21-D-511, Savannah River Plutonium Processing Facility (SRPPF)
Savannah River Site (SRS), Aiken, South Carolina
Project is for Design and Construction

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

Summary:
The Fiscal Year (FY) 2025 Request for the Savannah River Plutonium Processing Facility (SRPPF) project is $1,200,000,000. Appropriations may be used for design, construction, or other project costs (OPC). The most recent Department of Energy (DOE) approved Critical Decisions (CD) for the project are:

- Utilities, Site Prep, and Infrastructure (USPI) Subproject (21-D-511-01) CD-3A, Approve Site Preparation, approved on December 21, 2023, by the Deputy Administrator for Defense Programs.
- Main Processing Building Subproject (21-D-511-02) CD-3C, Approve Long Lead Procurement, Site Preparation, and Early Construction, approved on November 20, 2023, by the Administrator.
- Administrative Building (ADMIN) Subproject (21-D-511-03) CD-2/3, Approve Performance Baseline and Start of Construction/Execution, approved on December 12, 2023, by the Deputy Administrator for Defense Programs.

CD-0, Approve Mission Need for the "Plutonium Modular Approach," was approved on November 25, 2015. The approved mission need established the requirement for a responsive infrastructure to meet plutonium pit production requirements. This data sheet has been updated to reflect the outcome from approved programmatic changes in the project's scope that have occurred since CD-1 approval, which is further described in the Significant Changes section below. The final performance baseline will be established at 90% design completion to support CD-2/3 approval in FY 2026. A Federal Project Director (Level IV) has been assigned to this project and has approved this Construction Project Data Sheet (CPDS).

NNSA completed the Plutonium Pit Production analysis of alternatives (AoA) in October 2017 and the follow-on Plutonium Pit Production Engineering Assessment (EA) in April 2018. Both efforts informed NNSA's selection of a preferred alternative on May 10, 2018, to continue to invest in Los Alamos National Laboratory (LANL) for the capability to produce 30 pits per year (ppy) in 2026, and to repurpose existing facilities at Savannah River Site to produce a capability of 50 ppy in 2030. Based on information developed to support the CD-1 approval, NNSA has determined that achieving the required 50 war reserve ppy production rate at the Savannah River Site in 2030 is not feasible. Establishing the required SRPPF pit production capacity as close as possible to 2030 remains a high-priority and is required for sustaining the effectiveness of the Nation's nuclear deterrent.

The scope, cost and schedule estimates approved at CD-1 include an estimated cost range of $6,900,000,000 to $11,100,000,000 and a CD-4 schedule range of 1st Quarter FY 2032 to 4th Quarter FY 2035. The design has not progressed far enough to update the project cost estimate that was submitted in the FY 2024 CPDS.

Significant Changes:
This CPDS is an update of the FY 2024 CPDS and is not a new start.

The FY 2024 appropriation and FY 2025 Request support preliminary and final design with an overall project CD-2/3 performance measurement baseline approval planned for 3rd Quarter FY 2026 (risk informed); continuation of the execution of the Administrative Building Subproject, a design/build for a construction and maintenance building; and provide support for the start of construction within the 226-F facility associated with the Main Process Building by continuing execution of long lead procurement and site preparation activities, i.e., CD-3Xs, for Dismantlement and Removal (D&R) of equipment and installed commodities in 226-F; preparation of the facility interior; long-lead procurements for gloveboxes/process equipment, bulk materials and balance of plant (BOP) equipment; and early site preparation for the Utilities, Site, and Infrastructure, High Fidelity Training and Operations Center, and Sandfilter and Fanhouse Subprojects.

Subproject descriptions are included in Section 2. The approved tailoring strategy includes the following subprojects:

- Utilities, Site Prep, and Infrastructure (USPI) Subproject (21-D-511-01)
- Main Process Buildings (MPB) Subproject (21-D-511-02)
- Administrative Building (ADMIN) Subproject (21-D-511-03)
- Safeguards and Security (S&S) Subproject (21-D-511-04)
- High Fidelity Training and Operations Center (HFTOC) Subproject (21-D-511-05)
- Sandfilter and Fanhouse (S&F) Subproject (21-D-511-06)

NOTE: Site preparations and long-lead procurements will be accomplished via CD-3X under applicable subprojects to optimize project schedule and help offset the delays in the completion of the designs for several subprojects. Prior to initiation of procurements or early site preparation, design/technical packages and individual point estimate-based performance measurement baselines will be developed, reviewed, and approved by the appropriate NNSA approval authority, aligned with the estimated total project cost (TPC) of each CD-3X to establish the basis for performance and resource management.

In FY 2023, the project established a Tiger Team focused on acceleration of mature design scopes of work that could be proposed as long lead procurement and site preparation packages, i.e., CD-3Xs, as described in the Critical Milestone section with forecasted approval dates. In FY 2025, the project will focus on completing design for the overall project by FY 2026, and the following construction activities will be continued: D&R of equipment and installed commodities in 226-F; preparation of facility interior by making the majority of new penetrations needed for equipment and commodity installation and removal of unneeded concrete structures and fire doors; procurement of long-lead gloveboxes/process and BOP equipment and materials; early preparation and installation for all temporary facilities, utilities (above and below ground) and other general temporary infrastructure necessary to support mobilization and onboarding of construction resources, storage / laydown of construction materials and equipment, shop / fabrication / work areas, etc., to support initiation of SRPPF construction activities; and, final site work including installation of buried process support utilities and a waste transfer line, and demolition and removal of any unneeded Mixed Oxide Fuel Fabrication Facility (MFFF) support buildings (temporary and some permanent), and final roadways and grading.

The project team continued to finalize the preliminary design associated with the single line option (SLO) for process operations and in parallel developed a detailed, more risk-informed design performance baseline (DPB), aligned to Program Requirements Document (PRD) Revision 3. The PRD Revision 3, issued in January 2022, included NNSA requirements changes incorporating additional process utilities in unoccupied white space in the main process building and including additional process gloveboxes and utilities in the High-Fidelity Training and Operations Center. The change to a High-Fidelity Training and Operations Center (HFTOC) resulted in providing similar gloveboxes to those intended for the process building, which would help to improve the overall schedule for Weapons Design Agency War Reserve Authorization after approval of CD-4, Project Completion.

The DPB scope and cost were submitted to NNSA in May 2022, but in June 2022, an additional NNSA requirements change was identified in response to a Weapons Design Agency identified risk associated with process equipment single point failures and resulting throughput impacts. In October 2022, NNSA directed the M&O to award a construction management (CM) subcontract to an Engineering, Procurement and Construction (EPC) firm to complete the SRPPF Project through CD-4. In December 2022, an updated tailoring strategy was presented to and approved by the Chief Executive for Project Management, authorizing a sixth subproject and delegation of Project Management Executive (PME) authority as allowed and defined by DOE O 413.3B. These additional changes to the project resulted in the need for an updated DPB which was submitted by the M&O contractor for NNSA review in April 2023. NNSA Acquisition and Project Management Office (APMO) review of the April 2023 DPB completed in June and NNSA directed the M&O contractor to implement the BCP to utilize for DPB management and performance reporting purposes.

As submitted, the April 2023 DPB BCP confirms the NNSA projection included in the FY2024 CPDS: a risk informed design cost increase of approximately $1 billion, and a risk informed estimate of up to a one year schedule delay for design completion. The potential cost and schedule impact to design at the total project level has primarily been represented in this CPDS as an increase shown in the Design subsection of the MPB subproject Financial Schedule table, with the intent that the FY 2026 CPDS will include more accurate representation of impacts to the design funding needs and expected design costs at the subproject level for FY 2025 and FY 2026. However, given the ongoing review of multiple cost estimates

for the project, the FY 2025 CPDS reflects TBDs beyond the FY 2025-2029 FYNSP planning window. The project team, relevant NNSA offices, and NNSA and DOE leadership need additional time to analyze and integrate these estimates to provide a defensible estimate.

The Critical Milestone History tables have been updated to reflect the risk informed overall project design now being forecasted for 2Q FY2026 and CD-2/3 in 3Q FY 2026. Some of these additional design costs are due to the scope added since CD-1, including items to alleviate single points of failure and include unassigned (white) space for future capabilities. The integration of process and BOP design has proven more difficult than expected, adding costs, and causing schedule delay. Difficulty attracting qualified designers (engineering staffing has been approximately 75% of the planned amount) created the need to offer incentives and is lengthening design time, increasing indirect costs. Additionally, impacts to cost and schedule have also been compounded by M&O contactor continued inability to meet forecast performance targets, which is a trend the construction management subcontractor is expected to address. Considering the projected increase in design costs, the added scope, and the cost increases and schedule delays being experienced by similar projects in the DOE complex, the potential impact on the SRPPF total project cost may result in a TPC range of approximately $18B - $25B, and the total project schedule extension of approximately 1 to 3 years.

NNSA continues to assess the impacts on the TPC and CD-4 date due to market conditions (e.g., tight labor market, supply chain delays, and construction escalation) and internal challenges (e.g., integration with aging infrastructure, site utility limitations, synchronization of multiple site projects and interfacing work fronts). Construction projects across the nation are experiencing continuing impacts and the Nuclear Security Enterprise is especially susceptible to market conditions due to the skills and clearances required of our designers and craft personnel and the small, domestic, specialty suppliers often required. The Uranium Processing Facility (UPF) at the Y-12 National Security Complex represents the best analog for SRPPF. UPF had finished foundation and considerable structural work before COVID, is a nuclear project being constructed outside a PIDAS, includes a main processing building and various support structures, will include extensive commissioning, but not the introduction of nuclear material before completion, and is of similar scale.

To mitigate these impacts, NNSA has divided the project into six subprojects and identified additional long lead procurement / site preparation scopes of work, i.e., CD-3Xs, to allow procurement to occur earlier (gloveboxes and bulk material) to avoid late delivery, and to start additional site preparation scopes of work earlier than possible if waiting for the full project to be designed. These scopes of early work are focused on decreasing work area conflicts on the site and decreasing the number of peak craft needed. In calendar year 2023 further progress was made to authorize early work scope execution: 1) the MPB Subproject CD-3C was approved on November 20, 2023, and 2) the USPI Subproject CD-3A was approved December 21, 2023. Additionally, the ADMIN Subproject combined CD-2/3 was approved on December 12, 2023, at a TPC $92.3M with a CD-4 completion of 3Q FY2027. The approved TPC was above the high end TPC range value of $80M estimated for this Subproject at CD-1 primarily due to a procurement warehouse being added to the scope which will help support other near term long lead procurement actions targeted to begin execution. An additional measure initiated in FY 2024 to help mitigate potential glovebox vendor throughput capacity limitations that would present a challenge to meeting SRPPF glovebox needs is the Glovebox Manufacturing Expansion Initiative (GMEI). It is expected that $50 million of SRPPF funds will be used for investments in facility expansion and equipment modernization of glovebox vendor facilities to increase throughput capacity of Nuclear Quality Assurance (NQA-1) or International Organization for Standardization (ISO) 9001 nuclear gloveboxes needed for the project.

A Construction Management (CM) subcontract was awarded by the M&O to Fluor Federal Services Inc. (FFS) on September 28, 2023. The CM will be responsible for project delivery and bringing specialized construction and procurement expertise to the project.

A revised CD-1 estimate and schedule through CD-4 was developed based on current design maturity (~45% – 50%) and was submitted to NNSA for review at the end of February 2024. However, based on changes and conditions experienced to date for this and other NNSA projects, the FY 2025 FYNSP represents an increased funding request over the next five years with the expectation that the project total cost will be higher than the approved CD-1 high range TPC value of $11.1B. The Critical Milestone History and Project Cost History tables will be updated after DOE O 413.3B requirements associated with re-affirmation of the project's CD-1 cost and schedule range have been fulfilled and officially approved by the Project Management Executive. Until the approval of a revised CD-1 estimate range and schedule range is attained, the Critical

Milestone and Project Cost sections of this data sheet, including the long lead procurement and site preparation approvals, are placeholders. Updates with further refinement will be reflected in the FY 2026 submission of the CPDS.

The first of three 90% process design packages were submitted by the design subcontractor in January 2023 to the M&O DA for review. The final two 90% process design packages were submitted to the M&O DA in May 2023 and September 2023, respectively. An issue was identified during the 60% process design review associated with building airflow / exhaust. Further modeling and evaluation will be necessary to resolve this issue, which is expected to delay completion of 60% design. Additionally, project requirement changes necessary to address worker protection recommendations are being evaluated by the M&O and CM contractors and are expected to impact 60% and 90% design completion forecasts. Opportunities to mitigate further impacts to current total project TPC range forecast and CD-4 range forecasts described earlier in this section of the CPDS are also being evaluated. An initial project 60% design submittal, not including the resolved building airflow / exhaust and worker protection issues, is expected to be submitted from the design subcontractor in April 2024 to the M&O DA to allow the start of review. The finalized total project 60% design documents are anticipated to be submitted in July 2024 and included in the design review. Once the total project 60% design has been submitted, the pre-60% design maturity bottom-up estimate (BUE) submitted in February 2024 would be updated to reflect 60% design-based cost and schedule estimates through CD-4, anticipated to be submitted for NNSA review two – three months after completion of the 60% design review.

Critical Milestone History

Overall Project (21-D-511-01 through 21-D-511-06)

Fiscal Quarter or Date

Fiscal Year	CD-0	Conceptual Design Complete	CD-1	CD-2	Final Design Complete	CD-3	CD-4
FY 2021	11/25/2015	4Q FY 2020	2Q FY 2021	TBD	TBD	TBD	4Q FY 2026 - 4Q FY 2031[a]
FY 2022	11/25/2015	3Q FY 2021	3Q FY 2021	TBD	TBD	TBD	1Q FY 2032 - 4Q FY 2035
FY 2023	11/25/2015	06/25/2021	06/25/2021	1Q FY 2024	4Q FY 2023	1Q FY 2024	1Q FY 2032 - 4Q FY 2035
FY 2024	11/25/2015	06/25/2021	06/25/2021	3Q FY 2025	2Q FY 2025	3Q FY 2025	1Q FY 2032 - 4Q FY 2035[b]
FY 2025	11/25/2015	06/25/2021	06/25/2021	3Q FY 2026	2Q FY 2026	3Q FY 2026	1Q FY 2032 - 4Q FY 2035[b]

Utilities, Site Prep, and Infrastructure (USPI) Subproject (21-D-511-01)

Fiscal Quarter or Date

Fiscal Year	CD-0	Conceptual Design Complete	CD-1	CD-2	Final Design Complete	CD-3	CD-4
FY 2022	11/25/2015	3Q FY 2021	3Q FY 2021	TBD	TBD	TBD	TBD
FY 2023	11/25/2015	06/25/2021	06/25/2021	2Q FY 2023	1Q FY 2023	2Q FY 2023	2Q FY 2030
FY 2024	11/25/2015	06/25/2021	06/25/2021	3Q FY 2025	2Q FY 2025	3Q FY 2025	2Q FY 2030
FY 2025	11/25/2015	06/25/2021	06/25/2021	4Q FY 2025	3Q FY 2025	4Q FY 2025	2Q FY 2030

Fiscal Quarter or Date

Fiscal Year	USPI CD-3A	USPI CD-3B
FY 2022	3Q FY 2021	N/A
FY 2023	4Q FY 2022	N/A
FY 2024	4Q FY 2023	TBD
FY 2025	12/21/2023	2Q FY 2025

[a] CD-4 range was based on the *Plutonium Pit Production Engineering Assessment*

[b] CD-4 range reflects the range approved at CD-1.

Main Process Buildings (MPB) Subproject (21-D-511-02)

Fiscal Quarter or Date

Fiscal Year	CD-0	Conceptual Design Complete	CD-1	CD-2	Final Design Complete	CD-3	CD-4
FY 2022	11/25/2015	3Q FY 2021	3Q FY 2021	TBD	TBD	TBD	TBD
FY 2023	11/25/2015	06/25/2021	6/25/2021	1Q FY 2024	4Q FY 2023	1Q FY 2024	1Q FY 2032 - 4Q FY 2035[a]
FY 2024	11/25/2015	06/25/2021	6/25/2021	3Q FY 2025	2Q FY 2025	3Q FY 2025	1Q FY 2032 - 4Q FY 2035[a]
FY 2025	11/25/2015	06/25/2021	6/25/2021	3Q FY 2026	2Q FY 2026	3Q FY 2026	1Q FY 2032 - 4Q FY 2035[a]

Fiscal Quarter or Date

Fiscal Year	MPB CD-3A	MPB CD-3C	MPB CD-3E	MPB CD-3F	MPB CD-3G	MPB CD-3H	MPB CD-3I
FY 2022	3Q FY 2021	N/A	N/A	N/A	N/A	N/A	N/A
FY 2023	4Q FY 2022	N/A	N/A	N/A	N/A	N/A	N/A
FY 2024	08/30/2022	4Q FY 2023	4Q FY 2023	1Q FY 2025	1Q FY 2025	1Q FY 2025	TBD
FY 2025	08/30/2022	11/20/2023	2Q FY 2024	1Q FY 2025	3Q FY 2025	1Q FY 2025	TBD

Administrative Building (ADMIN) Subproject (21-D-511-03)

Fiscal Quarter or Date

Fiscal Year	CD-0	Conceptual Design Complete	CD-1	CD-2	Final Design Complete	CD-3	CD-4
FY 2022	11/25/2015	3Q FY 2021	3Q FY 2021	TBD	TBD	TBD	TBD
FY 2023	11/25/2015	06/25/2021	6/25/2021	2Q FY 2023	1Q FY 2023	2Q FY 2023	4Q FY 2030
FY 2024	11/25/2015	06/25/2021	6/25/2021	1Q FY 2024	1Q FY 2024	1Q FY 2024	2Q FY 2026
FY 2025	11/25/2015	06/25/2021	6/25/2021	12/12/2023	12/12/2023	12/12/2023	3Q FY 2027

Safeguards and Security (S&S) Subproject (21-D-511-04)

Fiscal Quarter or Date

Fiscal Year	CD-0	Conceptual Design Complete	CD-1	CD-2	Final Design Complete	CD-3	CD-4
FY 2022	11/25/2015	3Q FY 2021	3Q FY 2021	TBD	TBD	TBD	TBD
FY 2023	11/25/2015	06/25/2021	6/25/2021	1Q FY 2024	3Q FY 2023	1Q FY 2024	3Q FY 2029
FY 2024	11/25/2015	06/25/2021	6/25/2021	3Q FY 2025	3Q FY 2025	3Q FY 2025	3Q FY 2029
FY 2025	11/25/2015	06/25/2021	6/25/2021	1Q FY 2026	4Q FY 2025	1Q FY 2026	3Q FY 2029

High Fidelity Training and Operations Center (HFTOC) Subproject (21-D-511-05)

Fiscal Quarter or Date

Fiscal Year	CD-0	Conceptual Design Complete	CD-1	CD-2	Final Design Complete	CD-3	CD-4
FY 2022	11/15/2015	3Q FY 2021	3Q FY 2021	TBD	TBD	TBD	TBD
FY 2023	11/25/2015	06/25/2021	6/25/2021	2Q FY 2023	1Q FY 2023	2Q FY 2023	4Q FY 2028
FY 2024	11/25/2015	06/25/2021	6/25/2021	3Q FY 2025	3Q FY 2025	3Q FY 2025	4Q FY 2028
FY 2025	11/25/2015	06/25/2021	6/25/2021	4Q FY 2025	3Q FY 2025	4Q FY 2025	4Q FY 2028

[a] CD-4 range reflects the range approved at CD-1.

Fiscal Quarter or Date

Fiscal Year	HFTOC CD-3A	HFTOC CD-3B
FY 2024	1Q FY 2024	1Q FY 2025
FY 2025	1Q FY 2025	1Q FY 2025

Sandfilter and Fanhouse (S&F) Subproject (21-D-511-06)

Fiscal Quarter or Date

Fiscal Year	CD-0	Conceptual Design Complete	CD-1	CD-2	Final Design Complete	CD-3	CD-4
FY 2024	11/25/2015	06/25/2021	6/25/2021	3Q FY 2025	3Q FY 2025	3Q FY 2025	1Q FY 2032 – 4Q FY 2035[a]
FY 2025	11/25/2015	06/25/2021	6/25/2021	3Q FY 2026	2Q FY 2026	3Q FY 2026	1Q FY 2032 – 4Q FY 2035[a]

Fiscal Quarter or Date

Fiscal Year	S&F CD-3A	S&F CD-3B
FY 2024	4Q FY 2023	1Q FY 2025
FY 2025	2Q FY 2024	1Q FY 2025

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

USPI Subproject (21-D-511-01) Long Lead Procurement and Site Preparation CD-3A – Site preparation and installation of all temporary facilities, utilities (above and below ground), other general temporary infrastructure necessary to support mobilization and onboarding of construction resources, i.e., storage / laydown of construction materials and equipment, shop / fabrication / work areas, etc., to support initiation of SRPPF construction activities. Final site work, including installation of buried process support utilities and a waste transfer line, demolition, and removal of any unneeded MFFF support buildings (temporary and some permanent), and final roadways/grading.

USPI Subproject (21-D-511-01) Site Preparation CD-3B – If needed, additional site preparation activities, including underground utilities to support USPI.

MPB Subproject (21-D-511-02) Long Lead Procurement and Site Preparation (Dismantle and Removal (D&R)) CD-3A – Dismantle and removal of equipment, partially installed commodities, and coatings from Building 226-F. Site preparation activities including temporary ventilation, temporary electrical, temporary communications, and site services contract support activities.

MPB Subproject (21-D-511-02) Site Preparation CD-3C – Site preparation activities, including structural demolition and removal of wall sections to facilitate installation of gloveboxes and process equipment to support MPB.

MPB Subproject (21-D-511-02) Long Lead Procurement CD-3E – Initial long lead procurement of gloveboxes and process equipment to support MPB.

[a] CD-4 range reflects the range approved at CD-1.

MPB Subproject (21-D-511-02) Long Lead Procurement CD-3F – Long lead procurement of bulk materials to support MPB.

MPB Subproject (21-D-511-02) Long Lead Procurement CD-3G – Long lead procurement of BOP equipment to support MPB.

MPB Subproject (21-D-511-02) Long Lead Procurement CD-3H – Second package of long lead procurement of gloveboxes and process equipment to support MPB.

MPB Subproject (21-D-511-02) Long Lead Procurement CD-3I – If needed, third package of long lead procurement of gloveboxes and process equipment to support MPB.

HFTOC Subproject (21-D-511-05) Site Preparation CD-3A – Site preparation activities for the HFTOC including underground utilities work and building modifications to support receipt and installation of future equipment.

HFTOC Subproject (21-D-511-05) Long Lead Procurement CD-3B – Long lead procurement of gloveboxes and equipment to support the HFTOC.

S&F Subproject (21-D-511-06) Site Preparation CD-3A – Site preparation activities for the sandfilter and fanhouse facilities that includes stormwater drainage relocation, sheet piling for sand filter excavation, sand filter and fan house excavation, and installation of the sand filter mudmat.

S&F Subproject (21-D-511-06) Site Preparation CD-3B – If needed, additional site preparation activities, including the base mat installation for the sandfilter.

Project Cost History

Overall Project (21-D-511-01 through 21-D-511-06)

($K)

Fiscal Year	TEC, Design	TEC, Construction	TEC, Other	TEC, Total	OPC	OPC, Total	TPC
FY 2021	241,896	0	N/A	241,896	110,000	110,000	4,590,000[a]
FY 2022	TBD	TBD	TBD	TBD	TBD	TBD	11,100,000
FY 2023	1,550,896	6,779,766	589,104	8,919,766	2,180,234	2,180,234	11,100,000
FY 2024	1,686,388	6,629,274	604,104	8,919,766	2,180,234	2,180,234	11,100,000[b]
FY 2025	2,386,388	TBD	TBD	TBD	TBD	TBD	TBD

USPI Subproject (21-D-511-01)

($K)

Fiscal Year	TEC, Design	TEC, Construction	TEC, Other	TEC, Total	OPC	OPC, Total	TPC
FY 2022	TBD	TBD	TBD	TBD	TBD	TBD	TBD
FY 2023	93,500	406,500	60,000	560,000	60,000	60,000	620,000
FY 2024	93,500	388,500	50,000	532,000	54,000	54,000	586,000
FY 2025	93,500	388,500	50,000	532,000	54,000	54,000	586,000

[a] TEC and OPC amounts reflect estimated costs for FY 2021 only, the TPC amount reflects the high end of the cost range developed during the *Plutonium Pit Production Engineering Assessment* (EA) in 2018.

[b] TPC amount reflects the high-end cost range developed for the CD-1 package.

MPB Subproject (21-D-511-02)

($K)

Fiscal Year	TEC, Design	TEC, Construction	TEC, Other	TEC, Total	OPC	OPC, Total	TPC
FY 2022	TBD	TBD	TBD	TBD	TBD	TBD	TBD
FY 2023	1,318,896	5,704,766	441,104	7,464,766	1,935,234	1,935,234	9,400,000
FY 2024	1,454,388	5,297,274	441,104	7,192,766	1,866,234	1,866,234	9,059,000
FY 2025	2,154,388	TBD	TBD	TBD	TBD	TBD	TBD

ADMIN Subproject (21-D-511-03)

($K)

Fiscal Year	TEC, Design	TEC, Construction	TEC, Other	TEC, Total	OPC	OPC, Total	TPC
FY 2022	TBD	TBD	TBD	TBD	TBD	TBD	TBD
FY 2023	5,500	46,500	6,000	58,000	22,000	22,000	80,000
FY 2024	5,500	46,500	6,000	58,000	22,000	22,000	80,000
FY 2025	5,500	73,700	12,000	91,200	2,000	2,000	93,200

S&S Subproject (21-D-511-04)

($K)

Fiscal Year	TEC, Design	TEC, Construction	TEC, Other	TEC, Total	OPC	OPC, Total	TPC
FY 2022	TBD	TBD	TBD	TBD	TBD	TBD	TBD
FY 2023	100,000	360,000	60,000	520,000	110,000	110,000	630,000
FY 2024	100,000	360,000	60,000	520,000	110,000	110,000	630,000
FY 2025	85,000	375,000	60,000	520,000	110,000	110,000	630,000

HFTOC Subproject (21-D-511-05)

($K)

Fiscal Year	TEC, Design	TEC, Construction	TEC, Other	TEC, Total	OPC	OPC, Total	TPC
FY 2022	TBD	TBD	TBD	TBD	TBD	TBD	TBD
FY 2023	33,000	262,000	22,000	317,000	53,000	53,000	370,000
FY 2024	33,000	262,000	22,000	317,000	53,000	53,000	370,000
FY 2025	48,000	247,000	22,000	317,000	53,000	53,000	370,000

S&F Subproject (21-D-511-06)

($K)

Fiscal Year	TEC, Design	TEC, Construction	TEC, Other	TEC, Total	OPC	OPC, Total	TPC
FY 2024	NA[a]	275,000	25,000	300,000	75,000	75,000	375,000
FY 2025	NA[a]	TBD	TBD	TBD	TBD	TBD	TBD

2. Project Scope and Justification

Scope

The 21-D-511 project scope includes repurposing Building 226-F, including removal of previously installed equipment and support systems as necessary to accommodate the new pit production mission. Scope includes turnover of all necessary design and quality documentation from the previous mission, any required modifications to Building 226-F and the design,

[a] To create the S&F Subproject, scope is being transferred from the USPI and MPB subprojects. Due to maturity of overall project design development at the point in time that the S&F Subproject was authorized, it has been determined to complete design as planned and aligned to the original five subprojects. Attempting to break out remaining design scope specific to the S&F Subproject would not be clean and would unnecessarily delay design completion.

construction and installation of processing equipment, process support systems and buildings, utilities and security features for a capability to produce 50 ppy. The 21-D-511 project will also include transfer, stewardship, and incorporation of select MFFF project government property into the SRPPF project, conversion of the Building 226-2F warehouse building into a high-fidelity training facility, and design and construction of support facilities. Given the special nuclear material (SNM) expected during operations in the SRPPF, Building 226-F will be a Hazard Category 2, Security Category I facility.

The SRPPF approved tailoring strategy includes the following subprojects.

USPI Subproject (21-D-511-01): This subproject will include: early preparation and installation for all temporary facilities, utilities (above and below ground) and other general temporary infrastructure necessary to support mobilization and onboarding of construction resources, storage / laydown of construction materials and equipment, shop / fabrication / work areas, etc., to support initiation of SRPPF construction activities; and, final site work including installation of buried process support utilities and a waste transfer line, and demolition and removal of any unneeded MFFF temporary support buildings, and final roadways and grading.

MPB Subproject (21-D-511-02): The Main Process Building includes design, procurement, 226-F construction, including CD-3A removal of equipment, partially installed commodities, and coatings from 226-F, testing and start-up of structures, systems and components necessary to produce a minimum of 50 ppy, and upgrade a facility to house first shift of Protection Force safeguards and security staff for training and construction interface purposes during overall project construction.

ADMIN Subproject (21-D-511-03): The Administration Building Subproject will include design and construction of an approximately 50,000 square foot new Maintenance and Construction support building and an approximately 22,000 square foot procurement warehouse. This primary mission need is to provide office space for operational management and support personnel and procurement warehousing capacity. The Maintenance and Construction support building and procurement warehouse will be constructed early in the project schedule to allow for offices and management support during construction and start-up. The subproject will be integrated with the completion of the final phase of the Utilities, Site, and Infrastructure Subproject.

S&S Subproject (21-D-511-04): This subproject will include design and construction of entry control facilities, security fencing, reconfigure and remodel of Building 706-4F building for protective forces and other security infrastructure.

HFTOC Subproject (21-D-511-05): The High-Fidelity Training and Operations Center Subproject includes conversion of the building 226-2F warehouse building into a high-fidelity training facility, both classroom and hands-on equipment training. This high-fidelity training facility will contain nearly identical process gloveboxes and equipment lines for key processes, including balance of plant systems, to what will be installed in the main process building. This facility will provide the ideal location to perform cold development of future pit builds and train the future pit production workforce at SRS.

S&F Subproject (21-D-511-06): The Sandfilter and Fanhouse Subproject includes site preparation activities and the installation of the sandfilter and fanhouse facilities, with supporting utilities.

Justification

NNSA's ability to produce pits in the required quantities established by the Nuclear Weapons Council (NWC) is an essential component of the nuclear deterrent. An Independent AoA was conducted after CD-0, in accordance with the requirements of Office of Management and Budget (OMB) Circular A-11. Multiple alternatives were analyzed and the AoA identified two preferred alternatives with different construction approaches at two separate locations:

- Refurbishment and repurposing of facilities at the Savannah River Site; and,
- Additional footprint to accommodate pit production requirements at LANL.

The NNSA Office of Cost Estimating and Program Evaluation conducted a review of the AoA in October 2017 and recommended that further refinement of the preferred alternatives be completed before selecting an alternative that meets requirements. NNSA contracted with an independent architecture and engineering (A&E) firm to complete the follow-on Engineering Assessment to evaluate two preferred alternatives and two additional alternatives to better inform the

selection of an alternative and support conceptual design which was completed on April 20, 2018, along with a workforce analysis.

The NNSA Administrator selected a recommended alternative on May 10, 2018, to repurpose Building 226-F, a partially constructed facility at the SRS, for pit production to meet Department of Defense plutonium pit requirements by 2030. The selected alternative will continue to invest in LANL for the capability to produce 30 pits per year (ppy) in 2026, and to repurpose existing facilities at SRS to produce a capability of 80 ppy (both sites) during 2030. The Chairwoman of the Nuclear Weapons Council provided written certification to Congress regarding the NNSA's recommended alternative.

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.* Funds appropriated under this project may be used for contracted support services to the Federal Project Director and to conduct independent reviews and oversight of design and construction for SRPPF.

Key Performance Parameters (KPPs)

KPPs will be finalized in support of CD-2 documentation, the preliminary KPPs below will be revised in support of CD-2.

Performance Measure[a]
226-F Dismantle and Removal (D&R): Complete dismantlement and removal of MFFF equipment and utility commodities in 226-F.
50 ppy Process and Equipment: Complete successful Operational Readiness Review including completion of integrated Cold System Testing and turnover of all 50 ppy facility, systems and components identified in the SRPPF Program Requirements Document (PRD) to Weapons Production for initiation of hot operations Process Prove-in activities.
Physical Safeguards and Security (S&S) Infrastructure: Complete successful S&S integrated systems and components testing and reconfiguration of 706-4F including project turnover in support of the 50 PPY SRPPF Process and Equipment Operational Readiness Review.
High Fidelity Training and Operations Center (HFTOC): High Fidelity Training and Operations Center will receive beneficial occupancy approval to allow utilization by the Project for Technology maturation and operational preparations with ultimate turnover to Plutonium Operations
SRPPF Infrastructure: Receive beneficial occupancy to support early project utilization and ultimate operations in accordance with the PRD.

3. Project Cost and Schedule

Financial Schedule

SRPPF funding will be appropriated at the Overall Project level (21-D-511) and be allocated to the subprojects shown in the tables below. NOTE: Tables reflect funding in outyears beyond CD-4 completion anticipated to be needed for project financial closeout.

[a] These Preliminary Key Performance Parameters were developed as part of the CD-1 package.

Overall Project (21-D-511-01 through 21-D-511-06)

($K)

	Budget Authority (Appropriations)	Obligations	Costs
Total Estimated Cost (TEC)			
Design			
FY 2021	241,896	241,896	29,870
FY 2022	359,000	359,000	316,421
FY 2023	470,000	470,000	467,442
FY 2024	495,000	495,000	623,202
FY 2025	590,492	590,492	549,453
FY 2026	230,000	230,000	400,000
Total Design	**2,386,388**	**2,386,388**	**2,386,388**
Construction			
FY 2022	100,000	100,000	0
FY 2023	700,000	700,000	83,289
FY 2024	342,985	342,985	384,670
FY 2025	567,508	567,508	678,467
FY 2026	1,172,750	1,172,750	1,003,063
FY 2027	1,545,000	1,545,000	1,519,386
FY 2028	1,307,875	1,307,875	1,604,000
FY 2029	1,386,979	1,386,979	1,522,375
FY 2030	TBD	TBD	TBD
FY 2031	TBD	TBD	TBD
FY 2032	TBD	TBD	TBD
FY 2033	TBD	TBD	TBD
FY 2034	TBD	TBD	TBD
FY 2035	TBD	TBD	TBD
Total Construction	**TBD**	**TBD**	**TBD**
TEC			
FY 2021	241,896	241,896	29,870
FY 2022	459,000	459,000	316,421
FY 2023	1,170,000	1,170,000	550,731
FY 2024	837,985	837,985	1,007,872
FY 2025	1,158,000	1,158,000	1,227,920
FY 2026	1,402,750	1,402,750	1,403,063
FY 2027	1,545,000	1,545,000	1,519,386
FY 2028	1,307,875	1,307,875	1,604,000
FY 2029	1,386,979	1,386,979	1,522,375
FY 2030	TBD	TBD	TBD
FY 2031	TBD	TBD	TBD
FY 2032	TBD	TBD	TBD
FY 2033	TBD	TBD	TBD
FY 2034	TBD	TBD	TBD
FY 2035	TBD	TBD	TBD
Total TEC	**TBD**	**TBD**	**TBD**

($K)

	Budget Authority (Appropriations)	Obligations	Costs
Other Project Costs (OPC)			
FY 2019	91,313	91,313	39,328
FY 2020	219,900	219,900	143,744
FY 2021	110,000	110,000	184,824
FY 2022	16,000	16,000	8,302
FY 2023	30,000	30,000	500
FY 2024	20,250	20,250	15,050
FY 2025	42,000	42,000	29,300
FY 2026	77,250	77,250	57,350
FY 2027	215,000	215,000	75,450
FY 2028	622,125	622,125	200,200
FY 2029	782,021	782,021	525,249
FY 2030	TBD	TBD	TBD
FY 2031	TBD	TBD	TBD
FY 2032	TBD	TBD	TBD
FY 2033	TBD	TBD	TBD
FY 2034	TBD	TBD	TBD
FY 2035	TBD	TBD	TBD
Total, OPC	**TBD**	**TBD**	**TBD**
Total Project Costs (TPC)			
FY 2019	91,313	91,313	39,328
FY 2020	219,900	219,900	143,744
FY 2021	351,896	351,896	214,694
FY 2022	475,000	475,000	324,723
FY 2023	1,200,000	1,200,000	551,231
FY 2024[a]	858,235	858,235	1,022,922
FY 2025	1,200,000	1,200,000	1,257,220
FY 2026	1,480,000	1,480,000	1,460,413
FY 2027	1,760,000	1,760,000	1,594,836
FY 2028	1,930,000	1,930,000	1,804,200
FY 2029	2,169,000	2,169,000	2,047,624
FY 2030	TBD	TBD	TBD
FY 2031	TBD	TBD	TBD
FY 2032	TBD	TBD	TBD
FY 2033	TBD	TBD	TBD
FY 2034	TBD	TBD	TBD
FY 2035	TBD	TBD	TBD
Total TPC	**TBD**	**TBD**	**TBD**

[a] FY 2024 Budget Authority assumptions are based on the FY 2024 President's Budget Request.

USPI Subproject (21-D-511-01)

($K)

USPI	Budget Authority (Appropriations)	Obligations	Costs
Total Estimated Cost (TEC)			
Design			
FY 2021	5,000	5,000	741
FY 2022	87,500	87,500	37,259
FY 2023	1,000	1,000	7,857
FY 2024	0	0	42,643
FY 2025	0	0	5,000
FY 2026	0	0	0
Total Design	**93,500**	**93,500**	**93,500**
Construction			
FY 2022	20,000	20,000	0
FY 2023	58,000	58,000	0
FY 2024	66,000	66,000	72,000
FY 2025	80,000	80,000	76,000
FY 2026	80,000	80,000	71,500
FY 2027	80,000	80,000	86,000
FY 2028	50,000	50,000	82,000
FY 2029	4,500	4,500	29,000
FY 2030	0	0	10,500
FY 2031	0	0	8,000
FY 2032	0	0	3,500
FY 2033	0	0	0
FY 2034	0	0	0
FY 2035	0	0	0
Total Construction	**438,500**	**438,500**	**438,500**
TEC			
FY 2021	5,000	5,000	741
FY 2022	107,500	107,500	37,259
FY 2023	59,000	59,000	7,857
FY 2024	66,000	66,000	114,643
FY 2025	80,000	80,000	81,000
FY 2026	80,000	80,000	71,500
FY 2027	80,000	80,000	86,000
FY 2028	50,000	50,000	82,000
FY 2029	4,500	4,500	29,000
FY 2030	0	0	10,500
FY 2031	0	0	8,000
FY 2032	0	0	3,500
FY 2033	0	0	0
FY 2034	0	0	0
FY 2035	0	0	0
Total TEC	**532,000**	**532,000**	**532,000**

($K)

	Budget Authority (Appropriations)	Obligations	Costs
Other Project Costs (OPC)			
FY 2019	0	0	0
FY 2020	0	0	0
FY 2021	0	0	0
FY 2022	0	0	0
FY 2023	400	400	0
FY 2024	9,800	9,800	7,900
FY 2025	2,000	2,000	600
FY 2026	3,000	3,000	450
FY 2027	4,000	4,000	200
FY 2028	5,000	5,000	200
FY 2029	29,800	29,800	18,500
FY 2030	0	0	20,000
FY 2031	0	0	5,000
FY 2032	0	0	1,150
FY 2033	0	0	0
FY 2034	0	0	0
FY 2035	0	0	0
Total, OPC	**54,000**	**54,000**	**54,000**
Total Project Costs (TPC)			
FY 2019	0	0	0
FY 2020	0	0	0
FY 2021	5,000	5,000	741
FY 2022	107,500	107,500	37,259
FY 2023	59,400	59,400	7,857
FY 2024	75,800	75,800	122,543
FY 2025	82,000	82,000	81,600
FY 2026	83,000	83,000	71,950
FY 2027	84,000	84,000	86,200
FY 2028	55,000	55,000	82,200
FY 2029	34,300	34,300	47,500
FY 2030	0	0	30,500
FY 2031	0	0	13,000
FY 2032	0	0	4,650
FY 2033	0	0	0
FY 2034	0	0	0
FY 2035	0	0	0
Total TPC	**586,000**	**586,000**	**586,000**

MPB (MPB) Subproject (21-D-511-02)

($K)

MPB	Budget Authority (Appropriations)	Obligations	Costs
Total Estimated Cost (TEC)			
Design			
FY 2021	234,396	234,396	28,832
FY 2022	224,000	224,000	251,959
FY 2023	417,500	417,500	426,131
FY 2024	463,000	463,000	521,638
FY 2025	585,492	585,492	525,828
FY 2026	230,000	230,000	400,000
Total Design	**2,154,388**	**2,154,388**	**2,154,388**
Construction			
FY 2022	80,000	80,000	0
FY 2023	581,375	581,375	83,289
FY 2024	178,235	178,235	250,000
FY 2025	309,508	309,508	467,000
FY 2026	831,800	831,800	729,000
FY 2027	1,127,000	1,127,000	1,193,386
FY 2028	1,114,500	1,114,500	1,298,000
FY 2029	1,372,479	1,372,479	1,333,375
FY 2030	TBD	TBD	TBD
FY 2031	TBD	TBD	TBD
FY 2032	TBD	TBD	TBD
FY 2033	TBD	TBD	TBD
FY 2034	TBD	TBD	TBD
FY 2035	TBD	TBD	TBD
Total Construction	**TBD**	**TBD**	**TBD**
TEC			
FY 2021	234,396	234,396	28,832
FY 2022	304,000	304,000	251,959
FY 2023	998,875	998,875	509,420
FY 2024	641,235	641,235	771,638
FY 2025	895,000	895,000	992,828
FY 2026	1,061,800	1,061,800	1,129,000
FY 2027	1,127,000	1,127,000	1,193,386
FY 2028	1,114,500	1,114,500	1,298,000
FY 2029	1,372,479	1,372,479	1,333,375
FY 2030	TBD	TBD	TBD
FY 2031	TBD	TBD	TBD
FY 2032	TBD	TBD	TBD
FY 2033	TBD	TBD	TBD
FY 2034	TBD	TBD	TBD
FY 2035	TBD	TBD	TBD
Total TEC	**TBD**	**TBD**	**TBD**

($K)

	Budget Authority (Appropriations)	Obligations	Costs
Other Project Costs (OPC)			
FY 2019	91,313	91,313	39,328
FY 2020	219,900	219,900	143,744
FY 2021	110,000	110,000	184,824
FY 2022	16,000	16,000	8,302
FY 2023	27,100	27,100	0
FY 2024	6,200	6,200	5,000
FY 2025	22,000	22,000	18,000
FY 2026	50,000	50,000	35,000
FY 2027	176,000	176,000	45,000
FY 2028	529,625	529,625	140,000
FY 2029	683,721	683,721	453,749
FY 2030	TBD	TBD	TBD
FY 2031	TBD	TBD	TBD
FY 2032	TBD	TBD	TBD
FY 2033	TBD	TBD	TBD
FY 2034	TBD	TBD	TBD
FY 2035	TBD	TBD	TBD
Total, OPC	**TBD**	**TBD**	**TBD**
Total Project Costs (TPC)			
FY 2019	91,313	91,313	39,328
FY 2020	219,900	219,900	143,744
FY 2021	344,396	344,396	213,656
FY 2022	320,000	320,000	260,261
FY 2023	1,025,975	1,025,975	509,420
FY 2024	647,435	647,435	776,638
FY 2025	917,000	917,000	1,010,828
FY 2026	1,111,800	1,111,800	1,164,000
FY 2027	1,303,000	1,303,000	1,238,386
FY 2028	1,644,125	1,644,125	1,438,000
FY 2029	2,056,200	2,056,200	1,787,124
FY 2030	TBD	TBD	TBD
FY 2031	TBD	TBD	TBD
FY 2032	TBD	TBD	TBD
FY 2033	TBD	TBD	TBD
FY 2034	TBD	TBD	TBD
FY 2035	TBD	TBD	TBD
Total TPC	**TBD**	**TBD**	**TBD**

ADMIN Subproject (21-D-511-03)

($K)

ADMIN	Budget Authority (Appropriations)	Obligations	Costs
Total Estimated Cost (TEC)			
Design			
FY 2021	500	500	49
FY 2022	2,500	2,500	2,451
FY 2023	2,500	2,500	1,579
FY 2024	0	0	1,421
FY 2025	0	0	0
FY 2026	0	0	0
Total Design	**5,500**	**5,500**	**5,500**
Construction			
FY 2022	0	0	0
FY 2023	0	0	0
FY 2024	33,750	33,750	17,670
FY 2025	41,000	41,000	50,467
FY 2026	10,950	10,950	12,563
FY 2027	0	0	5,000
FY 2028	0	0	0
FY 2029	0	0	0
FY 2030	0	0	0
FY 2031	0	0	0
FY 2032	0	0	0
FY 2033	0	0	0
FY 2034	0	0	0
FY 2035	0	0	0
Total Construction	**85,700**	**85,700**	**85,700**
TEC			
FY 2021	500	500	49
FY 2022	2,500	2,500	2,451
FY 2023	2,500	2,500	1,579
FY 2024	33,750	33,750	19,091
FY 2025	41,000	41,000	50,467
FY 2026	10,950	10,950	12,563
FY 2027	0	0	5,000
FY 2028	0	0	0
FY 2029	0	0	0
FY 2030	0	0	0
FY 2031	0	0	0
FY 2032	0	0	0
FY 2033	0	0	0
FY 2034	0	0	0
FY 2035	0	0	0
Total TEC	**91,200**	**91,200**	**91,200**

($K)

	Budget Authority (Appropriations)	Obligations	Costs
Other Project Costs (OPC)			
FY 2019	0	0	0
FY 2020	0	0	0
FY 2021	0	0	0
FY 2022	0	0	0
FY 2023	500	500	0
FY 2024	250	250	150
FY 2025	1,000	1,000	700
FY 2026	250	250	900
FY 2027	0	0	250
FY 2028	0	0	0
FY 2029	0	0	0
FY 2030	0	0	0
FY 2031	0	0	0
FY 2032	0	0	0
FY 2033	0	0	0
FY 2034	0	0	0
FY 2035	0	0	0
Total, OPC	**2,000**	**2,000**	**2,000**
Total Project Costs (TPC)			
FY 2019	0	0	0
FY 2020	0	0	0
FY 2021	500	500	49
FY 2022	2,500	2,500	2,451
FY 2023	3,000	3,000	1,579
FY 2024	34,000	34,000	19,241
FY 2025	42,000	42,000	51,167
FY 2026	11,200	11,200	13,463
FY 2027	0	0	5,250
FY 2028	0	0	0
FY 2029	0	0	0
FY 2030	0	0	0
FY 2031	0	0	0
FY 2032	0	0	0
FY 2033	0	0	0
FY 2034	0	0	0
FY 2035	0	0	0
Total TPC	**93,200**	**93,200**	**93,200**

S&S Subproject (21-D-511-04)

($K)

S&S	Budget Authority (Appropriations)	Obligations	Costs
Total Estimated Cost (TEC)			
Design			
FY 2021	1,000	1,000	124
FY 2022	20,000	20,000	14,376
FY 2023	35,000	35,000	9,954
FY 2024	24,000	24,000	44,500
FY 2025	5,000	5,000	16,046
FY 2026	0	0	0
Total Design	**85,000**	**85,000**	**85,000**
Construction			
FY 2022	0	0	0
FY 2023	0	0	0
FY 2024	5,000	5,000	0
FY 2025	27,000	27,000	10,000
FY 2026	75,000	75,000	60,000
FY 2027	210,000	210,000	125,000
FY 2028	118,000	118,000	120,000
FY 2029	0	0	120,000
FY 2030	0	0	0
FY 2031	0	0	0
FY 2032	0	0	0
FY 2033	0	0	0
FY 2034	0	0	0
FY 2035	0	0	0
Total Construction	**435,000**	**435,000**	**435,000**
TEC			
FY 2021	1,000	1,000	124
FY 2022	20,000	20,000	14,376
FY 2023	35,000	35,000	9,954
FY 2024	29,000	29,000	44,500
FY 2025	32,000	32,000	26,046
FY 2026	75,000	75,000	60,000
FY 2027	210,000	210,000	125,000
FY 2028	118,000	118,000	120,000
FY 2029	0	0	120,000
FY 2030	0	0	0
FY 2031	0	0	0
FY 2032	0	0	0
FY 2033	0	0	0
FY 2034	0	0	0
FY 2035	0	0	0
Total TEC	**520,000**	**520,000**	**520,000**

($K)

	Budget Authority (Appropriations)	Obligations	Costs
Other Project Costs (OPC)			
FY 2019	0	0	0
FY 2020	0	0	0
FY 2021	0	0	0
FY 2022	0	0	0
FY 2023	500	500	0
FY 2024	0	0	0
FY 2025	2,000	2,000	500
FY 2026	2,000	2,000	500
FY 2027	10,000	10,000	7,000
FY 2028	65,000	65,000	54,000
FY 2029	30,500	30,500	48,000
FY 2030	0	0	0
FY 2031	0	0	0
FY 2032	0	0	0
FY 2033	0	0	0
FY 2034	0	0	0
FY 2035	0	0	0
Total, OPC	**110,000**	**110,000**	**110,000**
Total Project Costs (TPC)			
FY 2019	0	0	0
FY 2020	0	0	0
FY 2021	1,000	1,000	124
FY 2022	20,000	20,000	14,376
FY 2023	35,500	35,500	9,954
FY 2024	29,000	29,000	44,500
FY 2025	34,000	34,000	26,546
FY 2026	77,000	77,000	60,500
FY 2027	220,000	220,000	132,000
FY 2028	183,000	183,000	174,000
FY 2029	30,500	30,500	168,000
FY 2030	0	0	0
FY 2031	0	0	0
FY 2032	0	0	0
FY 2033	0	0	0
FY 2034	0	0	0
FY 2035	0	0	0
Total TPC	**630,000**	**630,000**	**630,000**

HFTOC Subproject (21-D-511-05)

($K)

HFTOC	Budget Authority (Appropriations)	Obligations	Costs
Total Estimated Cost (TEC)			
Design			
FY 2021	1,000	1,000	124
FY 2022	25,000	25,000	10,376
FY 2023	14,000	14,000	21,921
FY 2024	8,000	8,000	13,000
FY 2025	0	0	2,579
FY 2026	0	0	0
Total Design	**48,000**	**48,000**	**48,000**
Construction			
FY 2022	0	0	0
FY 2023	1,000	1,000	0
FY 2024	20,000	20,000	10,000
FY 2025	60,000	60,000	35,000
FY 2026	120,000	120,000	80,000
FY 2027	68,000	68,000	70,000
FY 2028	0	0	74,000
FY 2029	0	0	0
FY 2030	0	0	0
FY 2031	0	0	0
FY 2032	0	0	0
FY 2033	0	0	0
FY 2034	0	0	0
FY 2035	0	0	0
Total Construction	**269,000**	**269,000**	**269,000**
TEC			
FY 2021	1,000	1,000	124
FY 2022	25,000	25,000	10,376
FY 2023	15,000	15,000	21,921
FY 2024	28,000	28,000	23,000
FY 2025	60,000	60,000	37,579
FY 2026	120,000	120,000	80,000
FY 2027	68,000	68,000	70,000
FY 2028	0	0	74,000
FY 2029	0	0	0
FY 2030	0	0	0
FY 2031	0	0	0
FY 2032	0	0	0
FY 2033	0	0	0
FY 2034	0	0	0
FY 2035	0	0	0
Total TEC	**317,000**	**317,000**	**317,000**

($K)

	Budget Authority (Appropriations)	Obligations	Costs
Other Project Costs (OPC)			
FY 2019	0	0	0
FY 2020	0	0	0
FY 2021	0	0	0
FY 2022	0	0	0
FY 2023	500	500	0
FY 2024	2,000	2,000	1,000
FY 2025	13,000	13,000	9,000
FY 2026	20,000	20,000	20,000
FY 2027	15,000	15,000	20,000
FY 2028	2,500	2,500	3,000
FY 2029	0	0	0
FY 2030	0	0	0
FY 2031	0	0	0
FY 2032	0	0	0
FY 2033	0	0	0
FY 2034	0	0	0
FY 2035	0	0	0
Total, OPC	**53,000**	**53,000**	**53,000**
Total Project Costs (TPC)			
FY 2019	0	0	0
FY 2020	0	0	0
FY 2021	1,000	1,000	124
FY 2022	25,000	25,000	10,376
FY 2023	15,500	15,500	21,921
FY 2024	30,000	30,000	24,000
FY 2025	73,000	73,000	46,579
FY 2026	140,000	140,000	100,000
FY 2027	83,000	83,000	90,000
FY 2028	2,500	2,500	77,000
FY 2029	0	0	0
FY 2030	0	0	0
FY 2031	0	0	0
FY 2032	0	0	0
FY 2033	0	0	0
FY 2034	0	0	0
FY 2035	0	0	0
Total TPC	**370,000**	**370,000**	**370,000**

S&F Subproject (21-D-511-06)

($K)

SF & FH	Budget Authority (Appropriations)	Obligations	Costs
Total Estimated Cost (TEC)			
Design			
FY 2021	0	0	0
FY 2022	0	0	0
FY 2023	0	0	0
FY 2024	0	0	0
FY 2025	0	0	0
FY 2026	0	0	0
Total Design	**0**	**0**	**0**
Construction			
FY 2022	0	0	0
FY 2023	59,625	59,625	0
FY 2024	40,000	40,000	35,000
FY 2025	50,000	50,000	40,000
FY 2026	55,000	55,000	50,000
FY 2027	60,000	60,000	40,000
FY 2028	25,375	25,375	30,000
FY 2029	10,000	10,000	40,000
FY 2030	TBD	TBD	TBD
FY 2031	TBD	TBD	TBD
FY 2032	TBD	TBD	TBD
FY 2033	TBD	TBD	TBD
FY 2034	TBD	TBD	TBD
FY 2035	TBD	TBD	TBD
Total Construction	**TBD**	**TBD**	**TBD**
TEC			
FY 2023	59,625	59,625	0
FY 2024	40,000	40,000	35,000
FY 2025	50,000	50,000	40,000
FY 2026	55,000	55,000	50,000
FY 2027	60,000	60,000	40,000
FY 2028	25,375	25,375	30,000
FY 2029	10,000	10,000	40,000
FY 2030	TBD	TBD	TBD
FY 2031	TBD	TBD	TBD
FY 2032	TBD	TBD	TBD
FY 2033	TBD	TBD	TBD
FY 2034	TBD	TBD	TBD
FY 2035	TBD	TBD	TBD
Total TEC	**TBD**	**TBD**	**TBD**

($K)

	Budget Authority (Appropriations)	Obligations	Costs
Other Project Costs (OPC)			
FY 2019	0	0	0
FY 2020	0	0	0
FY 2021	0	0	0
FY 2022	0	0	0
FY 2023	1,000	1,000	500
FY 2024	2,000	2,000	1,000
FY 2025	2,000	2,000	500
FY 2026	2,000	2,000	500
FY 2027	10,000	10,000	3,000
FY 2028	20,000	20,000	3,000
FY 2029	38,000	38,000	5,000
FY 2030	TBD	TBD	TBD
FY 2031	TBD	TBD	TBD
FY 2032	TBD	TBD	TBD
FY 2033	TBD	TBD	TBD
FY 2034	TBD	TBD	TBD
FY 2035	TBD	TBD	TBD
Total, OPC	**TBD**	**TBD**	**TBD**
Total Project Costs (TPC)			
FY 2019	0	0	0
FY 2020	0	0	0
FY 2021	0	0	0
FY 2022	0	0	0
FY 2023	60,625	60,625	500
FY 2024	42,000	42,000	36,000
FY 2025	52,000	52,000	40,500
FY 2026	57,000	57,000	50,500
FY 2027	70,000	70,000	43,000
FY 2028	45,375	45,375	33,000
FY 2029	48,000	48,000	45,000
FY 2030	TBD	TBD	TBD
FY 2031	TBD	TBD	TBD
FY 2032	TBD	TBD	TBD
FY 2033	TBD	TBD	TBD
FY 2034	TBD	TBD	TBD
FY 2035	TBD	TBD	TBD
Total TPC	**TBD**	**TBD**	**TBD**

4. Details of Project Cost Estimate[a]

Overall Project (21-D-511-01 through 21-D-511-06)

($K)

	Current Total Estimate	Previous Total Estimate	Previous Validated Baseline
Total Estimated Cost (TEC)			
Design			
Design	2,115,492	1,515,492	N/A
Contingency	270,896	170,896	N/A
Total Design	**2,386,388**	**1,686,388**	**N/A**
Construction			
Site Preparation	TBD	495,000	N/A
Equipment	TBD	807,500	N/A
Construction	TBD	4,007,008	N/A
Contingency	TBD	1,319,766	N/A
Total Construction	**TBD**	**6,629,274**	**N/A**
Other TEC (if any)			
Cold Startup	TBD	436,104	N/A
Contingency	TBD	168,000	N/A
Total, Other TEC	TBD	604,104	N/A
Total Estimated Cost (TEC)	**TBD**	**8,919,766**	**N/A**
Contingency, TEC	***TBD***	***1,658,662***	***N/A***
Other Project Costs (OPC)			
OPC except D&D			
Conceptual Planning & Design	300,000	300,000	N/A
Post CD-1 Costs	TBD	1,702,234	N/A
Contingency	TBD	178,000	N/A
Total OPC	**TBD**	**2,180,234**	**N/A**
Contingency, OPC	*TBD*	*178,000*	*N/A*
Total Project Cost	**TBD**	**11,100,000**	**N/A**
Total Contingency (TEC+OPC)	***TBD***	***1,836,662***	***N/A***

[a] The subprojects are pre-CD-2, so there are no validated baselines to include in the tables.

($K)

	Current Total Estimate	Previous Total Estimate	Previous Validated Baseline
Total Estimated Cost (TEC)			
Design			
Design	85,000	85,000	N/A
Contingency	8,500	8,500	N/A
Total Design	**93,500**	**93,500**	**N/A**
Construction			
Site Preparation	20,000	20,000	N/A
Equipment	20,000	20,000	N/A
Construction	248,500	248,500	N/A
Contingency	100,000	100,000	N/A
Total Construction	**388,500**	**388,500**	**N/A**
Other TEC (if any)			
Cold Startup	40,000	40,000	N/A
Contingency	10,000	10,000	N/A
Total, Other TEC	50,000	50,000	N/A
Total Estimated Cost (TEC)	**532,000**	**532,000**	**N/A**
Contingency, TEC	***118,500***	***118,500***	***N/A***
Other Project Costs (OPC)			
OPC except D&D			
Conceptual Planning & Design	0	0	N/A
Post CD-1 OPC Costs	46,000	46,000	N/A
Contingency	8,000	8,000	N/A
Total OPC	**54,000**	**54,000**	**N/A**
Contingency, OPC	*8,000*	*8,000*	*N/A*
Total Project Cost	**586,000**	**586,000**	**N/A**
Total Contingency (TEC+OPC)	***126,500***	***126,500***	***N/A***

($K)

	Current Total Estimate	Previous Total Estimate	Previous Validated Baseline
Total Estimated Cost (TEC)			
Design			
Design	1,905,492	1,305,492	N/A
Contingency	248,896	148,896	N/A
Total Design	**2,154,388**	**1,454,388**	**N/A**
Construction			
Site Preparation	TBD	400,000	N/A
Equipment	TBD	700,000	N/A
Construction	TBD	3,132,508	N/A
Contingency	TBD	1,064,766	N/A
Total Construction	**TBD**	**5,297,274**	**N/A**
Other TEC (if any)			
Cold Startup	TBD	301,104	N/A
Contingency	TBD	140,000	N/A
Total, Other TEC	TBD	441,104	N/A
Total Estimated Cost (TEC)	**TBD**	**7,192,766**	**N/A**
Contingency, TEC	***TBD***	***1,353,662***	***N/A***
Other Project Costs (OPC)			
OPC except D&D			
Conceptual Planning & Design	300,000	300,000	N/A
Post CD-1 OPC Costs	TBD	1,416,234	N/A
Contingency	TBD	150,000	N/A
Total OPC	**TBD**	**1,866,234**	**N/A**
Contingency, OPC	*TBD*	*150,000*	*N/A*
Total Project Cost	**TBD**	**9,059,000**	**N/A**
Total Contingency (TEC+OPC)	***TBD***	***1,503,662***	***N/A***

($K)

	Current Total Estimate	Previous Total Estimate	Previous Validated Baseline
Total Estimated Cost (TEC)			
Design			
Design	5,000	5,000	5,000
Contingency	500	500	500
Total Design	**5,500**	**5,500**	**5,500**
Construction			
Site Preparation	7,250	5,000	7,250
Equipment	5,000	2,500	5,000
Construction	51,100	34,000	51,100
Contingency	10,350	5,000	10,350
Total Construction	**73,700**	**46,500**	**73,700**
Other TEC (if any)			
Cold Startup	10,000	5,000	10,000
Contingency	2,000	1,000	2,000
Total, Other TEC	12,000	6,000	12,000
Total Estimated Cost (TEC)	**91,200**	**58,000**	**91,200**
Contingency, TEC	***12,850***	***6,500***	***12,850***
Other Project Costs (OPC)			
OPC except D&D			
Conceptual Planning & Design	0	0	0
Post CD-1 OPC Costs	1,750	20,000	1,750
Contingency	250	2,000	250
Total OPC	**2,000**	**22,000**	**2,000**
Contingency, OPC	*250*	*2,000*	*250*
Total Project Cost	**93,200**	**80,000**	**93,200**
Total Contingency (TEC+OPC)	***13,100***	***8,500***	***13,100***

($K)

	Current Total Estimate	Previous Total Estimate	Previous Validated Baseline
Total Estimated Cost (TEC)			
Design			
Design	75,000	90,000	N/A
Contingency	10,000	10,000	N/A
Total Design	**85,000**	**100,000**	**N/A**
Construction			
Site Preparation	20,000	20,000	N/A
Equipment	20,000	20,000	N/A
Construction	255,000	240,000	N/A
Contingency	80,000	80,000	N/A
Total Construction	**375,000**	**360,000**	**N/A**
Other TEC (if any)			
Cold Startup	50,000	50,000	N/A
Contingency	10,000	10,000	N/A
Total, Other TEC	60,000	60,000	N/A
Total Estimated Cost (TEC)	**520,000**	**520,000**	**N/A**
Contingency, TEC	***100,000***	***100,000***	***N/A***
Other Project Costs (OPC)			
OPC except D&D			
Conceptual Planning & Design	0	0	N/A
Post CD-1 OPC Costs	100,000	100,000	N/A
Contingency	10,000	10,000	N/A
Total OPC	**110,000**	**110,000**	**N/A**
Contingency, OPC	*10,000*	*10,000*	*N/A*
Total Project Cost	**630,000**	**630,000**	**N/A**
Total Contingency (TEC+OPC)	***110,000***	***110,000***	***N/A***

($K)

	Current Total Estimate	Previous Total Estimate	Previous Validated Baseline
Total Estimated Cost (TEC)			
Design			
Design	45,000	30,000	N/A
Contingency	3,000	3,000	N/A
Total Design	**48,000**	**33,000**	**N/A**
Construction			
Site Preparation	20,000	20,000	N/A
Equipment	20,000	20,000	N/A
Construction	167,000	182,000	N/A
Contingency	40,000	40,000	N/A
Total Construction	**247,000**	**262,000**	**N/A**
Other TEC (if any)			
Cold Startup	20,000	20,000	N/A
Contingency	2,000	2,000	N/A
Total, Other TEC	22,000	22,000	N/A
Total Estimated Cost (TEC)	**317,000**	**317,000**	**N/A**
Contingency, TEC	***45,000***	***45,000***	***N/A***
Other Project Costs (OPC)			
OPC except D&D			
Conceptual Planning & Design	0	0	N/A
Post CD-1 OPC Costs	50,000	50,000	N/A
Contingency	3,000	3,000	N/A
Total OPC	**53,000**	**53,000**	**N/A**
Contingency, OPC	*3,000*	*3,000*	*N/A*
Total Project Cost	**370,000**	**370,000**	**N/A**
Total Contingency (TEC+OPC)	***48,000***	***48,000***	***N/A***

($K)

	Current Total Estimate	Previous Total Estimate	Previous Validated Baseline
Total Estimated Cost (TEC)			
Design			
Design	N/A	N/A	N/A
Contingency	N/A	N/A	N/A
Total Design	**N/A**	**N/A**	**N/A**
Construction			
Site Preparation	TBD	30,000	N/A
Equipment	TBD	45,000	N/A
Construction	TBD	170,000	N/A
Contingency	TBD	30,000	N/A
Total Construction	**TBD**	**275,000**	**N/A**
Other TEC (if any)			
Cold Startup	TBD	20,000	N/A
Contingency	TBD	5,000	N/A
Total, Other TEC	**TBD**	**25,000**	**N/A**
Total Estimated Cost (TEC)	**TBD**	**300,000**	**N/A**
Contingency, TEC	***TBD***	***35,000***	***N/A***
Other Project Costs (OPC)			
OPC except D&D			
Conceptual Planning & Design	0	0	N/A
Post CD-1 OPC Costs	TBD	70,000	N/A
Contingency	TBD	5,000	N/A
Total OPC	**TBD**	**75,000**	**N/A**
Contingency, OPC	*TBD*	*5,000*	*N/A*
Total Project Cost	**TBD**	**375,000**	**N/A**
Total Contingency (TEC+OPC)	***TBD***	***40,000***	***N/A***

5. Schedule of Appropriations Requests

($K)

Request Year	Type	Prior Years	FY2023	FY2024	FY2025	FY2026	FY2027	FY2028	FY2029	Out Years	Total
FY 2021	TEC	241,896	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	OPC	436,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TPC	677,896	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FY 2022	TEC	686,896	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	OPC	451,213	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TPC	1,138,109	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9,961,891	11,100,000
FY 2023	TEC	700,896	670,000	828,235	984,508	1,001,339	877,000	1,100,000	450,000	2,307,788	8,919,766
	OPC	437,213	30,000	30,000	30,000	50,000	75,000	100,000	750,000	678,021	2,180,234
	TPC	1,138,109	700,000	858,235	1,014,508	1,051,339	952,000	1,200,000	1,200,000	2,985,809	11,100,000
FY 2024	TEC	700,896	1,170,000	828,235	1,070,000	1,150,000	1,125,000	1,130,500	450,000	1,295,135	8,919,766
	OPC	437,213	30,000	30,000	30,000	50,000	75,000	99,500	749,000	679,521	2,180,234
	TPC	1,138,109	1,200,000	858,235	1,100,000	1,200,000	1,200,000	1,230,000	1,199,000	1,974,656	11,100,000
FY 2025	TEC	700,896	1,170,000	837,985	1,158,000	1,402,750	1,545,000	1,307,875	1,386,979	TBD	TBD
	OPC	437,213	30,000	20,250	42,000	77,250	215,000	622,125	782,021	TBD	TBD
	TPC	1,138,109	1,200,000	858,235	1,200,000	1,480,000	1,760,000	1,930,000	2,169,000	TBD	TBD

6. Related Operations and Maintenance Funding Requirements

Start of Operation or Beneficial Occupancy (fiscal quarter or date)	1Q FY 2032 – 4Q FY 2035
Expected Useful Life (number of years)	50
Expected Future Start of D&D of this capital asset (fiscal quarter)	1Q FY 2082 – 4Q FY 2085

Related Funding Requirements

(Budget Authority in Millions of Dollars)

	Annual Costs		Life Cycle Costs[a]	
	Previous Total Estimate	Current Total Estimate	Previous Total Estimate	Current Total Estimate
Operations and Maintenance	600	600	48,100	48,100

7. D&D Information

The SRPPF plutonium processing capability will be constructed within the existing partially completed 226-F building. This will require dismantlement and removal of previously installed MFFF equipment and support systems and facilities as necessary to accommodate the new plutonium production mission. Costs for dismantlement and removal of previously installed MFFF equipment will be part of the D&R Subproject.

8. Acquisition Approach

On May 10, 2018, in support of the CD-1, NNSA requested Savannah River (SR) M&O to lead the SRPPF CD-1 Conceptual Design development activities while leveraging the LANL M&O plutonium processing knowledge and ongoing project and operation activities. The SR M&O utilized a LANL subcontract with Merrick to provide the process conceptual design. The SR M&O utilized an affiliate sub-contract relationship with Fluor Inc., located in Greenville S.C., to provide design of the balance of plant systems. The SR M&O was responsible for the nuclear safety and ES&H system conceptual design development while relying on the Physical Security Center of Excellence (PSCOE) from Sandia National Laboratories for the physical security conceptual design.

In FY 2022, aligning with the CD-1 approved *Acquisition Strategy*, a change in the acquisition approach is being driven due to the DOE decision to extend the Savannah River M&O Contract through 2027 and the slippage in the SRPPF DPB design

[a] Current Life Cycle Costs and Annual Costs are based on an updated Life Cycle Cost Estimate performed in January 2021.

completion milestone. NNSA has directed the M&O contractor to solicit and award a Construction Management (CM) Contractor to assume all the Engineering, Procurement, and Construction (EPC) responsibilities. Until the award and transition of the new CM contractor, the SRS M&O will continue to manage the sole-source subcontracts with Merrick and Fluor and integrate the PSCOE design to complete the integrated SRPPF design. The SRS M&O and design partners will continue engaging qualified specialty equipment and materials suppliers early in design to improve the quality of design enabling optimum procurements and construction execution. The SRS M&O will be responsible for the project design's constructability and initiate any early construction critical decisions and follow-on execution. Once transition of the EPC activities is complete to the CM contractor, the SRS M&O's remaining responsibilities will be the Facility Design Authority (FDA) for the facility, the production equipment, balance of plant support systems, and nuclear safety and security systems. The SRS M&O is the operational authority and will ensure SRPPF includes operability, maintainability, and sustainability requirements that are flowed down, implemented, and controlled throughout the project execution. As the plutonium program and project integrator, the SRS M&O will be responsible for the program and operational assurance during design, procurement, construction, start-up and properly sequencing of the project operational readiness and transition. LANL will continue to support the FDA by providing process inputs and oversight for specialty process equipment. Lawrence Livermore National Laboratory will also support the FDA and serve as the Weapons Design Agency for the first pit type to be produced at SRS. The SRS M&O contract will include Contract Line-Item Numbers to execute NNSA capital line items at SRS to align the applicable requirements and appropriate incentives to optimize the project execution and completion.

The SRPPF project is continuing to look for opportunities to expedite the execution and have implemented concurrent review processes to support the technical, acquisition and project management submittal processes. Federal reviews are being executed in parallel with the contractor's independent team and management reviews. A consolidated comment resolution process is being implemented. The Contractor providing complete, quality submittals will be key to successful implementation and minimizing the Federal oversight and risk acceptance.

The SRPPF project continues to utilize lessons learned in acquisition and execution of similarly sized nuclear projects, including the execution of the Los Alamos Plutonium Pit Production Project and Y-12 Uranium Processing Facility Project. These lessons learned include:

- early long-lead material and engineered procurements, including gloveboxes, BOP equipment, and bulk materials; and
- early site preparation, to include D&R required to prepare existing SRS facilities for SRPPF CD-2/3 design and construction activities.
- Construction planning and productivity factors
- Testing, Start-up and Transition to Operations

The approved CD-1 package identified a multi-subproject construction execution approach. This acquisition approach is continuing to be refined as design matures, along with integration with the national supply chain. Within each subproject, where appropriate, a phasing approach will be applied that may include the following as necessary to optimize project schedule and cash flow:

- early site preparation and installation of temporary facilities / utilities necessary to enable construction mobilization, demolition and removal actions, long lead procurements (i.e., CD-3A);
- performance of independent and usable segments of project scope as subprojects utilizing a "phasing" tailoring strategy approach per DOE O 413.3B, (i.e., a phased subproject that would be managed under its own independent CD-2/3 and CD-4. This will be managed under the CD-1 cost and schedule range, prior to the final CD-2/3 and CD-4 for the overall project).