

## Why GAO Did This Study

The future of the Yucca Mountain project in Nevada—originally designated for permanent storage of nuclear waste—is uncertain. Since 1983, the Department of Energy (DOE) has spent billions of dollars to evaluate the Yucca Mountain site for potential use as a nuclear waste repository. In February 2010, the President proposed eliminating funding for the project, and in March 2010, DOE filed a motion to withdraw its license application. Stakeholders—federal officials, state and local government officials, private companies, and others—have expressed interest in whether the site’s characteristics are suitable for alternative uses.

GAO was asked to examine alternative uses for the Yucca Mountain site. This report examines: (1) the characteristics of the Yucca Mountain site; (2) stakeholders’ proposed alternative uses, and experts’ evaluations of them; and (3) challenges, if any, in pursuing alternative uses. We selected a nonprobability sample of experts that included experts affiliated with nationally recognized research organizations, universities, and national laboratories, and that did not represent or benefit from any of the stakeholders’ proposed alternative uses of the site. Using a data collection instrument, we elicited comments from these experts on stakeholders’ proposed uses. The alternative uses discussed in this report reflect the alternative uses these stakeholders proposed; they may not reflect all potential uses of the site. This report contains no recommendations. Interior generally agreed with our findings, while DOE, the U.S. Air Force, and NRC neither agreed nor disagreed.

View [GAO-11-847](#) or key components. For more information, contact Frank Rusco at (202) 512-3841 or [ruscof@gao.gov](mailto:ruscof@gao.gov).

## YUCCA MOUNTAIN

### Information on Alternative Uses of the Site and Related Challenges

## What GAO Found

The Yucca Mountain site has several geographical, structural, and geophysical characteristics that may be relevant in considering potential alternative uses. Geographically, the site spans a large land area in a remote part of Nevada and partially includes some of the lands of two adjacent highly-secure national security sites—the Air Force’s Nevada Test and Training Range and DOE’s Nevada National Security Site. The site’s lands were historically under the control of three federal agencies: DOE, the Department of Defense, and the Bureau of Land Management (BLM) under the Department of the Interior. The most notable structural features include two large tunnels—one about 5 miles long and 25 feet in diameter, and another 2 miles long that branches off of the main tunnel. Geophysically, the Yucca Mountain area is semiarid and has little surface water; is comprised of strong, very low permeability volcanic rock; and is located in an area with low levels of seismic activity.

Stakeholders we contacted proposed 30 alternative uses of the Yucca Mountain site; however, there was no broad consensus regarding the benefits and challenges of these uses among the experts we consulted. The alternative uses span five broad categories: (1) nuclear or radiological uses, such as locating a nuclear reprocessing complex at or near the site; (2) defense or homeland security activities, such as testing systems to detect and identify radioactive materials; (3) information technology uses, such as secure electronic data storage; (4) energy development or storage, such as using the site for renewable energy development; and (5) scientific research, such as geology or mining research. While some experts we contacted identified benefits of the site for certain uses, experts also noted that many of these proposed uses would be costly and may face significant challenges. Several experts also noted that Yucca Mountain’s characteristics would not be critical to a number of the proposed uses, and that many could be undertaken elsewhere.

Alternative uses of the Yucca Mountain site face a number of legal and administrative challenges. First, DOE’s withdrawal of its application to build a repository at Yucca Mountain is subject to continuing legal proceedings, and resolution of these proceedings could preclude or significantly delay alternative uses of the site. Second, potential litigation regarding mining claims may affect alternative uses of the site. Following the 2010 expiration of a land withdrawal order, 35 mining claims were recorded and processed by BLM. Although BLM declared these claims void in August 2011, their legitimacy could be litigated, which could delay or pose challenges to alternative uses of the site. Third, because control of the site is divided among three different federal agencies, potential alternative uses may face challenges related to management of the site’s lands. Fourth, potential alternative uses of the site may be limited by national security activities that currently take place on adjacent lands. Fifth, as with any activity, proposed uses of the site will require the user to comply with applicable federal and state regulations.