

CONGRESSIONAL TESTIMONY

Examining America's Nuclear Waste Management and Storage

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Committee on Oversight and Government Reform

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Thank you for the opportunity to testify before you today and for your interest in examining nuclear waste management issues. While managing nuclear waste has been a source of much heated debate, false starts, and exasperation, it is a solvable challenge. Rather than a problem, I believe nuclear waste management has the potential to be an opportunity for growth and innovation in the nuclear industry.

As requested, this testimony covers how America got to the current dysfunction in nuclear waste management policy, the consequences of stalled action particularly to taxpayers, and where we are now on the issue including principles I believe will get nuclear waste management on track.

How We Got Here

According to the Nuclear Waste Policy Act of 1982, the Department of Energy (DOE) entered into contracts with commercial nuclear power companies to collect and store nuclear waste. After evaluating alternative sites, Congress amended the Act in 1987 to designate Yucca Mountain as the site for a national repository should the Nuclear Regulatory Commission (NRC) approve a license. This and the DOE's failure to collect nuclear waste or license a repository have been the major touchpoints for contention. Despite nearly 60 years of nuclear power generation the DOE has yet to begin collecting waste, though it was required to begin doing so by 1998.

A nuclear waste fund was designed under the Act to ensure that the entire costs of nuclear waste disposal were borne by the nuclear industry and their ratepayers. Appropriately, it is nuclear power operators and ratepayers, not federal taxpayers, who cover the costs of managing waste from

electricity production and use.¹ This is done through a fee on nuclear power generation, which while being collected by the DOE accumulated roughly \$750 million annually. Congress would then appropriate from the nuclear waste fund as a means of protecting both taxpayers from subsidizing nuclear waste management and providing accountability over the DOE's use of funds.

In 2008, the DOE applied for a license with the NRC to build a facility at Yucca Mountain because the site "brings together the location, natural barriers, and design elements most likely to protect the health and safety of the public, including those Americans living in the immediate vicinity, now and long into the future."²

Despite the clear direction of the Nuclear Waste Policy Act as amended, and lacking any technical or scientific justification, the Obama Administration unilaterally decided that Yucca Mountain was "not a workable option," and attempted to withdraw the license application.³ The Obama Administration disbanded the Office of Civilian Radioactive Waste Management (OCRWM) responsible within the DOE for the license, and refused to use funds as appropriated by Congress from the nuclear waste fund to advance the DOE's application. Nevertheless, the Administration attempted to continue collecting the fee on nuclear operators while advancing its own strategy.⁴

Following a series of court cases, the NRC was ordered to finish reviewing the Yucca Mountain application while funds existed or until Congress directed otherwise,⁵ and the DOE was required to stop collection of the nuclear waste fee.⁶ The nuclear waste fund currently holds \$38.8 billion in industry fees and accumulated interest; interest amounts to roughly \$1.4 billion annually.⁷ To put this in perspective, the House of Representatives requested an initial \$120 million for the DOE and the NRC to continue the Yucca Mountain licensing process. The last collection to the nuclear waste fund was made in May 2014.

These pivotal court decisions in essence bring matters back to where they were in 2008, when the DOE first applied for a license. The NRC technical staff finished its safety evaluation report of the DOE application in January 2015 and concluded that a repository at Yucca Mountain would be technologically feasible and safe. However, contentions with the license application remain to be heard before the licensing board and there must be a licensable entity within the DOE for the NRC

¹ See section 111(b)(4) and again Sec. 302(a)(4) of the Nuclear Waste Policy Act.

² U.S. Department of Energy, "Recommendation by the Secretary of Energy Regarding the Suitability of the Yucca Mountain Site for a Repository Under the Nuclear Waste Policy Act of 1982," February 2002, http://energy.gov/sites/prod/files/edg/media/Secretary_s_Recommendation_Report.pdf (accessed September 22, 2017).

³ U.S. Department of Energy, Steven Chu, Secretary of Energy, "Statement of Steven Chu Secretary of Energy Before the Committee on the Budget," U.S. Senate, Washington, DC, March 11, 2009, <http://energy.gov/articles/statement-steven-chu-secretary-energy-committee-budget> (accessed September 21, 2017).

⁴ The Obama Administration pursued a number of "fact finding missions" and alternatives excluding Yucca Mountain, among them its Blue Ribbon Commission, the *Strategy for the Management and Disposal of Used Nuclear Fuel and High-Level Radioactive Waste*, consent-based siting, and deep boreholes.

⁵ Katie Tubb, "Court Kicks Yucca Mountain Review Back in Motion," *The Daily Signal*, August 13, 2013, <http://dailysignal.com/2013/08/13/court-kicks-yucca-mountain-review-back-in-motion/>.

⁶ Katie Tubb, "DOE Can't Collect Fees for Not Managing Nuclear Waste," *Daily Signal*, May 16, 2014, <http://www.heritage.org/energy-economics/commentary/doe-cant-collect-fees-not-managing-nuclear-waste>.

⁷ U.S. Department of Energy, "Audit Report: Department of Energy Nuclear Waste Fund's Fiscal Year 2016 Financial Statement Audit," Office of Inspector General, December 2016, pp. 5, 10, <https://energy.gov/sites/prod/files/2016/12/f34/OAI-FS-17-04.pdf> (accessed September 21, 2017).

to evaluate. This presumably would be the statutorily required Office of Civilian Radioactive Waste Management.

Costs of Inaction to Taxpayers

Stalled action has had costs. The nuclear industry and local communities offer important perspectives. However, a voice too often left out is that of the taxpayer.

Because the DOE has failed to collect nuclear waste as contractually obligated, it has been found in partial breach of its contracts with nuclear power companies. Today, the federal government remains liable for over 76,000 tons of commercial nuclear waste.⁸ This liability grows as America's nuclear power reactors produce roughly 2,000 tons of nuclear waste every year as part of providing nearly 20 percent of the electricity used in the US.

According to the DOE's most recent count, \$6.1B in settlements have been paid to nuclear utilities. Another \$161.5M will be paid in 2017.⁹ This money comes from the Treasury Department's Judgement Fund as a "permanent, indefinite appropriation."¹⁰ Put simply, the DOE budget takes no hit for its negligence and the nuclear industry is "made whole" through the Judgement Fund. Taxpayers are left to cover the bill.

The DOE projects future liability to be \$24.7 billion, but this is misleading because it assumes construction of a pilot interim storage facility by 2021 as previously called for by the Obama Administration without the approval of Congress.¹¹ The nuclear industry estimates at least \$50 billion in liabilities.

Another expense to taxpayers is as a result of how the nuclear waste fund is accounted for in federal budgets. As mentioned earlier, the DOE stopped collecting fees from industry for the nuclear waste fund in May 2014 as directed by the courts. However, the Congressional Budget Office continues to assume the government is bringing in \$385 million annually simply because the DOE *could* reinstate the fee.¹² The Office of Management and Budget has also used this accounting trick in its budgets.¹³

No such money has been collected, yet Congress uses this assumption to offset \$385 million in increased federal spending. In other words, the nuclear waste fund has been used by Congress to

⁸ Nuclear Energy Institute, "On-Site Storage of Nuclear Waste," <https://www.nei.org/Knowledge-Center/Nuclear-Statistics/On-Site-Storage-of-Nuclear-Waste> (accessed September 21, 2017).

⁹ U.S. Department of Energy, "Fiscal Year 2016 Agency Financial Report," November 15, 2016, pp. 82-83, <https://www.energy.gov/cfo/downloads/fy-2016-doe-agency-financial-report> (accessed September 21, 2017).

¹⁰ Bureau of the Fiscal Service, "Judgment Fund," U.S. Department of the Treasury, https://www.fiscal.treasury.gov/fsservices/gov/pmt/jdgFund/judgementFund_home.htm (accessed September 22, 2017).

¹¹ DOE, "Fiscal Year 2016 Agency Financial Report," pp. 82-83.

¹² \$385 million is roughly half of the \$750 million per year the DOE collected from nuclear power plants while the fee was in place. Kim Cawley, "The Federal Government's Responsibilities and Liabilities Under the Nuclear Waste Policy Act," testimony before the Subcommittee on Environment and the Economy, Energy and Commerce Committee, U.S. House of Representatives, December 3, 2015, https://www.cbo.gov/sites/default/files/114th-congress-2015-2016/reports/51035-NuclearWaste_Testimony.pdf (accessed September 21, 2017).

¹³ See for example, Office of Management and Budget, *Budget of the U.S. Government, Fiscal Year 2017*, February 9, 2016, p. 130 <https://obamawhitehouse.archives.gov/sites/default/files/omb/budget/fy2017/assets/budget.pdf> (accessed September 21, 2017).

disguise the cost of budgeting choices, “perpetuating the myth that Congress is fully paying for new...spending.”¹⁴

Finally, stalled action on nuclear waste management is contributing pressure to clean up of radioactive waste from Cold War and WWII weapons sites under DOE’s Environmental Management (EM) portfolio. Without a long term repository for nuclear waste, many of these sites cannot complete cleanup. The DOE estimates total taxpayer liability for the EM mission to be \$371.7 billion.¹⁵ This is necessary work and an appropriate function of the federal government to tackle cleanup of these sites. However the lack of a final repository for defense related waste certainly factors into and puts undue pressure on this liability.

Where We Are Now: Appropriations Deadlock

The current and future nuclear industry faces considerable uncertainty after the past decade of political mismanagement. Despite a new administration willing to follow the law Congress has not appropriated from the nuclear waste fund since 2010. Congress’s failure to appropriate funds to complete the Yucca Mountain permitting process only prolongs the DOE’s failure to collect nuclear waste.

Far from the intent of protecting the fund’s use from political whims, appropriations from the nuclear waste fund have become a principle lever for impacting nuclear waste management policy. Further, changes in federal budgeting rules over time also have unduly complicated use of the nuclear waste fund, thwarted reform of nuclear waste management, and enabled abuse by Congress and presidential administrations to disguise federal spending. Given the division of the nuclear waste fund between mandatory receipts and discretionary appropriations, Congress faces considerable barriers to use or reform the fund and therefore to make any progress on nuclear waste management policy, let alone progress on a repository at Yucca Mountain.

As stated aptly by former longtime Office of Management and Budget analyst Joseph Hezir, “The actual experience with implementation of the [nuclear waste fund] has been virtually opposite of the original Congressional intent.”¹⁶

Congress currently appears to be in a deadlock. Senate leadership seems unwilling to appropriate from the nuclear waste fund to complete the Yucca Mountain license process in an election year but is interested in DOE interim storage options.¹⁷ The House has routinely appropriated funding for Yucca Mountain and wisely has not pursued interim storage without commensurate progress on the Yucca Mountain licensing process.

¹⁴ Justin Bogie, “Budget Gimmicks Increase Federal Spending and Mask True Costs of Legislation,” Heritage Foundation *Backgrounder* No. 3234, July 26, 2017, <http://www.heritage.org/budget-and-spending/report/budget-gimmicks-increase-federal-spending-and-mask-true-costs>.

¹⁵ DOE, “Fiscal Year 2016 Agency Financial Report,” p. 72.

¹⁶ Joseph Hezir, “Budget and Financial Management Improvements to the Nuclear Waste Fund (NWF),” Background Report to the Blue Ribbon Commission, May 2011, https://curie.ornl.gov/system/files/documents/not%20yet%20assigned/brc_hezir_nwfbudget_051511.pdf (accessed September 22, 2017).

¹⁷ Dan Leone, “Simpson Tags Senate Leadership for Yucca Holdup,” Exchange Monitor, September 15, 2017, <http://www.exchangemonitor.com/publication/rwm/simpson-tags-senate-leadership-yucca-holdup/?printmode=1> (accessed September 22, 2017).

Next Steps for Nuclear Waste Management Policy

America is at a crossroads where Congress has an opportunity to set nuclear waste management on track. There have been some notable legislative efforts to make progress and at least a dozen attempts since 1984 to fix the nuclear waste fund alone.¹⁸ From these attempts, at least two cautionary tales surface.

First, so long as nuclear waste management remains a function of the government, Congressional accountability through appropriations is absolutely necessary. Congress's power of the purse should not be legislated away. Oversight through appropriations is necessary in order to protect both ratepayers and taxpayers with all the necessary checks and balances of a democratic government.

Granted, keeping nuclear waste management as a publically-managed, congressionally appropriated activity has challenges. This was known almost from the start with the Nuclear Waste Policy Act's passage. As Thomas Cotton of the now defunct Congressional Office of Technology Assessment then testified:

“In short, it appears to us that there is an inherent conflict between a stable commitment to a long term fixed schedule for a complex technical project such as waste disposal on the one hand, and a high degree of external annual budgetary control on the other.

...striking a balance between the independence that appears to be needed to ensure steady and predictable progress towards timely achievement of a longterm goal, and the degree of oversight and control required in a democratic society, may be one of the most difficult challenges involved in devising a comprehensive waste management program.”¹⁹

This is all the more reason why nuclear waste management policy in the US must be re-imagined altogether.

Secondly, recent legislative attempts to fix nuclear waste management policy have emphasized the option of interim storage. Regardless of what happens with Yucca Mountain, the scientific community and global experience have supported deep geologic storage as critical to any waste management plan. Interim storage, by itself and under the current policy is settling for the bare minimum requirements to alleviate the government's liability for commercial nuclear waste. This stop-gap measure would eliminate a powerful incentive for the government to make good on its long-delayed promise to manage and dispose of the nuclear waste it is legally responsible for under the Nuclear Waste Policy Act. And it would dampen incentive to install the greater policy reforms necessary for nuclear waste management.

Most operating and decommissioned nuclear power plants are currently functioning as what the NRC calls Independent Spent Fuel Storage Installations (ISFSI). As commonly designed in the U.S., an interim storage facility is little more glamorous than an expensive concrete pad for large concrete encased casks of spent nuclear fuel or keeping fuel in existing pools for longer than planned.²⁰ The

¹⁸ See appendix A of Hezir, “Budget and Financial Management Improvements.”

¹⁹ As quoted in Hezir, “Budget and Financial Management Improvements,” p.32.

²⁰ U.S. Nuclear Regulatory Commission, “Typical Dry Cask Storage System,” April 13, 2015, <http://www.nrc.gov/waste/spent-fuel-storage/diagram-typical-dry-cask-system.html> (accessed September 22, 2017).

NRC has determined,²¹ and the DOE itself recognizes, that “nuclear waste is safe and secure in these locations.”²² In other words, the U.S. already *has* an interim storage system which the NRC has determined is secure.

However, the biggest hurdle to a long-term storage facility and robust nuclear industry is that the federal government, per the 1982 Nuclear Waste Policy Act, is responsible for managing and disposing of the nuclear waste produced by private businesses. Legislative efforts have not addressed the underlying problems of the current system connected to this – namely, that nuclear power plants are not responsible for waste management, and that there is no meaningful pricing system.²³

First, responsibility for nuclear waste management ought to belong with nuclear power operators as an aspect of producing commercial power, in the same way that other industries, such as health care, mining, farming, or manufacturing, are responsible for managing their own wastes. If waste management were a dynamic part of a utility’s bottom line, the nuclear industry would naturally be interested not only in efficient nuclear waste disposal, but also in cost-effective pre-disposal choices, such as interim storage options, fuel types, and reactor technology.

Making industry responsible for the nuclear waste they produce does not remove the government’s role altogether, as it is appropriately responsible for regulations protecting health and safety and taking final title to waste and a decommissioned repository.

When nuclear power companies are responsible for waste management, regulating agencies can then be seen as simply that—regulators with a disinterested goal of protecting health and safety. But as both a regulator and repository operator, the government appears to have a bias.

In this situation, a potential host community can then be a truly equal partner in negotiations with industry rather than an inferior party submitting to a federal government’s will to locate a repository in a David and Goliath battle. Former Governor Mike Sullivan’s reflections on the consideration of an interim storage site in Wyoming are telling. Governor Sullivan ultimately vetoed the proposed interim storage facility because “it was a federally controlled process of a serious issue [and] it seemed to me we would rapidly lose control...I wasn’t sure we could trust the federal government to do what they said they were going to do, and if we stepped into this we’d be dancing with a 900 pound gorilla, and I didn’t think that was in the interests of the state.”²⁴

In contrast, a system with appropriately assigned waste management responsibilities for both industry and government is not just a theoretical ideal but is being accomplished in Finland. Finland

²¹ U.S. Nuclear Regulatory Commission, “Continued Storage of Spent Nuclear Fuel,” July 25, 2015, <http://www.nrc.gov/waste/spent-fuel-storage/wcd.html> (accessed September 22, 2017).

²² Franklin Orr, “Finding Long-Term Solutions for Nuclear Waste,” U.S. Department of Energy, December 21, 2015, <http://www.energy.gov/articles/finding-long-term-solutions-nuclear-waste> (accessed September 22, 2017).

²³ Katie Tubb and Jack Spencer, “Real Consent for Nuclear Waste Management Starts with a Free Market,” Heritage Foundation, *Backgrounder* No. 3107, March 22, 2016, <http://www.heritage.org/environment/report/real-consent-nuclear-waste-management-starts-free-market>.

²⁴ Greg Fladager, “Nuclear Plan in Wyoming? Committees Pass Bill for Legislation Consideration,” *Casper Journal*, November 5, 2012, http://casperjournal.com/business/article_e0d78ba3-73ab-5dc7-9521-eb5a0f5da685.html (accessed September 22, 2017).

provides a particularly instructive example because the community housing a long-term repository was originally overwhelmingly opposed to a facility.²⁵

Secondly, nuclear waste policy reform should replace the previous flat fee to the nuclear waste fund with accurate pricing. Prices are critical to any functional and efficient marketplace and provide suppliers and customers with data to determine the attractiveness of a product or service. Prices also give potential competitors the information they need to introduce new alternatives that meet unique operator and community needs. Nuclear utilities would then have incentives to consider new technology and fuel types tied to their waste management decisions.

Nuclear waste management is not an inherently governmental activity.²⁶ It is a primarily business activity related to the commercial production of electricity. Until market forces are introduced into waste management in America, solutions will at best be prolonged in unrelated political battles and narrow in focus rather than an innovative part of the nuclear industry.

Reform must work off of these two principles of industry responsibility and market prices. It must also recognize that a long-term geologic repository is needed, and that in order to progress with Yucca Mountain the state of Nevada must have more say in the matter.

Moving forward, a possible way out of the nuclear waste management and Yucca Mountain conundrum is to treat existing waste under the political realities of decisions made by Congress under the Nuclear Waste Policy Act, and to approach new nuclear waste under a market-based policy. To this end, amendments to the Nuclear Waste Policy Amendments Act (HR 3053) could be made with options for Nevada regarding Yucca Mountain that give Nevada complete control and still allow the DOE to meet its obligations for existing nuclear waste. And, an option could be made for the nuclear industry to manage future waste through escrow accounts and through the transfer of title to waste to third parties licensed by the NRC.

There are also concrete, intermediate steps that ought to be made expeditiously by Congress. At the very least, Congress needs to provide enough funding for both the DOE and NRC to complete the license review of Yucca Mountain. This includes standing up the Office of Civilian Radioactive Waste Management within the DOE.²⁷ Finishing the review merely brings together all of the relevant information for Congress, Nevada, and the nuclear industry to make prudent decisions about next steps.

The approach to waste management as described by the Nuclear Waste Policy Act is narrow and riddled with dysfunction. Opening waste management to the nuclear industry opens the possibility of a diversity of options and a thriving domestic market. Government management of nuclear waste has achieved neither public consent nor permanent waste disposal. While progress is slowly being made to determine the viability of a permanent site at Yucca Mountain, it is high time that Congress got to work mending the broken system.

²⁵ Tubb and Spencer, "Real Consent."

²⁶ Hezir, "Budget and Financial Management Improvements," p. 13.

²⁷ Katie Tubb, "Yucca Mountain: The Department of Energy Should Take Steps Now While Awaiting Funding," Heritage Foundation, *Issue Brief* No. 4705, May 17, 2017, <http://www.heritage.org/nuclear-energy/report/yucca-mountain-the-department-energy-should-take-steps-now-while-awaiting>.

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