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NUCLEAR WASTE

DOE Needs to Improve Cost Estimates for Transuranic Waste Projects at Los Alamos

GAO Highlights

Highlights of GAO-15-182, a report to congressional requesters

Why GAO Did This Study

Nuclear weapons activities at LANL have generated large quantities of TRU waste that must be disposed of properly. To address a 2005 cleanup agreement with the state of New Mexico requiring DOE to close LANL's TRU waste site, NNSA is to oversee two TRU waste projects. The first is to remove the waste stored at LANL and ship it to WIPP for permanent disposal. The second is to construct a facility—the TWF—to provide new capabilities for managing newly generated TRU waste at LANL. NNSA has developed cost estimates for both projects.

GAO was asked to review cost estimates for the TRU waste projects at LANL. This report examines (1) the extent to which NNSA's TRU waste removal project at LANL has met its cost estimates and (2) the extent to which NNSA's cost estimate for the TWF met best practices for a reliable estimate. GAO reviewed spending data for the TRU waste removal project for fiscal years 2006 through 2014 and the cost estimates for both projects, compared the cost estimate for the TWF with best practices, and interviewed agency officials.

What GAO Recommends

GAO recommends that DOE revise the cost estimate for the TRU waste removal project to reflect the current understanding of project conditions and update the TWF's cost estimate to allow better management of the project's life-cycle costs going forward. DOE generally agreed with GAO's recommendations.

View GAO-15-182. For more information, contact David C. Trimble at (202) 512-3841or trimbled@gao.gov.

What GAO Found

The National Nuclear Security Administration's (NNSA) project to remove transuranic (TRU) waste—primarily discarded equipment and soils contaminated with certain radioactive material—at Los Alamos National Laboratory (LANL) did not meet its cost estimates. At the end of fiscal year 2014, NNSA had spent about $931 million on the project, exceeding its 2006 estimate of $729 million by $202 million. Under current plans, the project is also expected to exceed its 2009 estimate. NNSA did not meet its cost estimates, in part, because they were based on aggressive funding assumptions designed to meet the completion dates agreed to in a 2005 cleanup agreement, which the Department of Energy (DOE) did not fully fund. At the time of GAO's review, NNSA was developing a new project completion cost estimate of about $1.6 billion, with completion projected for October 2022. NNSA had not revised the project's cost estimate since 2009 because the agency was reluctant to approve an estimate with a completion date that conflicted with the 2005 cleanup agreement. However, according to an NNSA official, NNSA's new estimate may not reflect current conditions—partly because of uncertainty created by funding and the indefinite suspension of shipments of TRU waste to the permanent repository at DOE's Waste Isolation Pilot Plant (WIPP) after a radioactive release closed WIPP in February 2014. By revising the estimate to include the current understanding of project conditions, including the uncertainty at WIPP, NNSA program managers can, for example, more accurately identify cost overruns.

NNSA's cost estimate for the TRU Waste Facility (TWF), which consisted of separate cost estimates for completing construction and for operations and maintenance, partially reflected each of the four characteristics of a reliable estimate (comprehensive, well-documented, accurate, and credible) as established by best practices. For example, NNSA's estimate was partially well-documented by clearly documenting the data sources and methodology used to develop the construction estimate. However, NNSA did not sufficiently document the approach used to develop the operations and maintenance estimate, which represented about 74 percent of the TWF's life-cycle costs, because DOE's project management order does not require these costs to be documented when a project is approved to request funding from Congress for construction. As a result, GAO could not determine whether the cost-estimating approach was appropriate. In addition, NNSA's estimate was partially credible because NNSA completed an independent cost estimate (ICE) that provided an unbiased cross-check of the construction estimate consistent with best practices, but it did not include the operations and maintenance costs in the ICE because it was not required by DOE's project management order. Moreover, NNSA did not conduct a sensitivity analysis to quantify variations in the TWF's cost estimates due to changes in key assumptions because it was not required by DOE, which also affected the estimate's credibility. Doing a sensitivity analysis increases the chance that decisions for the TWF will focus on the elements that have the greatest effect on cost, according to best practices. Updating the TWF's cost estimate to include all life-cycle costs and needed analyses, would provide NNSA more reliable information for better managing the TWF as it prepares for the start of operations, which NNSA expects could be as early as April 2016.