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NUCLEAR WEAPONS

DOD and NNSA Need to Better Manage Scope of Future Refurbishments and Risks to Maintaining U.S. Commitments to NATO

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Highlights

Highlights of GAO-11-387, a report to congressional requesters

Why GAO Did This Study

U.S. nuclear weapons are aging, with key components reaching the end of their service life. In September 2008, the Department of Defense (DOD) and the National Nuclear Security Administration (NNSA) began a study of military requirements and design options for extending the B61 bomb's service life. The B61 is used to support the U.S. strategic deterrent and the North Atlantic Treaty Organization (NATO). GAO was asked to assess the extent to which DOD and NNSA have (1) considered the time available to begin producing refurbished bombs when determining the scope of the study; and (2) taken actions to avoid operational gaps in U.S. nuclear weapons commitments to NATO during the life extension program. To evaluate these objectives, GAO analyzed DOD and NNSA policies, guidance, and reports on life extension programs, and interviewed officials responsible for B61 operations, life extension program planning, management, and oversight. This is the unclassified version of a classified report issued in December 2010.

What GAO Recommends

GAO is making recommendations that address the need to scope future requirements and design studies to reflect the time available to complete the program and prepare risk management plans to address operational concerns caused by potential life extension program delays. DOD and NNSA agreed with the recommendations.

View GAO-11-387 or key components. For more information, contact John Pendleton at (202) 512-3489 or pendletonj@gao.gov or Gene Aloise at (202) 512-3841 or aloisee@gao.gov.

What GAO Found

DOD and NNSA have made progress in studying and updating the military's performance requirements for the B61 bomb and have ruled out some design options, but the broad scope of the study has complicated the effort, given the time available to begin producing refurbished bombs. Key components of the B61 bombs need to be replaced or they will begin reaching the end of their service life. However, the time and effort required to evaluate the broad scope, and other factors identified by DOD and NNSA officials, have prolonged the study by 1 year. Unlike prior life extension programs, the ongoing B61 study was broadly scoped to accomplish a variety of goals—such as considering previously untried design options and concepts—in addition to replacing the bomb's aging components. GAO's prior work on designing evaluative studies has shown that tailoring a study's scope to reflect relevant time constraints is a critical and well-established practice. However, the guidance for conducting life extension programs does not require DOD and NNSA to consider the available time when setting the scope for a life extension study. Because they have until September 2011 to complete the study, DOD and NNSA officials told GAO that it was premature to assess whether the study's broad scope put the life extension program at risk. However, future life extension programs are also likely to occur against the end of the existing warhead's service life. Unless DOD and NNSA clarify their procedures to require that future studies are properly scoped for the available time, they risk setting unrealistic goals and delaying future life extensions.

Although DOD and NNSA believe the B61 study will be completed by September 2011, they have not yet prepared a long-term risk management plan to help avoid operational gaps and ensure that the United States will be able to maintain the capability to support its NATO commitments if the B61 life extension program is delayed or canceled. The United States has pledged to support its nuclear weapons commitments to NATO while the B61 life extension program is under way. In light of this pledge, NNSA and DOD plan to perform just-in-time maintenance on the affected bombs to ensure they remain operational until NNSA can deliver refurbished bombs to DOD. However, avoiding an operational capability gap over the long term may prove challenging, as previous nuclear weapons life extension programs have experienced schedule delays for a variety of reasons. GAO's prior work has shown that a risk management plan is a useful tool for identifying and measuring risks, developing and implementing risk handling options, and assessing risk reduction measures. DOD and NNSA have identified potential steps that could be taken to mitigate operational risks if the B61 life extension program is delayed, but they have not prepared a plan to offer options for managing these risks. Developing such a plan would help ensure that DOD and NNSA are prepared to implement necessary measures to preserve U.S. commitments to NATO. Furthermore, without guidance requiring that DOD and NNSA prepare such risk management plans, operational requirements for other weapons could also be at risk as they go through future life extension programs.