Cleanup	16,206	16,106	16,530
Total Paducah Gaseous Diffusion Plant	30,817	31,121	32,008
Portsmouth Gaseous Diffusion Plant			
Safeguards and Security - Defense Environmental Cleanup	16,690	16,590	17,364
Total Portsmouth Gaseous Diffusion Plant	16,690	16,590	17,364
Richland Operations Office			
Richland Community and Regulatory Support	8,621	10,013	10,100
Richland	8,621	10,013	10,100
Program Direction - Defense Environmental Cleanup	43,187	45,901	48,772
Total Richland Operations Office	51,808	55,914	58,872
Rocky Flats Site			
Closure Sites Administration	582	553	100
Total Rocky Flats Site	582	553	100
Sandia Site Office			
Sandia National Laboratory (SNL)	4,576	4,003	2,264
NNSA Sites and Nevada Off-Sites	4,576	4,003	2,264
Total Sandia Site Office	4,576	4,003	2,264
Savannah River National Laboratory			
Savannah River National Laboratory Operations & Maintenance	0	41,000	42,000
Savannah River Sites	0	41,000	42,000
Total Savannah River National Laboratory	0	41,000	42,000
Savannah River Operations Office			
SR Community and Regulatory Support	11,805	12,137	12,389
Savannah River Sites	11,805	12,137	12,389
Program Direction - Defense Environmental Cleanup	43,346	48,747	49,977
Safeguards and Security - Defense Environmental Cleanup	164,444	159,849	162,933
Total Savannah River Operations Office	219,595	220,733	225,299
Savannah River Site			
Savannah River Risk Management Operations	459,090	485,864	453,109
18-D-402 Emergency Operations Center Replacement, SR	8,999	25,568	34,733
19-D-701 SR Security Systems Replacement	5,000	12,000	0
Construction - Savannah River Risk Management Operations	13,999	37,568	34,733
Total, Savannah River Risk Management Operations	473,089	523,432	487,842
Radioactive Liquid Tank Waste Stabilization	889,365	851,660	880,323
18-D-401 Saltstone disposal unit #8/9	68,000	49,832	31,250

DEPARTMENT OF ENERGY
Funding by Site
TAS_0251 - Defense Environmental Cleanup - FY 2024
(Dollars in Thousands)

	Request Detail		
	Requested Total		
	FY 2022	FY 2023	FY 2024
20-D-401 Saltstone Disposal Unit #10, 11, 12	19,500	37,668	56,250
Construction - Savannah River Sites	87,500	87,500	87,500
Savannah River Legacy Pensions	130,882	132,294	65,898
Savannah River Sites	1,580,836	1,594,886	1,521,563
Total Savannah River Site	1,580,836	1,594,886	1,521,563
Separations Process Research Unit			
Separations Processing Research Unit	15,000	15,300	15,300
NNSA Sites and Nevada Off-Sites	15,000	15,300	15,300
Total Separations Process Research Unit	15,000	15,300	15,300
Washington Headquarters			
Program Direction - Defense Environmental Cleanup	96,643	89,647	90,501
Program Support - Defense Environmental Cleanup	62,979	82,283	103,504
Technology Development and Deployment	30,000	40,000	30,000
Total Washington Headquarters	189,622	211,930	224,005
Waste Isolation Pilot Plant			
Waste Isolation Pilot Plant (WIPP)	353,424	353,424	369,961
15-D-411 Safety Significant Confinement Ventilation System, WIPP	65,000	59,073	44,365
15-D-412 Utility Shaft, WIPP	25,000	46,200	50,000
Construction - Waste Isolation Pilot Plant	90,000	105,273	94,365
Total Waste Isolation Pilot Plant	443,424	458,697	464,326
West Valley Demonstration Project			
Safeguards and Security - Defense Environmental Cleanup	5,298	5,984	5,865
Total West Valley Demonstration Project	5,298	5,984	5,865
Y-12 Site Office			
14-D-403 Outfall 200 Mercury Treatment Facility	0	10,000	10,000
17-D-401 On-site Waste Disposal Facility	12,500	35,000	24,500
Construction - Oak Ridge	12,500	45,000	34,500
OR Technology Development and Deployment	3,000	3,000	3,000
Oak Ridge (OR)	15,500	48,000	37,500
Total Y-12 Site Office	15,500	48,000	37,500
Total Funding by Site for TAS_0251 - Defense Environmental Cleanup	6,710,000	7,025,000	7,073,587

DEPARTMENT OF ENERGY

Funding by Site

TAS_0315 - Non-Defense Environmental Cleanup - FY 2024

(Dollars in Thousands)

Request Detail		
Requested Total		
FY 2022	FY 2023	FY 2024

Energy Technology Engineering Center			
Small Sites - NDEC	21,340	26,409	44,135
Total Energy Technology Engineering Center	21,340	26,409	44,135
Hanford Site			
Fast Flux Test Reactor Facility (WA)	3,100	3,200	3,200
Total Hanford Site	3,100	3,200	3,200
Idaho National Laboratory			
Small Sites - NDEC	11,000	13,500	11,500
Total Idaho National Laboratory	11,000	13,500	11,500
Lawrence Berkeley National Laboratory			
Small Sites - NDEC	5,000	15,000	0
Total Lawrence Berkeley National Laboratory	5,000	15,000	0
Moab Site			
Small Sites - NDEC	67,000	67,000	67,000
Total Moab Site	67,000	67,000	67,000
Paducah Gaseous Diffusion Plant			
Gaseous Diffusion Plants	59,863	70,921	67,107
Total Paducah Gaseous Diffusion Plant	59,863	70,921	67,107
Portsmouth Gaseous Diffusion Plant			
Gaseous Diffusion Plants	61,340	60,017	65,876
Total Portsmouth Gaseous Diffusion Plant	61,340	60,017	65,876
Washington Headquarters			
Management and Storage of Elemental Mercury	2,100	2,100	0
Total Washington Headquarters	2,100	2,100	0
West Valley Demonstration Project			
West Valley Demonstration Project - NDEC	88,120	89,882	89,882
Total West Valley Demonstration Project	88,120	89,882	89,882
Undesignated LPI			
Small Sites - NDEC	15,000	10,554	0
Mercury Receipts	0	3,000	3,000
Use of Mercury Receipts	0	-3,000	-3,000
Total Undesignated LPI	15,000	10,554	0
Total Funding by Site for TAS_0315 - Non-Defense Environmental Cleanup	333,863	358,583	348,700

DEPARTMENT OF ENERGY
Funding by Site
 Defense Uranium Enrichment D&D Fund - FY 2024
 (Dollars in Thousands)

Request Detail		
Requested Total		
FY 2022	FY 2023	FY 2024

Undesignated LPI

Defense Uranium Enrichment D&D Program	573,333	586,035	427,000
Total Undesignated LPI	573,333	586,035	427,000
Total Funding by Site for Defense Uranium Enrichment D&D Fund	573,333	586,035	427,000

DEPARTMENT OF ENERGY

Funding by Site

TAS_5231 - Uranium Enrichment Decontamination and Decommissioning Fund - FY 2024

(Dollars in Thousands)

Request Detail		
Requested Total		
FY 2022	FY 2023	FY 2024

East Tennessee Technology Park (K25)

Oak Ridge (D&D Fund)	105,000	92,946	91,000
Pension and Community and Regulatory Support	25,000	25,000	25,000
Total East Tennessee Technology Park (K25)	130,000	117,946	116,000

Paducah Gaseous Diffusion Plant

Nuclear Facility D&D, Paducah	240,000	240,000	217,874
Pension and Community and Regulatory Support	2,739	2,782	2,838
Total Paducah Gaseous Diffusion Plant	242,739	242,782	220,712

Portsmouth Gaseous Diffusion Plant

Nuclear Facility D&D, Portsmouth	392,911	424,354	418,258
15-U-408 On-Site Waste Disposal Facility, Portsmouth	8,900	0	0
20-U-401 On-site Waste Disposal Facility	65,235	56,040	74,552
Construction - Portsmouth	74,135	56,040	74,552
Pension and Community and Regulatory Support	4,060	23,130	3,560
Total Portsmouth Gaseous Diffusion Plant	471,106	503,524	496,370

Washington Headquarters

Title X Uranium Thorium Reimbursement Program	16,155	14,800	24,400
Total Washington Headquarters	16,155	14,800	24,400

Total Funding by Site for TAS_5231 - Uranium Enrichment Decontamination and Decommissioning Fund

860,000	879,052	857,482
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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) Except as provided in subsections (e), (f), and (g), the amounts made available by this title shall be expended as authorized by law for the programs, projects, and activities specified in the "Final Bill" column in the "Department of Energy" table included under the heading "Title III—Department of Energy" in the explanatory statement described in section 4 (in the matter preceding division A of this consolidated Act).

(e) The amounts made available by this title may be reprogrammed for any program, project, or activity, and the Department shall notify the Committees on Appropriations of both Houses of Congress at least 30 days prior to the use of any proposed reprogramming that would cause any program, project, or activity funding level to increase or decrease by more than \$5,000,000 or 10 percent, whichever is less, during the time period covered by this Act.

(f) None of the funds provided in this title shall be available for obligation or expenditure through a reprogramming of funds that—

- (1) creates, initiates, or eliminates a program, project, or activity;
- (2) increases funds or personnel for any program, project, or activity for which funds are denied or restricted by this Act; or
- (3) reduces funds that are directed to be used for a specific program, project, or activity by this Act.

(g)

- (1) The Secretary of Energy may waive any requirement or restriction in this section that applies to the use of funds made available for the Department of Energy if compliance with such requirement or restriction would pose a substantial

risk to human health, the environment, welfare, or national security.

(2) The Secretary of Energy shall notify the Committees on Appropriations of both Houses of Congress of any waiver under paragraph (1) as soon as practicable, but not later than 3 days after the date of the activity to which a requirement or restriction would otherwise have applied. Such notice shall include an explanation of the substantial risk under paragraph (1) that permitted such waiver.

(h) 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 2024 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. No funds shall be transferred directly from "Department of Energy—Power Marketing Administration—Colorado River Basins Power Marketing Fund, Western Area Power Administration" to the general fund of the Treasury in the current fiscal year.

SEC. 307. None of the funds made available in this title may be used to support a grant allocation award, discretionary grant award, or cooperative agreement that exceeds \$100,000,000 in Federal funding unless the project is carried out through internal independent project management procedures.

TITLE V—GENERAL PROVISIONS

SEC. 501. None of the funds appropriated by this Act may be used in any way, directly or indirectly, to influence congressional action on any legislation or appropriation matters pending before Congress, other than to communicate to Members of Congress as described in 18 U.S.C. 1913.

SEC. 502. 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.