May 2008

NUCLEAR WEAPONS

NNSA Needs to Establish a Cost and Schedule Baseline for Manufacturing a Critical Nuclear Weapon Component

GAO Accountability • Integrity • Reliability

Highlights

Highlights of GAO-08-593, a report to the Subcommittee on Energy and Water Development, Committee on Appropriations, House of Representatives

Why GAO Did This Study

The Department of Energy's National Nuclear Security Administration (NNSA) is responsible for manufacturing pits, a key component in a nuclear warhead. The department lost its ability to manufacture pits in 1989 with the closing of the Rocky Flats Plant. In 1996, the Los Alamos National Laboratory (LANL) was directed to reestablish a pit manufacturing capability, starting with a limited number of pits for the W88 warhead. In recent years, NNSA has considered ways to increase its pit manufacturing capacity, including building a new, large-scale pit manufacturing facility. It has also proposed producing pits for the Reliable Replacement Warhead (RRW). GAO was asked to determine the (1) extent to which NNSA achieved its major goals for reestablishing its pit manufacturing capability, (2) factors that currently constrain its ability to increase its pit manufacturing capacity, and (3) status of its plans for future pit manufacturing. For this review, GAO met with NNSA and LANL officials, reviewed agency documents, and visited the nuclear facility used to manufacture pits.

What GAO Recommends

GAO is making two recommendations to the Administrator of NNSA to ensure that NNSA establishes a cost and schedule baseline to support future pit manufacturing operations. NNSA did not specifically comment on GAO's recommendations but provided general comments on the report.

To view the full product, including the scope and methodology, click on GAO-08-593. For more information, contact Gene Aloise at (202) 512-3841 or aloisee@gao.gov.

What GAO Found

NNSA achieved its major goals for reestablishing its pit manufacturing capability at LANL as defined by the agency in 2002. Specifically, NNSA's goals were to create a capability to manufacture 10 pits per year starting in 2007 and to deliver a single W88 war reserve pit to the stockpile in 2007. War reserve pits must meet stringent specifications, while other types of pits, such as pits destructively tested for production quality control, may not meet the same standards. NNSA estimated that this effort would cost about $1.55 billion for fiscal years 2001 through 2007. According to NNSA, LANL produced 11 pits in 2007, eight of which were W88 war reserve pits, and spent about $1.29 billion for fiscal years 2001 through 2007. However, GAO found that NNSA did not establish clear, consistent goals for the number of W88 war reserve pits it planned to produce. Specifically, some NNSA documents, including budget requests to Congress, called for delivering 10 W88 war reserve pits per year starting in 2007. In addition, NNSA's cost estimate did not include estimates for a variety of activities that directly and indirectly supported the pit manufacturing mission at LANL between 2001 and 2007. These support activities, which included scientific experiments and facility operations and maintenance, totaled over $1 billion.

Because of three major constraints on pit manufacturing operations at LANL, NNSA will not be able to substantively increase its current pit manufacturing capacity for the foreseeable future. Specifically, GAO found that LANL's building for performing analytical chemistry, which deals with the separation and identification of the components in a pit sample, has major operational and structural limitations. LANL's ability to store pits and associated waste is also constrained by limited vault storage space. Finally, a lack of available floor space in LANL's main nuclear facility limits its ability to install a large-scale, efficient production line for manufacturing pits.

NNSA's plans for future pit manufacturing are still being developed and, as a result, no reliable cost estimates exist. Originally, NNSA and the Department of Defense (DOD) had planned to develop the capability to produce RRW pits beginning about 2014, pending the outcome of a RRW design definition and cost study in 2008. However, in fiscal year 2008 all of NNSA's RRW funding was eliminated. While NNSA and DOD continue to support the RRW program, in the short run, NNSA plans to maintain the existing pit manufacturing capability at LANL. Over the long term, NNSA is planning, with DOD's concurrence, to upgrade the existing LANL facility to achieve a production capacity of up to 80 pits per year. However, NNSA has not established a cost and schedule baseline to support its projected effort.