

Why GAO Did This Study

NNSA conducts enriched uranium activities—including producing components for nuclear warheads—at the Y-12 National Security Complex in Tennessee. NNSA has identified key shortcomings in the Y-12 plant's current uranium operations, including rising costs due to the facility's age. In 2004, NNSA decided to build a new facility—the UPF—to consolidate and modernize its enriched uranium activities. In July 2012, the UPF contractor concluded that the UPF's processing equipment would not fit into the facility as designed, and that addressing this issue—which NNSA refers to as a “space/fit” issue—would cost an additional \$540 million.

The Fiscal Year 2013 National Defense Authorization Act mandated that GAO periodically assess the UPF. This is the fourth report, and it assesses (1) factors NNSA identified that contributed to the UPF space/fit issue and (2) actions, if any, NNSA and the UPF contractor have taken to address the space/fit issue.

GAO reviewed NNSA and contractor documents, visited the Y-12 plant, interviewed NNSA and UPF contractor representatives, and observed the computer model NNSA and the UPF contractor use to track space usage within the facility.

GAO is not making any new recommendations. In commenting on a draft of this report, NNSA generally agreed with GAO's findings.

NUCLEAR WEAPONS

Some Actions Have Been Taken to Address Challenges with the Uranium Processing Facility Design

What GAO Found

In January 2013, the National Nuclear Security Administration (NNSA) completed a review to identify the factors that contributed to the space/fit issue with the Uranium Processing Facility (UPF), and identified a number of factors within both NNSA and the contractor managing the UPF design at that time. NNSA's review identified shortcomings in 1) federal oversight of the project, 2) design integration, 3) communications, and 4) the UPF contractor's management processes and procedures. For example, NNSA determined that it did not have adequate federal staff to perform effective oversight of the project, and that the design inputs for the computer model the contractor used to allocate and track space utilization within the facility were not well integrated. NNSA also found that communications shortcomings occurred because the contractor did not always provide timely notification to the NNSA project office of emerging concerns, and that the contractor's management processes and procedures did not formally identify, evaluate, or act on technical concerns in a timely manner.

NNSA and the UPF contractor took actions to address the factors that contributed to the space/fit issue, and NNSA has begun to share lessons learned from the space/fit issue, consistent with both Department of Energy (DOE) guidance and GAO's prior recommendation to ensure that future projects benefit from lessons learned. Specifically, NNSA has taken actions to improve its oversight of the project by increasing federal staffing levels for the UPF project office from 9 full-time equivalents (FTE) in 2012 to more than 50 FTEs as of January 2014. According to NNSA officials, these additional staff enabled NNSA to conduct more robust oversight of the contractor's design efforts than was previously possible. The contractor also took steps to better integrate the efforts of the four subcontractors that are conducting design and engineering work on different elements of the facility. For example, in late 2012 the contractor hired an engineer to integrate the subcontractors' design work and ensure that all design changes were incorporated into the contractor's computer model. The contractor also improved design integration by developing a monthly assessment process to evaluate and report on space utilization in the facility. In addition, according to an NNSA official, communications between NNSA and the contractor significantly improved after the space/fit issue was identified as the contractor kept NNSA better informed of emerging concerns and its plans to address them. The contractor also developed formal management processes for identifying and tracking the status of major technical and engineering issues. For example, the contractor implemented processes for tracking the identification and resolution of both technical and non-technical issues during the design process. In addition, NNSA has recently begun to share lessons learned from the space/fit issue, consistent with DOE guidance and our prior recommendation to ensure that future projects benefit from lessons learned. For example, in July 2014, the UPF federal project director conducted a presentation on lessons learned from the UPF project, including lessons learned from the space/fit issue, at a training session for NNSA federal project directors.