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NUCLEAR WASTE

Absence of Key Management Reforms on Hanford's Cleanup Project Adds to Challenges of Achieving Cost and Schedule Goals

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Highlights

Highlights of GAO-04-611, a report to the Committee on Government Reform, House of Representatives

Why GAO Did This Study

The Department of Energy's (DOE) Hanford Site in Washington State houses DOE's largest and most complex nuclear cleanup project—treating and preparing for disposal 55 million gallons of high-level radioactive waste. In 2000, DOE awarded an 11-year, $4.3 billion contract to design, construct, and test treatment facilities at Hanford. GAO was asked to review (1) efforts to accelerate the project's completion, (2) implementation on this project of agencywide management reforms, and (3) the challenges resulting from any unimplemented reforms.

What GAO Recommends

GAO recommends that DOE (1) follow more closely its project management guidance when acquiring complex nuclear waste treatment plants, especially by avoiding a fast-track, concurrent design-build approach, and (2) develop and provide to Congress a plan that includes an estimate of the costs and time frames needed to treat and dispose of DOE's high-level tank wastes if most of these wastes must be disposed of in an underground high-level waste repository. In commenting on the report, DOE generally agreed with the recommendations, including improving its cost estimates, but was unwilling to develop an alternative treatment plan for high-level waste until the legal issues are decided. GAO believes that any cost estimate DOE develops should be based on a specific plan.

www.gao.gov/cgi-bin/getrpt?GAO-04-611.

To view the full product, including the scope and methodology, click on the link above. For more information, contact Robin M. Nazzaro at (202) 512-3841 or nazzaror@gao.gov.

What GAO Found

DOE's initial approach called for treating 10 percent of the site's high-level waste by 2018 and for operating the plant until treatment was completed in 2046—well past a regulatory deadline to complete treatment by 2028. In 2002, DOE decided to accelerate cleanup by about 20 years and reduce the project's $56 billion cost by $20 billion. In the short term, however, several factors, including the accelerated approach and contractor performance problems, have lengthened construction time and raised contract costs by $1.4 billion to $5.7 billion.

Because of long-standing problems that preceded Hanford's contract, DOE has instituted reforms in both contract and project management. DOE's 2000 Hanford contract implemented the contract performance reforms, including linking contractor fees to cost and schedule performance. The contract did not, however, implement project management reforms, such as an overall plan to accomplish waste treatment by the regulatory deadline.

Not implementing project management reforms at the outset has added to the risks in cleaning up Hanford's tank waste. First, to start quickly, DOE committed to a "fast-track" process in which design, technology development, and construction are performed concurrently on different aspects of the project. For projects of Hanford's complexity, this approach is not compatible with controlling costs and schedules. Second, DOE has delayed completing analyses needed to determine the most cost-effective approach to waste separation and may have missed savings opportunities of at least $50 million a year. Third, DOE has not adequately defined or communicated the potential effects of a legal challenge to its overall plan for minimizing how much high-level waste is disposed of in an underground repository. Unless effectively managed, an adverse legal outcome could increase project costs by tens of billions of dollars.

High-level Vitrification Plant at Hanford's Waste Treatment Construction Site, March 2004

Source: DOE photo.