

GAO Highlights

Highlights of [GAO-16-585](#), a report to the Committee on Armed Services, U.S. Senate

Why GAO Did This Study

In recent years, NNSA has spent billions of dollars designing large construction projects, only to revisit options after cost increases and schedule delays. At Los Alamos, NNSA reversed its prior decision to build a nuclear facility as part of the CMRR project after spending \$450 million. The facility was to provide analysis equipment needed to support the production of pits as part of nuclear weapons life extension programs. Instead, NNSA approved a revised CMRR project to install plutonium analysis equipment in existing facilities.

Senate report 113-44 includes a provision for GAO to review NNSA's revised CMRR project. GAO's report assesses (1) the extent to which the revised CMRR project is expected to meet plutonium analysis needs, (2) how its cost and scope compare to the previously approved project, and (3) the extent to which its schedule and cost estimates reflect best practices, among other objectives. GAO reviewed project documentation, assessed cost and schedule estimates against GAO-identified best practices, and interviewed NNSA and DOE officials and CMRR contractor representatives.

What GAO Recommends

GAO is making seven recommendations to NNSA, including that it identify a pit production-related parameter for the revised CMRR project and develop a CMRR project schedule that includes all necessary work activities. NNSA generally neither agreed nor disagreed with the recommendations but described some actions it was taking. GAO continues to believe that the recommendations are valid, as discussed in this report.

View [GAO-16-585](#). For more information, contact David Trimble, (202) 512-3841, trimbled@gao.gov.

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DOE PROJECT MANAGEMENT

NNSA Needs to Clarify Requirements for Its Plutonium Analysis Project at Los Alamos

What GAO Found

The Department of Energy's (DOE) National Nuclear Security Administration (NNSA) defined requirements for the revised Chemistry and Metallurgy Research Replacement (CMRR) project to provide plutonium analysis equipment at its Los Alamos site but did not specify the capacity for analyzing plutonium that the project should provide, making it possible that the project would not meet plutonium analysis needs. NNSA policy states that project requirements should include key performance parameters, which describe how well a project will perform its functions, expressed in terms such as processing rate or capacity. However, NNSA did not identify a key parameter that addresses a primary function of the project's analysis equipment—to analyze plutonium in support of producing an essential part of a nuclear weapon, known as a pit. NNSA has determined that it needs sufficient analysis capacity to support producing pits, including at planned rates of 10 pits per year in 2024 and 50 to 80 pits per year by 2030, but an NNSA analysis shows that the revised CMRR project may not support these rates. NNSA officials said the project's requirements do not include a pit production-related parameter because NNSA only tasked the CMRR project with replacing analysis equipment used in an aging facility, regardless of analysis capacity. Not identifying this parameter likely contributed to the project potentially not providing sufficient analysis capacity to support planned pit production and may have contributed to different understandings among senior agency officials about how well the project will support pit production. By identifying a pit production-related parameter that describes the analysis capacity that the revised CMRR project is to provide, NNSA could clarify the extent to which the project will support such pit production.

NNSA's total estimated cost for the revised CMRR project is lower than the cost of the previously approved CMRR project, which included a large nuclear facility, but NNSA may have overstated its cost savings. NNSA's estimated savings from cancelling the previously approved nuclear facility did not account for work that the agency deferred to future projects, including a storage vault and tunnel. NNSA's approach for the revised CMRR project allows costs to be spread out over time, improving NNSA's ability to concurrently fund other work. However, the revised CMRR project includes less scope and is likely to provide less plutonium analysis capacity than the previously approved nuclear facility.

The revised CMRR project schedule and cost estimates only partially met best practices. For example, the schedule did not include most of the work needed to complete the project. According to best practices, agencies should develop and maintain a schedule that contains all necessary work activities, but the revised project's schedule was limited to near-term work ending in 2017. When NNSA created the revised CMRR schedule, DOE did not specifically require projects to maintain complete schedules after project approval. Since then, DOE has issued a memorandum directing that all schedules contain the entire scope of work, but NNSA does not plan to develop a complete schedule for the entire CMRR project until mid-2017. Continuing to rely on a partial schedule limits managers' insight into how current activities might affect future completion dates, including NNSA's goal to end plutonium work in an aging facility at Los Alamos.