

## Why GAO Did This Study

Spent nuclear fuel—considered very hazardous—is accumulating at commercial reactor sites in 33 states. The Nuclear Waste Policy Act of 1982, as amended, directs the Department of Energy (DOE) to dispose of this waste in a repository at Yucca Mountain, Nevada. In June 2008, DOE submitted a license application for the repository, but in March 2010 moved to withdraw it. However, the Nuclear Regulatory Commission (NRC) or the courts—as a result of lawsuits—could compel DOE to resume the licensing process.

This report examines (1) the basis for DOE's decision to terminate the Yucca Mountain program, (2) the termination steps DOE has taken and their effects, (3) the major impacts if the repository were terminated, and (4) the principal lessons learned. GAO reviewed documents and interviewed knowledgeable parties.

## What GAO Recommends

GAO suggests that Congress consider whether a more predictable funding mechanism would enhance future efforts and whether an independent organization would be more effective. GAO also recommends that DOE assess remaining risks of the shutdown; create a plan to resume licensing if necessary; and report on federal property and its disposition. NRC concurred with the facts in a draft of this report, but DOE strongly disagreed with the draft and the recommendations, questioning the veracity of GAO's information. GAO continues to believe its findings and recommendations are sound.

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# COMMERCIAL NUCLEAR WASTE

## Effects of a Termination of the Yucca Mountain Repository Program and Lessons Learned

## What GAO Found

DOE decided to terminate the Yucca Mountain repository program because, according to DOE officials, it is not a workable option and there are better solutions that can achieve a broader national consensus. DOE did not cite technical or safety issues. DOE also did not identify alternatives, but it did create a Blue Ribbon Commission to evaluate and recommend alternatives.

Amid uncertainties about the status of the repository license, DOE took an ambitious set of steps to dismantle the Yucca Mountain program by September 30, 2010. DOE has taken steps to preserve scientific and other data, eliminated the jobs of all federal employees working on the program, and terminated program activities by contractors. DOE also disposed of property from its Las Vegas offices by declaring the property abandoned. This procedure saved DOE time and costs, according to officials. However, DOE's documentation for this process was limited, given the variety and volume of property disposed of. In addition, DOE did not finalize a plan for the shutdown, nor did it identify or assess risks of the shutdown. Both steps are required under federal internal control standards and DOE orders. Some of DOE's shutdown steps would likely hinder progress, should NRC or the courts require DOE to resume the license application review process.

Terminating the Yucca Mountain repository program could bring benefits, such as allowing DOE to search for a more acceptable alternative, which could help avoid the costly delays experienced by Yucca Mountain. However, there is no guarantee that a more acceptable or less costly alternative will be identified; termination could instead restart a costly and time-consuming process to find and develop an alternative permanent solution. It would also likely prolong the need for interim storage of spent nuclear fuel at reactor sites, which would have financial and other impacts. For example, the federal government bears part of the storage costs as a result of industry lawsuits over DOE's failure to take custody of commercial spent nuclear fuel in 1998, as required. These costs exceed \$15.4 billion and could grow by an additional \$500 million a year after 2020.

Published reports and our interviews—with federal, state, and local government officials and representatives of various national organizations—suggest two broad lessons for developing a future waste management strategy. First, social and political opposition to a permanent repository, not technical issues, is the key obstacle. Important tools for overcoming such opposition include transparency, economic incentives, and education. Second, it is important that a waste management strategy have consistent policy, funding, and leadership, especially since the process will likely take decades. Some federal and other stakeholders suggested that a more predictable funding mechanism and an independent organization may be better suited than DOE to overseeing nuclear waste management.