

## Nuclear Waste Programs and Strategies

*Witnesses:*

### Panel 1

**The Honorable Peter Lyons**

Assistant Secretary for Nuclear Energy, Department of Energy

**Michael Weber**

Deputy Executive Director, Operations for Materials, Waste, Research, State, Tribal, and Compliance Programs, Nuclear Regulatory Commission

### Panel 2

**Frank Rusco**

Director of Natural Resources and Environment, Energy and Science, Government Accountability Office

**Susan Eisenhower**

Former Member, Blue Ribbon Commission on America's Nuclear Future

**Rodney Ewing**

Chairman, Nuclear Waste Technical Review Board

*Committee Members Present:*

Rodney Frelinghuysen (R-NJ), Chairman

Marcy Kaptur (D-OH), Ranking Member

Mike Simpson (R-ID)

Chaka Fattah (D-PA)

Pete Visclosky (D-IN)

Alan Nunnelee (R-MS)

Chuck Fleischmann (R-TN)

On April 11, 2013, the House Committee on Appropriations Subcommittee on Energy and Water Development held a hearing to receive testimony regarding current, previous, and suggested programs and strategies for addressing the fate of the nation's spent nuclear fuel and high-level radioactive waste.

Subcommittee Chairman Rodney Frelinghuysen (R-NJ) began his opening statement saying that "while Yucca Mountain will not be the sole focus of this hearing, it will underlie many of our questions." He criticized the cessation of the Yucca Mountain repository given the time and funds spent on assessing and developing the site. He discussed President Obama's budget request for fiscal year (FY) 2014 which provided "funding to implement some of the Blue Ribbon Commission's recommendations – recommendations which Congress has not approved, neither in whole or part." The Blue Ribbon Commission on America's Nuclear Future (BRC), was created in 2010 by President Obama "to conduct a comprehensive review of policies for managing the back end of the nuclear fuel cycle and recommend a new plan." He referred to Obama's nuclear waste plans as "little more than a blueprint for dialogue to get past Yucca Mountain." He discussed the nearly \$20 billion in liabilities that the nation must pay to nuclear utilities due to breach of contract under the Nuclear Waste Policy Act of 1982 (NWPA; P.L. 97-425) if the fate of nuclear waste is not addressed.

In her opening statement, Subcommittee Ranking Member Marcy Kaptur (D-OH) noted the far reaching impacts of nuclear waste issues on regions across the country. She stated that "the government must live up to its responsibility and provide for the eventual safe disposal of commercial spent fuel...[and] has an obligation to safely package and store high level radioactive waste generated by the nuclear weapons program." She asked the witnesses to address the "enormous amounts of money" spent on Yucca Mountain and respond to the question, "What do we have to show for that investment?" Kaptur also brought up the new January 2013 Department of Energy (DOE) nuclear waste strategy titled Strategy for the Management and Disposal of Used Nuclear Fuel and High-Level Nuclear Radioactive Waste, "in which we appear to be starting essentially from scratch."

In his testimony, Peter Lyons, assistant secretary for nuclear energy at the DOE, noted "the vital role of nuclear power in the nation's clean energy portfolio and the Administration's support for it." He focused on outlining the Administration's January 2013 strategy for nuclear waste which incorporates recommendations from the BRC. If the new strategy is followed, it "begins operations

of a pilot interim storage facility by 2021, advances toward the siting and licensing of a larger interim storage facility by 2025, and makes demonstrable progress...to facilitate the availability of a geologic repository by 2048." Facilities may be collocated, and comeingle commercial and military waste. He voiced support for a consent-based system and the creation of an organization to deal specifically with issues of nuclear waste. He outlined the president's FY 2014 proposal, which supports "comprehensive funding reform" through proposed budget levels of up to \$200 million, "reclassification of spending," and "access to the balance of the nuclear waste fund when needed." It provides a budget baseline that more accurately "reflects" potential liability costs as well as "funding and authority for the EPA to begin the review and update of generic (non-site specific) disposal standards."

Deputy Executive Director of Operations for Materials, Waste, Research, State, Tribal, and Compliance Programs at the Nuclear Regulatory Commission (NRC) Michael Weber reviewed the NRC's "mission to protect public health and safety, promote the common defense and security, and protect the environment," as well as the "work related to the orderly closure of our licensing review for the proposed repository at Yucca Mountain" in FY 2011 in his testimony. He indicated that the NRC is "awaiting a decision" on pending litigation regarding the closure. He announced that the commission aims to make the draft Waste Confidence environmental impact statement and Temporary Storage Rule available this year. He discussed the NRC's role in ensuring "that spent nuclear fuel is stored, handled, and transported safely and securely through our comprehensive regulatory program, including licensing, oversight, rulemaking, research, incident response, and international cooperation."

Chairman Frelinghuysen began the question and answer period by inquiring about the DOE's activities in FY 2013 regarding "consolidated interim storage and consent-based siting" and on what their \$60 million in funding for "used nuclear fuel disposition activities" is being used. Lyons listed some activities currently underway including assessing geologic formations in a non-site specific manner for information useful to establishing a geologic repository, improving "international cooperation" to learn of work using "different geologic media" for waste repositories, and progressing on borehole disposal research. He claimed that these actions were within authorization as they are not site-specific.

Chuck Fleischmann (R-TN) asked about reprocessing of fuel and technical considerations. Lyons responded that one of the reasons suggested for reprocessing was the possibility of a uranium shortage. However, he noted the U.S. is "not running out of uranium, we certainly have enough for 100 years." He discussed research at Oak Ridge National Laboratory into extraction of uranium from seawater which could offer an "inexhaustible" resource. He stated that "obtaining" uranium from seawater is "a factor of four or five more costly today than mined uranium, but Oak Ridge has already reduced that cost by at least a factor of four to five in just two years."

Much of the discussion with the first panel focused on the monetary losses from investment in Yucca Mountain, litigation payments, and the ability of the DOE and NRC to gain valuable insight from Yucca Mountain to apply when approaching future geologic repositories. They also considered dry as opposed to wet storage of spent fuel.

Lyons stated that "one football field of the order of twelve feet deep would take care of all the waste."

Frank Rusco, director of natural resources and environment for the Government Accountability Office (GAO), explained in his testimony the NWPA directive "to investigate sites for a federal deep geologic repository to dispose of both civilian and defense-related spent nuclear fuel and other high-level nuclear waste." He outlined the work and research done on Yucca Mountain, the BCR's recommendations, and the January 2013 spent nuclear fuel strategy. He discussed the GAO's role in having "issued several reports related to the management of spent nuclear fuel." The reports examined "the safety and security of spent nuclear fuel; the benefits, challenges, and costs of the Yucca Mountain repository and two potential alternatives; lessons learned from the past 30 years of spent nuclear fuel management; alternative uses of the Yucca Mountain site and related challenges; and the challenges of accumulating quantities of spent nuclear fuel at reactor sites." Particularly, between November 2009 and August 2012 GAO studied "key attributes and challenges of options that have been considered for storage or disposal of spent nuclear fuel."

In her testimony, Susan Eisenhower, who served as a member of the BRC, discussed some of the BRC's eight recommendations. She focused on the importance of establishing a federal organization committed to dealing with nuclear waste and employing a consent-based selection process for choosing interim storage and geologic repository locations. She noted, "Our consent-based approach neither includes nor excludes Yucca Mountain." She pointed out that "soon" the U.S. will need a second repository in addition to a first. She stated that the President's January 2013 strategy "embraces the spirit" of the BRC recommendations, but projects completion of a repository taking a "decade or more longer" than the BRC expected. Eisenhower also raised the issue of public concern over transportation, but noted that in 40 years "about 3000 shipments of spent nuclear fuel have navigated more than 1.7 million miles of roads and railways" with no incident of environmental contamination. She advocated for increased public outreach to improve public confidence in waste transport, storage, and disposal.

Chairman of the Nuclear Waste Technical Review Board Rodney Ewing testified that "there is a broad scientific and engineering consensus that a deep mined geologic repository is an appropriate and safe method for the isolation of spent nuclear fuel and high-level radioactive waste from the environment." He noted broad international support for such a geologic repository and referred to establishing a geologic repository in the U.S. as a "top priority." He advocated for a "strong and continuing engagement" between stakeholders such as "local communities, the state, and Native American tribes." He noted that success under a consent-based

system requires the nation to “blend the scientific and engineering requirements with continuous public engagement.” He discussed some “common themes” among U.S. and international nuclear waste programs: “full engagement of the affected parties,...a well articulated technical basis for the selection of the site and the design of a repository, and finally the basis and strategy of the case for safety must be accessible to the broader technical community as well as the public.” He also mentioned the success at the Waste Isolation Pilot Program in New Mexico.

Kaptur, during the first panel, and Frelinghuysen, during the second panel, asked about the total spent on Yucca Mountain. Lyons noted that estimates vary, but estimated \$11 billion. Rusco stated the total as \$15 billion due to inflation.

Frelinghuysen questioned the feasibility of a consent-based system and the fate of Yucca Mountain by pointing out that Yucca Mountain originally had the support of the local community. Eisenhower noted there was a local “eagerness” for the project, but it suffered from the “donut-effect,” the local community supported the project while the state opposed it.

Frelinghuysen asked if there were any technical issues with Yucca Mountain. Ewing responded that the Nuclear Waste Technical Review Board’s review found that “at this point no individual technical or scientific factors have been identified that would automatically eliminate Yucca Mountain for consideration as a site for permanent repository.” Mike Simpson (R-ID) stated in conclusion that the issue with Yucca Mountain was political not technical.

Fleischmann inquired about Eisenhower’s impressions of nuclear waste storage practices in other countries. Eisenhower stated that she was “impressed” by Sweden’s system and particularly supported their establishment of a federal organization to deal specifically with nuclear waste.

Questions and comments also dealt with the need to increase public confidence that any interim storage facility established at the consent of a community would not become an indefinite, long-term storage facility. They discussed the possibility of collocating the interim storage and permanent repository, and the need for “some kind of soft linkage eventually” between the two.

Opening statements and witness testimonies for the hearing can be found on the Committee web site.

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