

GAO@100 Highlights

Highlights of [GAO-21-244](#), a report to the Committee on Armed Services, U.S. Senate

Why GAO Did This Study

Since the 1940s, the nation's supply of lithium used in some nuclear weapons components has been processed at NNSA's Y-12 site. However, due to deteriorating facilities and equipment and the need to reestablish dormant processing capabilities, NNSA faces risks in meeting future lithium demand. To address these challenges, NNSA has developed a strategy to meet lithium demand until the 2030s, by which time it expects the new LPF will be fully operational.

The Senate committee report accompanying the National Defense Authorization Act for Fiscal Year 2020 includes a provision for GAO to examine NNSA's lithium programs and projects. GAO's report examines, among other things, (1) the status of current cost and schedule estimates and design activities for NNSA's LPF project and (2) the extent to which NNSA has developed management tools for the lithium program that are consistent with best practices.

GAO reviewed NNSA and contractor documentation, compared NNSA's efforts against agency requirements and best practices, and interviewed NNSA officials and Y-12 contractor representatives.

What GAO Recommends

GAO is making seven recommendations, including that NNSA should ensure important data are collected for future technology assessments and align the program schedule with the scope of work. NNSA agreed with five and agreed in principle with two recommendations, noting actions taken. GAO believes NNSA needs to take additional actions, as discussed in the report.

View [GAO-21-244](#). For more information, contact Allison Bawden at (202) 512-3841 or bawdena@gao.gov.

August 2021

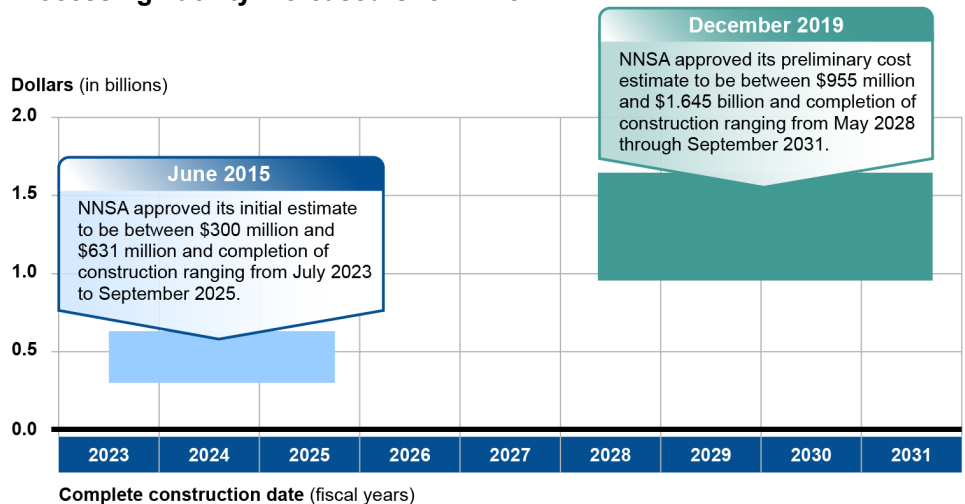
NUCLEAR WEAPONS

Actions Needed to Improve Management of NNSA's Lithium Activities

What GAO Found

In December 2019, the National Nuclear Security Administration (NNSA) preliminarily estimated construction would cost between \$955 million and \$1.645 billion for a new lithium processing facility (LPF) at the Y-12 National Security Complex (Y-12) in Tennessee and would be completed between May 2028 and September 2031. This is a substantial increase in cost and schedule; in 2015, NNSA initially estimated that a new facility would cost between \$300 and \$631 million and could be completed between 2023 and 2025. One reason for the cost and schedule changes is increased facility size, as reflected in a more mature design. GAO's evaluation of the LPF's preliminary cost estimate found it to be substantially comprehensive. NNSA also plans to include a new technology in the facility design based on its most recent technology assessment. In this assessment, NNSA did not collect certain data needed to fully evaluate the lithium produced with the technology. GAO best practices recommend agencies ensure all necessary evidence is collected when assessing the maturity of a new technology. Otherwise, NNSA faces some risks to ensuring the technology is ready to start construction in 2024 and could face future delays to the LPF if testing reveals unexpected problems with lithium produced with this technology.

Preliminary Cost and Schedule Estimates for NNSA's New Lithium Processing Facility Increased Over Time^a



Source: GAO analysis of National Nuclear Security Administration (NNSA) documents. | GAO-21-244

^aNNSA's estimates are reported as actual dollars and were not adjusted for inflation.

Important program management tools that NNSA could use to help ensure that the agency meets lithium demand are under development and are not consistent with best practices. For example, the lithium program's current schedule and scope of work—as expressed in a work breakdown structure—do not track the same program activities. According to GAO best practices, a program's schedule should be aligned with its work breakdown structure to ensure that activities are completed on time. By aligning these management tools, NNSA could help ensure that the comprehensive scope of work for the program is reflected in the schedule and that NNSA is accomplishing all program activities on time.