GAO Highlights

Highlights of GAO-20-409, a report to congressional committees

July 2020

NUCLEAR WEAPONS

Action Needed to Address the W80-4 Warhead Program's Schedule Constraints

Why GAO Did This Study

To maintain and modernize the U.S. nuclear arsenal, NNSA and DOD conduct LEPs. In 2014, they began an LEP to produce a warhead, the W80-4, to be carried on the LRSO missile. In February 2019, NNSA adopted an FPU delivery date of fiscal year 2025 for the W80-4 LEP, at an estimated cost of about $11.2 billion over the life of the program.

The explanatory statement accompanying the 2018 appropriation included a provision for GAO to review the W80-4 LEP. This report examines, among other objectives, (1) the risks NNSA has identified for the W80-4 LEP, and processes it has established to manage them, and (2) the extent to which NNSA's lifecycle cost estimate for the LEP aligned with best practices. GAO reviewed NNSA's risk management database and other program information; visited four NNSA sites; interviewed NNSA and DOD officials; and assessed the program's cost estimate using best practices established in prior GAO work.

What GAO Recommends

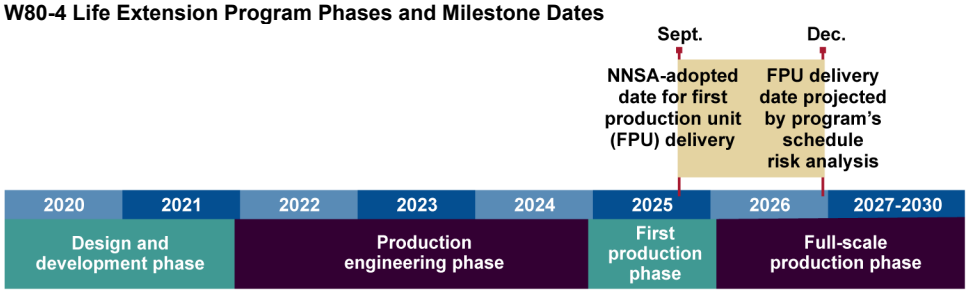
GAO is making two recommendations, including that NNSA adopt a W80-4 program FPU delivery date based on the program's schedule risk analysis, or document its justification for not doing so. NNSA generally disagreed with GAO's recommendations. GAO continues to believe that its recommendations are valid, as discussed in the report.

View GAO-20-409. For more information, contact Allison B. Bawden at (202) 512-3841 or bawdena@gao.gov

What GAO Found

The National Nuclear Security Administration (NNSA), a separately organized agency within the Department of Energy (DOE), has identified a range of risks facing the W80-4 nuclear warhead life extension program (LEP)—including risks related to developing new technologies and manufacturing processes as well as reestablishing dormant production capabilities. NNSA is managing these risks using a variety of processes and tools, such as a classified risk database. However, NNSA has introduced potential risk to the program by adopting a date (September 2025) for the delivery of the program's first production unit (FPU) that is more than 1 year earlier than the date projected by the program's own schedule risk analysis process (see figure). NNSA and Department of Defense (DOD) officials said that they adopted the September 2025 date partly because the National Defense Authorization Act for fiscal year 2015 specifies that NNSA must deliver the first warhead unit by the end of fiscal year 2025, as well as to free up resources for future LEPs. However, the statute allows DOE to obtain an extension, and, according to best practices identified in GAO's prior work, program schedules should avoid date constraints that do not reflect program realities. Adopting an FPU date more consistent with the date range identified as realistic in the W80-4 program's schedule risk analysis, or justifying an alternative date based on other factors, would allow NNSA to better inform decision makers and improve alignment between schedules for the W80-4 program and DOD's long-range standoff missile (LRSO) program.

W80-4 Life Extension Program Phases and Milestone Dates



Source: GAO analysis of National Nuclear Security Administration (NNSA) data. | GAO-20-409

NNSA substantially incorporated best practices in developing the preliminary lifecycle cost estimate for the W80-4 LEP, as reflected in the LEP's weapon design and cost report. GAO assessed the W80-4 program's cost estimate of $11.2 billion against the four characteristics of a high quality, reliable cost estimate: comprehensive, well-documented, accurate, and credible. To develop a comprehensive cost estimate, NNSA instituted processes to help ensure consistency across the program. The program also provided detailed documentation to substantiate its estimate and assumptions. To help ensure accuracy, the cost estimate drew on historic data from prior LEPs. Finally, to support a credible estimate, NNSA reconciled the program estimate with an independent cost estimate. GAO considers a cost estimate to be reliable if the overall assessment ratings for each of the four characteristics are substantially or fully met—as was the case with the W80-4 program's cost estimate in its weapon design and cost report, which substantially met each characteristic.