# THE COMMITTEE ON ENERGY AND COMMERCE

## MEMORANDUM

July 29, 2013

To: Subcommittee on Environment and the Economy

From: Committee Majority Staff

Subject: Hearing Entitled: "Oversight of DOE's Strategy for the Management and Disposal of Used Nuclear Fuel and High-Level Radioactive Waste."

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On Wednesday, July 31, 2013, at 2:00 p.m. in 2123 Rayburn House Office Building, the Subcommittee on Environment and the Economy will conduct a hearing entitled: "Oversight of DOE's Strategy for the Management and Disposal of Used Nuclear Fuel and High-Level Radioactive Waste." The hearing will focus on the Department of Energy's (DOE) "Strategy for the Management and Disposal of Used Nuclear Fuel and High-level Radioactive Waste" (the Strategy) issued in January of this year.[1]

### I. Witness

The Honorable Ernest J. Moniz
Secretary
U.S. Department of Energy

### II. Background

For nearly 70 years, the United States has been accumulating high-level radioactive waste by using nuclear materials to power naval vessels, to make nuclear weapons, and to produce electricity. The inventory of used nuclear fuel currently is held at 75 sites in 33 States, and consists of over 65,000 metric tons from commercial nuclear power generation. This inventory increases by about 2,000 metric tons per year.[2]

According to GAO estimates, the national inventory of high-level radioactive waste and spent nuclear fuel used for defense purposes is approximately 13,000 metric tons, stored at five sites, as of 2011.[3]

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[1] Available at http://energy.gov/downloads/strategy-management-and-disposal-used-nuclear-fuel-and-high-level-radioactive-waste.

[2] See *Spent Nuclear Fuel: Commercial Reactors Present Storage and Other Challenges.* GAO 12-797 August 2012. In addition there are research reactors at other DOE sites (such as National Labs) or non-DOE sites (such as universities) that also produce spent nuclear fuel. In all, DOE reports that there are 121 sites in 39 states that have SNF. See *Commercial Nuclear Waste: Effects of a Termination of the Yucca Mountain Repository Program and Lessons Learned*, GAO-11-229 April 8, 2011, page 7.

[3] The Hanford site in Washington state, the Savannah River Site in South Carolina, Idaho National laboratory in Idaho, the Fort St. Vrain Site in Colorado, and the West Valley site in New York. See *DOE Nuclear Waste: Better*

Thirty years ago, Congress began addressing concerns regarding the management of the nation's growing stockpile of nuclear waste by directing DOE to develop a system to collect and provide for the safe and final disposal of spent nuclear fuel and high-level radioactive waste. The Nuclear Waste Policy Act of 1982, as amended (NWPA), requires DOE to take title to, remove, and transport spent nuclear fuel from commercial reactor sites to a permanent geologic repository or an interim storage facility before permanent disposal. NWPA also directs defense-related high-level waste and spent fuel to the same repository. Development of the repository would be paid for by the Nuclear Waste Fund (NWF), which is funded by ratepayers of nuclear-generated electricity.

NWPA's statutory framework governs the establishment of the permanent geologic nuclear waste repository and requires the participation of the President, Congress, the Secretary of Energy, DOE, and the Nuclear Regulatory Commission (NRC). As the Congressional Research Service explains, Congress established through NWPA a scientifically based multi-stage statutory process for selecting the eventual site of the nation's permanent geologic repository.[4]

In 1987, after DOE conducted studies of nine potential repository sites located throughout the United States, Congress amended the NWPA and selected the Yucca Mountain site in Nye County, Nevada, as the only site for further study for the first national repository. Taking into account, both pre-closure and post-closure concerns, DOE evaluations found Yucca Mountain consistently ranked at or near the top of the sites evaluated.[5]

In 2002, following extensive evaluation of the site by DOE and its national laboratories, the Secretary of Energy determined Yucca Mountain was suitable for repository development and recommended the President approve the site for development. Under the NWPA, Nevada submitted a notice of disapproval. Congress overrode the objection, and Congress passed and the President signed Public Law 107-200, which approved Yucca Mountain as the site for the nation's repository.

On June 3, 2008, after additional scientific and engineering studies on development and design, DOE submitted a license application to the NRC seeking construction authorization for the repository at Yucca Mountain. NRC docketed the license application in September 2008 and was directed, pursuant to the NWPA, to conduct its review within four years. The NRC then commenced a two-pronged review of the application: (1) a technical licensing review by the NRC staff to assess the technical merits of the repository design and to formulate a position on whether to issue a construction authorization for the repository and (2) adjudicatory hearings by the NRC's Construction Authorization Board to consider technical and legal challenges to the application. The Commission, based on a staff Safety Evaluation Report and the Board hearings, is to determine whether to authorize construction of the repository based solely on the technical merits.

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*Information Needed on Waste Storage at DOE Sites as a Result of Yucca Mountain Shutdown*, GAO-11-230 March 23, 2011.

[4] For additional background: see "Closing Yucca Mountain: Litigation Associated with Attempts to Abandon the Planned Nuclear Waste Repository" Congressional Research Service, March 4, 2011 (R41675).

[5] See Recommendation By the Secretary of Energy of Candidate Sites for Site Characterization For the First Radioactive-Waste Repository, DOE/S-0048, May 1986.

The President in his FY2011 budget proposal in February 2010 cut funding for Yucca Mountain with the statement that:

> . . . [T]he Administration has determined that Yucca Mountain, Nevada, is not a workable option for a waste repository and will discontinue its program to construct a repository at the mountain in 2010. The Department will carry out its responsibilities under the Nuclear Waste Policy Act within the Office of Nuclear Energy as it develops a new nuclear waste management strategy.[6]

On January 29, 2010, DOE Secretary Steven Chu announced the creation of the Blue Ribbon Commission (BRC) on America's Nuclear Future to conduct a comprehensive review of policies for managing the back end of the nuclear fuel cycle and recommend a new strategy. In March 2010, asserting that the Secretary of Energy "has decided that a geologic repository at Yucca Mountain is not a workable option for long-term disposition" of nuclear waste, DOE filed a motion with the NRC's Construction Authorization Board to withdraw the license application. The Construction Authorization Board denied DOE's motion, a decision ultimately upheld by the Commission on September 9, 2011. Meanwhile, on October 4, 2010, the NRC effectively suspended its review of the license application, one month prior to the scheduled release of a key report regarding the long-term safety of the repository.[7]

On January 26, 2012, the BRC issued a report detailing the following conclusions:[8]

1. A new, consent-based approach to siting future nuclear waste management facilities.
2. A new organization dedicated solely to implementing the waste management program and empowered with the authority and resources to succeed.
3. Access to the funds nuclear utility ratepayers are providing for the purpose of nuclear waste management.
4. Prompt efforts to develop one or more geologic disposal facilities.
5. Prompt efforts to develop one or more consolidated storage facilities.
6. Prompt efforts to prepare for the eventual large-scale transport of spent nuclear fuel and high-level waste to consolidated storage and disposal facilities when such facilities become available.
7. Support for continued U.S. innovation in nuclear energy technology and for workforce development.
8. Active U.S. leadership in international efforts to address safety, waste management, non-proliferation, and security concerns.

On January 11, 2013, the DOE released its document "Strategy for the Management and Disposal of Used Nuclear Fuel and High-Level Radioactive Waste." The Strategy outlines a 10-year plan, estimated to cost $5.6 billion, that:

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[6] Obama Administration's FY2011 budget proposal, February 2010, OMB, at page 71.
[7] Related litigation is pending before the Court of Appeals for the District of Columbia.
[8] Report to the Secretary of Energy, Blue Ribbon Commission on America's Nuclear Future, January 2012, at page vii. See, also, Hearing before the Subcommittee on Environment and the Economy, February 1, 2012.

- Sites, designs, licenses, constructs, and begins operations of a pilot interim storage facility by 2021, with an initial focus on accepting used nuclear fuel from shut-down reactor sites;
- Advances toward the siting and licensing of a larger interim storage facility to be available by 2025 that will have sufficient capacity to provide flexibility in the waste management system and allows for acceptance of enough used nuclear fuel to reduce expected government liabilities; and
- Makes demonstrable progress on the siting and characterization of repository sites to facilitate the availability of a geologic repository by 2048.

According to the Government Accountability Office, nearly $15 billion has been spent on site characterization and development of Yucca Mountain.[9] Delays in opening this repository pursuant to NWPA resulted in 78 utilities filing lawsuits against DOE to recover the costs of storing used fuel, which were paid out of the Department of Treasury's judgment fund for a total of $2.6 billion in claims.[10] Furthermore, DOE estimates taxpayer liability will amount to $19.7 billion in claims through 2020, which is the date DOE had determined Yucca Mountain could begin disposal operations when it filed the license application in 2008. To date, the program is estimated to have been delayed by eight years, with each year of delay increasing taxpayer liability for DOE's failure to take custody of the used fuel.

## III. Issues

Issues to be examined at the hearing may include:

- Feasibility of and statutory, technical, and economic support for DOE's Strategy;
- Status of DOE's current activities to implement the Strategy.

## IV. Staff Contacts

If you have any questions regarding this hearing, please contact David McCarthy or Annie Caputo of the Majority Committee staff at (202) 225-2927.

[9] See *Commercial Nuclear Waste: Effects of a Termination of the Yucca Mountain Repository Program and Lessons Learned*, GAO-11-229 April 8, 2011, and *DOE Nuclear Waste: Better Information Needed on Waste Storage at DOE Sites as a Result of Yucca Mountain Shutdown*, GAO-11-230 March 23, 2011

[10] See *Spent Nuclear Fuel: Accumulating Quantities at Commercial Reactors Present Storage and Other Challenges*, GAO-12-797 August 15, 2012