

GAO Highlights

Highlights of [GAO-19-494](#), a report to the Subcommittee on Strategic Forces, Committee on Armed Services, U.S. Senate

Why GAO Did This Study

Decades of defense activities at DOE's Idaho National Laboratory produced two forms of waste that EM has managed as HLW: liquid SBW and granular calcine waste. Under an agreement with the state, DOE must treat the waste to prepare it for removal from Idaho by 2035. Construction on the IWTU, EM's facility to treat such waste, was completed in 2012, but initial testing of the SBW treatment process revealed design problems. EM has since been working to reengineer the IWTU. Total project construction and reengineering expenditures have reached nearly \$1 billion as of February 2019.

GAO was asked to review EM's efforts to treat and dispose of the SBW and calcine waste. This report examines (1) the extent to which EM's management of the IWTU follows selected project management best practices; (2) challenges EM faces in disposing of the SBW; and (3) challenges EM faces in treating and disposing of the calcine waste.

GAO reviewed agency documents and IWTU project data from March 2017 through February 2018, analyzed EM project management efforts against selected project management best practices for cost and schedule, and interviewed DOE officials.

What GAO Recommends

GAO is making five recommendations, including that DOE develop a strategy for the disposal of the waste. DOE generally agreed with all of these recommendations.

View [GAO-19-494](#). For more information, contact David C. Trimble at (202) 512-3841 or trimbled@gao.gov.

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NUCLEAR WASTE CLEANUP

DOE Faces Project Management and Disposal Challenges with High-Level Waste at Idaho National Laboratory

What GAO Found

The Department of Energy's (DOE) Office of Environmental Management (EM) has not fully followed selected project management best practices in managing the reengineering of the Integrated Waste Treatment Unit (IWTU), shown in the figure, to treat 900,000 gallons of liquid sodium-bearing waste (SBW) that must be solidified for disposal. EM's cost and schedule estimates for IWTU reengineering did not fully meet selected best practices for cost (i.e., did not account for all costs) and schedule estimates (e.g., did not have a valid critical path). For example, EM did not follow best practices for a comprehensive cost estimate because EM did not include both government and contractor costs over the entire project. As of February 2019, EM has experienced approximately \$64 million in added costs and a more than 1-year delay in IWTU reengineering. Without fully following best practices for cost and schedule estimates, EM is at risk of future cost overruns and delays in meeting its target disposal milestones.

The Department of Energy's Integrated Waste Treatment Unit at Idaho National Laboratory



Source: Fluor-Idaho, LLC. | GAO-19-494

Based on GAO's review of EM documents, EM faces challenges with its plans for SBW disposal at its preferred disposal site, the Waste Isolation Pilot Plant (WIPP), an underground repository for waste contaminated by nuclear elements, near Carlsbad, New Mexico. These challenges include a statutory prohibition on the disposal of high-level waste (HLW) at WIPP. Further, EM does not have a strategy or timeline to address these challenges or to identify an alternative disposal pathway. Without such a strategy or timeline, EM risks not meeting its commitments with Idaho to prepare the SBW for removal from the state by 2035.

EM faces challenges implementing its selected technology to further treat 1.2 million gallons of granular calcine waste and selecting a potential waste disposal pathway. For example, DOE has identified challenges with retrofitting the IWTU for calcine waste treatment. As a result, EM is deferring further development of its plans to treat the calcine waste. EM officials said that the agency is making progress toward calcine waste disposal by testing options for removing the waste from its storage bins, a precursor to treating or packaging the waste for disposal. However, EM does not have a strategy or timeline for determining its next steps for the treatment and disposal of calcine waste. Such a strategy could help EM in seeking alternatives to its selected treatment technology and provide assurance that it will meet its commitments with Idaho for removing calcine waste from the state by the end of 2035.