

GAO Highlights

Highlights of [GAO-16-121T](#), a testimony before the Subcommittee on Environment and the Economy, Committee on Energy and Commerce, House of Representatives

Why GAO Did This Study

Spent nuclear fuel—the used fuel removed from commercial nuclear power reactors—is an extremely harmful substance if not managed properly. The nation’s inventory of spent nuclear fuel has grown to about 72,000 metric tons currently stored at 75 sites in 33 states, primarily where it was generated.

Under the Nuclear Waste Policy Act of 1982, DOE was to investigate Yucca Mountain, a site about 100 miles northwest of Las Vegas, Nevada, for the disposal of spent nuclear fuel. DOE terminated its work at Yucca Mountain in 2010 and now plans to transport the spent nuclear fuel to interim storage sites beginning in 2021 and 2024, then to a permanent disposal site by 2048. Transportation of spent nuclear fuel is a major element of any policy adopted to manage and dispose of spent nuclear fuel.

This testimony discusses three key challenges related to transporting spent nuclear fuel: legislative, technical, and societal. It is based on reports GAO issued from November 2009 to October 2014.

What GAO Recommends

GAO is making no new recommendations.

View [GAO-16-121T](#). For more information, contact Frank Rusco at (202) 512-3841 or ruscof@gao.gov.

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SPENT NUCLEAR FUEL

Legislative, Technical, and Societal Challenges to Its Transportation

What GAO Found

Based on its prior work, GAO found three key challenges related to the transportation of spent nuclear fuel: legislative, technical, and societal.

- **Legislative challenges.** As GAO reported in November 2009, August 2012, and October 2014, DOE does not have clear legislative authority for either consolidated interim storage or for permanent disposal at a site other than Yucca Mountain. Specifically, provisions in the Nuclear Waste Policy Act of 1982 that authorized the Department of Energy (DOE) to arrange for consolidated interim storage have either expired or are unusable. For permanent disposal, GAO reported in October 2014 that the amendments to the Nuclear Waste Policy Act of 1982 directed DOE to terminate work on sites other than Yucca Mountain. Without clear authority, DOE cannot site an interim storage or permanent disposal facility and make related transportation decisions for commercial spent nuclear fuel.
- **Technical challenges.** As GAO reported in October 2014, experts identified technical challenges that could affect the transportation of spent nuclear fuel. These challenges could be resolved, but it would take time and could be costly. Specifically, GAO reported that there were uncertainties about the safety of transporting what is considered to be high burn-up spent nuclear fuel—newer fuel that burns longer and at a higher rate than older fuel—because of potential degradation while in storage. GAO also reported that guidelines for storage of spent nuclear fuel allow higher temperatures and external radiation levels than guidelines for transportation, rendering some spent nuclear fuel not readily transportable. In addition, GAO reported that the current transportation infrastructure, particularly for a mostly rail option of transportation—which is DOE’s preferred mode—may not be adequate without procuring new equipment and costly and time-consuming upgrades on the infrastructure.
- **Societal challenges.** As GAO reported in October 2014, public acceptance is key for any aspect of a spent nuclear fuel management and disposition program—including transporting it—and maintaining that acceptance over the decades needed to implement a spent fuel management program is challenging. In that regard, GAO reported that in order for stakeholders and the general public to support any spent nuclear fuel program—particularly one for which a site has not been identified—there must be a broad understanding of the issues associated with management of spent nuclear fuel. Also, GAO found that some organizations that oppose DOE have effectively used social media to promote their agendas to the public, but that DOE had no coordinated outreach strategy, including social media. GAO recommended that DOE develop and implement a coordinated outreach strategy for providing information to the public on their spent nuclear fuel program. DOE generally agreed with GAO’s recommendation.