

GAO Highlights

Highlights of [GAO-16-218](#), a report to the Committee on Armed Services, U.S. Senate

Why GAO Did This Study

Weapons in the U.S. nuclear stockpile are aging. NNSA and DOD undertake LEPs to refurbish or replace nuclear weapons' aging components. In 2010, they began an LEP to consolidate four versions of a legacy nuclear weapon, the B61 bomb, into a bomb called the B61-12 (see fig.). NNSA and DOD have stated they must complete this LEP by 2024 to uphold U.S. commitments to the North Atlantic Treaty Organization. As of September 2015, NNSA and DOD estimated that the B61-12 LEP would cost about \$8.9 billion.

Senate Report 113-44 included a provision for GAO to periodically assess the status of the B61-12 LEP. This report assesses (1) NNSA's management approach for the B61-12 LEP and (2) the extent to which NNSA and the Air Force are managing risks in the LEP. GAO reviewed project plans, schedules, management plans, and other documents and program data, and visited the two NNSA national laboratories—Sandia and Los Alamos—that serve as the design agencies for the LEP.

What GAO Recommends

GAO is making no new recommendations but discusses the status of prior GAO recommendations in this report. In commenting on a draft of this report, DOE generally agreed with GAO's findings and provided technical comments that were incorporated, as appropriate. DOD provided technical comments that were also incorporated, as appropriate.

View [GAO-16-218](#). For more information, contact David C. Trimble at (202) 512-3841 or trimbled@gao.gov.

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NUCLEAR WEAPONS

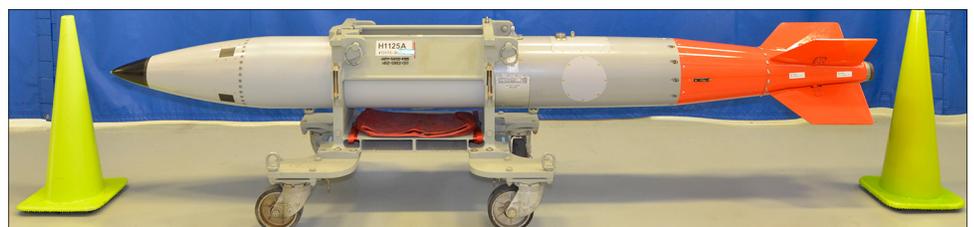
NNSA Has a New Approach to Managing the B61-12 Life Extension, but a Constrained Schedule and Other Risks Remain

What GAO Found

The B61-12 life extension program's (LEP) managers have developed a management approach that officials from the Department of Energy's (DOE) National Nuclear Security Administration (NNSA) and the Department of Defense (DOD) regard as improved over the management approach used for past LEPs, which experienced schedule delays and cost overruns. Among other things, the B61-12 LEP is the first LEP to use earned value management, a tool that measures the planned versus actual value of work accomplished in a given period, which may help NNSA ensure that work progresses on budget and on schedule. It is also the first LEP to integrate the schedules and cost estimates for activities at all participating NNSA sites. NNSA used this new approach to inform its first Program Execution Guide for defense programs, issued in August 2014, which applies to all NNSA defense programs. NNSA's new management approach notwithstanding, the B61-12 LEP faces ongoing management challenges in some areas, including staff shortfalls and an earned value management system that has yet to be tested. The new management approach may help the LEP address these potential challenges, but it is too soon to determine whether this will be the case.

To manage risks in the B61-12 LEP, NNSA and the Air Force use a risk management database and integrated schedules to categorize risks and incorporate risk management steps in the schedules. According to NNSA and Air Force officials, some risks have already been managed in this manner. For example, NNSA estimates that making a needed material procurement in advance prevented a potential delay of more than a year and a potential cost increase of more than \$2 million. Remaining risks include the risk that components may fail in certain flight environments and risks related to testing of certain nonnuclear components. NNSA is also working to ensure future compatibility with the F-35 aircraft. NNSA and Air Force officials said they will not know for several years whether steps planned to manage these risks are adequate. A constrained development and production schedule—which DOE's and DOD's Nuclear Weapons Council characterized as having "little, if any, margin left"—complicates efforts to manage risks. Factors constraining the schedule include the aging of components in current versions of the B61, delays in starting the B61-12 LEP because of a lengthy design study, the effects of sequestration, and the need to complete the B61-12 LEP so that NNSA can begin other planned LEPs. GAO will continue to monitor these issues as it assesses the LEP in later stages.

The B61-12



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