August 2023

NATIONAL NUCLEAR SECURITY ADMINISTRATION

Assessments of Major Projects

GAO Highlights

Highlights of GAO-23-104402, a report to congressional committees

Why GAO Did This Study

NNSA—a separately organized agency within DOE—plans to invest tens of billions of dollars in major construction projects to modernize the research and production infrastructure on which the nuclear weapons stockpile depends. Major projects are those with an estimated cost of $100 million or more. House and Senate reports include provisions for GAO to periodically review these projects.

This report assesses (1) the performance of NNSA's portfolio of major projects in the execution phase that have cost and schedule baselines and (2) the development and maturity of project designs and critical technologies for projects in the earlier definition phase that do not yet have cost and schedule baselines. The report also includes individual assessments of the major projects.

GAO collected and analyzed project cost, schedule, design and technology data and documents; reviewed monthly project status reports; reviewed DOE's project management order; and interviewed NNSA officials.

GAO reviewed projects in the definition phase (which takes a project through preliminary and final designs) and those in the subsequent execution phase (which are in construction).

What GAO Recommends

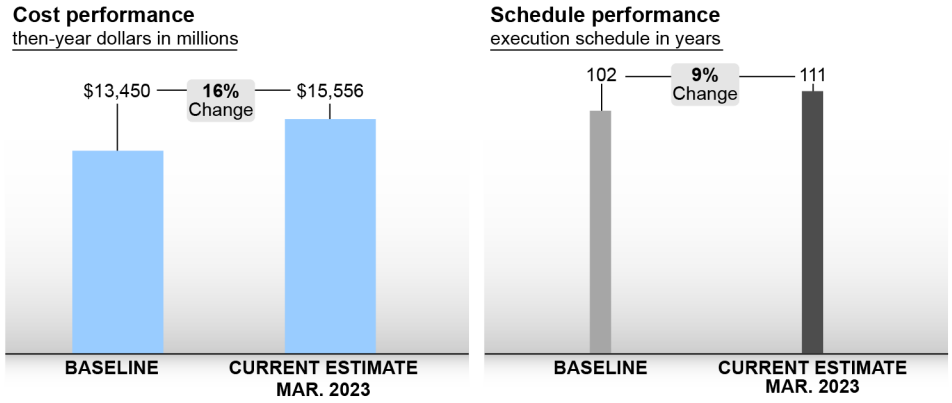
In prior work, GAO made multiple recommendations to improve NNSA's management of its major projects. NNSA agreed with a majority of those recommendations and implemented many changes. However, as of July 2023, NNSA had not fully addressed seven of those recommendations.

View GAO-23-104402. For more information, contact Allison Bawden at (202) 512-3841 or bawdena@gao.gov.

What GAO Found

As of March 2023, the National Nuclear Security Administration (NNSA) estimated that its portfolio of 18 major projects in the execution phase will overrun their collective cost and schedule baselines (see fig.). Cost and schedule baselines are quantitative indicators of performance measured by specific cost and completion date estimates. NNSA is reviewing cost and schedule estimates for four of these projects that had already experienced cost overruns or schedule delays and that could result in additional overruns or delays. For example, two of the four projects are part of the Uranium Processing Facility family of projects (in Tennessee). They are a combined $2 billion over their cost baselines and 6.5 years behind their schedule baselines. These cost increases and schedule delays are due to multiple factors, such as poor management practices by the contractor, lower levels of worker productivity than planned, and impacts from the COVID-19 pandemic (e.g., employee absenteeism due to illness). NNSA and the Department of Energy (DOE) expect to complete reviews of both projects in summer 2023.

Cumulative Cost and Schedule Overruns for NNSA's Portfolio of Major Projects in the Execution Phase, as of March 2023



Source: GAO analysis of National Nuclear Security Administration (NNSA) project documentation and data. | GAO-23-104402

Of the 10 NNSA major projects in the earlier definition phase, six projects are implementing significant design changes, and NNSA plans to put two projects on hold for multiple years. For example, in January 2022, NNSA revised the top-level requirements for the multibillion-dollar Savannah River Plutonium Processing Facility project (in South Carolina). This revision increased its scope in part by adding more processing space and support utilities in the main process building to enable future modifications. Further, NNSA plans to place the High Explosives Synthesis Formulation and Production Facility (in Texas) on hold once the site contractor has completed all design work by September 2023. According to NNSA's fiscal year 2024 budget justification, this hold is a result of cost increases and schedule delays being experienced by many of the agency's construction projects, as well as a decision to focus resources on a reduced number of high-priority projects. In addition, five of the 10 major projects in the definition phase have identified critical technologies, and these projects have generally met milestones for maturing these technologies.