

GAO Highlights

Highlights of [GAO-17-174](#), a report to congressional addressees.

Why GAO Did This Study

DOE had long planned to store defense and commercial nuclear waste in a single repository at Yucca Mountain, Nevada, funded largely from commercial power fees. In 2010, DOE terminated this plan, and then considered developing separate defense and commercial repositories. This approach requires a Presidential finding under the NWPA. In 2015, DOE provided information to the President supporting separate repositories and cited several benefits, including cost efficiencies. On the basis of this information, the President in 2015 reversed a 1985 presidential finding and determined that a separate repository for defense waste was required, setting DOE down the path of developing separate repositories. Taxpayers would likely fund a defense waste repository rather than industry fees. GAO reviewed DOE's efforts to develop a separate defense waste repository. This report assesses (1) the information on benefits DOE provided to the President; (2) the reliability of DOE's cost and schedule estimates; and (3) DOE's efforts to site a defense HLW repository. GAO reviewed DOE documents and interviewed more than 50 experts.

What GAO Recommends

GAO recommends that DOE (1) assess benefits, costs, and schedule estimates, and (2) reassess its decision to conduct site selection activities. DOE agreed on the need for a more thorough assessment, but disagreed on the need to reassess site selection activities, citing benefits of its approach. GAO continues to believe its recommendation is valid, as discussed in the report.

View [GAO-17-174](#). For more information, contact David Trimble at (202) 512-3841, trimbled@gao.gov

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NUCLEAR WASTE

Benefits and Costs Should Be Better Understood Before DOE Commits to a Separate Repository for Defense Waste

What GAO Found

The information that the Department of Energy (DOE) provided to the President about whether a separate defense waste repository was required did not quantify cited benefits, when possible, show how these benefits could be achieved, or show the risks if certain benefits could not be realized as planned. In the information provided to the President, DOE stated that separate repositories for defense high-level waste (HLW) and commercial spent nuclear fuel (SNF) would produce certain benefits. DOE cited benefits in each area required by the Nuclear Waste Policy Act (NWPA)—cost efficiency, public acceptability, regulation, transportation, national security, and health and safety—in concluding that there is a strong basis for a defense HLW repository. Federal guidance states that benefits must be quantified when possible, and that the risk that a benefit may not be realized as planned should be factored into the cost-benefit analysis. DOE officials said their plan was still conceptual and the guidance did not yet apply. Nevertheless, DOE did not show that benefits outweighed costs in recommending to the President that the nation should depart from its longstanding nuclear waste strategy.

DOE's preliminary cost and schedule estimates for the two-repository approach that it provided to the President are not reliable because the estimates do not meet industry best practices. DOE's cost estimates excluded major costs, such as site selection and site characterization costs that could add tens of billions of dollars. Regarding its schedule estimates, DOE did not provide information on how its schedules would be achieved. GAO found that DOE's estimates leave little time for major activities and that DOE's schedule appears optimistic, given its past repository siting experiences. Without reliable estimates that reflect best practices, DOE provided information to the President that supported a decision that could commit the nation to expending undisclosed but significant future resources and to a time frame that appears optimistic.

DOE is planning to develop a process to obtain consent for an eventual repository site; however, DOE faces significant public opposition and certain prerequisites have not yet been established. These prerequisites include updated health and safety regulations, which are necessary for the public to consider as part of a consent-based siting process. Without updated health and safety regulations, which establish radiation exposure limits, the public cannot provide meaningful input into a consent-based siting process and local communities cannot effectively be engaged in hosting potential repository sites. DOE officials acknowledge that health and safety regulations—which were developed in the 1980s—need to be updated and revised for any future defense HLW or mostly commercial SNF repository. Revising such regulations is the responsibility of other federal agencies. Experts and stakeholders told GAO that updated health and safety regulations are a precondition for having discussions with the public and for screening potential sites. An internal project management requirement directs DOE to perform key “preconceptual” planning activities to enhance front-end planning. In proceeding with siting activities without ensuring key prerequisites have been established, DOE runs the risk of increasing public opposition and potentially wasting resources.