

Submitted Testimony From
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House Commerce and Energy Committee
Environment and Climate Change Subcommittee Hearing
Cleaning Up Communities: Ensuring Safe Storage and Disposal of Spent Nuclear Fuel
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2322 Rayburn House Office Building

Chairman Tonko, Ranking Member Shimkus and distinguished members. It is an honor to testify before you today on the importance and urgency of moving our country forward with a safe environmentally protective nuclear waste management program that supports the timely removal of spent nuclear fuel from commercial reactors, with a priority towards shutdown reactor sites, while also providing our grandchildren with a permanent disposal solution.

I speak to you today from the perspective of a former Department of Energy (DOE) civil service executive who spent nearly two decades trying to implement the laws of the United States in this area. I directly reported to five different Secretaries of Energy under three different administrations, serving as Principal Deputy Director of the Office of Civilian Radioactive Waste Management for nearly a decade and as the Acting Director longer than any Senate-confirmed Director. I retired from federal service upon completion of most of the statutory Yucca Mountain repository site scientific work, the Presidential Site Recommendation, and the Congressional override of the State of Nevada disapproval of the site in 2002.

I urge the Committee adopt legislation that supports:

- Completing the almost finished Yucca Mountain NRC licensing proceeding
- Encouraging DOE and Nevada to engage in good faith discussions to resolve Nevada's concerns with empowerment and partnership options that can serve the needs of both
- Starting an additional geologic repository development program
- Authorizing Integrated Consolidated Interim Storage
- Moving forward promptly

The framework for our nation's nuclear waste management program for commercial spent nuclear fuel and defense high-level radioactive wastes is detailed in the Nuclear Waste Policy Act of 1982, as amended in 1987 (NWPAA). Many of the exact issues that the Congress is confronting today, such as balancing host state interests with national needs and shutdown reactors, were debated then and processes were established in law to address each issue. However, the implementation of that framework has been delayed for many reasons and is currently stymied by the lack of Congressional appropriations.

Over the decades, some of the delays have been caused by additional extraordinary scientific safety and environmental protection studies and investigations to demonstrate compliance with the conservative Environmental Protection Agency (EPA) and Nuclear Regulatory Commission (NRC) million-year requirements, extra public participation steps, and legal challenges.

However, the most significant source of delay has been, and continues to be, an effective Nevada based politically driven effort to prevent Congressional funding coupled with an unwillingness to proceed.

The Nevadan Congressional members argue obstruction is appropriate because: they believe that the 1987 NWPA amendment was patently unfair by requiring that only the geologic repository site in their state was to be evaluated, claim that the site is not scientifically sufficient, and that out-of-state wastes should not be forced into their state. They also have argued that they do not have enough control over a Federal repository facility, and that they should have an absolute veto authority over a federal nuclear waste geologic repository in their state.

In addition, some interest groups want to effectively abandon the 1982 statutory framework by restarting a new program with an undefined multi-decade process to find a different unspecified geologic repository site that requires consent from state and local governments, and affected tribes. This is in addition to the already challenging necessary rigorous scientific safety and environmental protection work required. Others wish to focus mostly on centralized interim storage facilities and reduce the focus on developing a geologic repository facility.

I believe that the DOE should further engage with the Nevadan's to address their concerns. However, I do not believe that the near abandonment of the original NWPA balancing framework is in the best interest of our nation to move forward. Adjustments to existing law, such as many contained within the subject bills of this hearing, are appropriate to better enable the government to meet federal statutory and contractual responsibilities, and indeed our moral responsibilities for nuclear waste management. The most critical need, however, is to finish the last step of the NRC Yucca Mountain licensing process so that the nation, Nevada included, can have a fair and impartial assessment of the safety of the facility and then- if all safety requirements are satisfied- decide whether to build it, or not.

The federal waste management program is now stuck in limbo and going nowhere, while the need for action to remove spent nuclear fuel from reactor sites is growing quickly as power reactors are nearing their end of life and more are being forced to close early due to economic conditions. Although all reactor sites can store wastes safely for many decades, reactor sites were selected for power production- located relatively near population centers, on our coasts, lakes, and rivers, and not selected for long term waste storage or becoming *de facto* permanent nuclear waste storage sites. Today there are two dozen shutdown or announced shutdown sites and the list is growing. The communities near these reactors never agreed to be long-term waste storage sites and for shutdown reactors, the presence of these wastes precludes site reuse for commercial or public purposes and is a significant burden to everyone.

The nation's electricity consumers have already paid the Federal government for the disposal of their reactor spent fuel in their electricity bills over the past 30 years. The value of this federally held fund is approximately \$41 Billion dollars currently. And in addition, federal taxpayers also are legally required to pay damage costs of over two million dollars each day for extra unnecessary reactor storage costs. These taxpayer funded damage costs are continually rising and will be in the total of many tens of Billions of dollars range in the relatively near future if federal performance does not happen soon.

Not having a meaningful national spent fuel disposal program for our current reactor fleet can also negatively impact the public confidence in our national plans for the development and

deployment of new clean air advanced nuclear energy systems, e.g., small modular reactors. These new reactors are designed to minimize wastes, so the addition will be very minor relative to the amounts already in existence. However, the current lack of progress on waste disposal does hinder our nation's ability to achieve these major environmental climate protection advances by allowing critics to claim that there is no solution for new future nuclear wastes and that these clean safe energy sources should not be supported.

Given this current situation, it is important that the Congress provide funding and additional guidance to the DOE, or any successor organization that Congress may decide by law, to move forward with an effective integrated spent nuclear fuel management program. It is my view that H.R.-2699 moves in that direction as it contains the necessary elements of both permanent repository and interim storage programs.

To address the current national challenges, the country needs to keep its primary focus on a realistic geologic repository program and add consolidated interim storage as an important supplement to provide greater assurance for expedited spent fuel removal from priority shutdown reactors. Having a realistic path forward for the ultimate disposition of spent fuel in a geologic repository, such as at Yucca Mountain, is likely going to be a necessity for sustaining the realization of a consolidated interim storage facility somewhere in this country.

Yucca Mountain Repository

I strongly support finishing the Yucca Mountain NRC statutorily directed adjudicatory licensing process to address the scientific concerns of the State of Nevada and others that have standing in the hearing. Nevada, and others, have a right to have impartial independent judges hear the facts and allow the regulatory process to finish. This is not a decision to build the repository since that requires many additional approvals and steps. Even if a Yucca Mountain license is not ultimately granted, the nation will have learned many valuable regulatory lessons from a even failed Yucca Mountain experience that can be applied to a different site in the future.

Yucca Mountain is the most studied piece of land in the world. The science behind Yucca Mountain was conducted to the highest standards, has withstood countless national and international peer reviews, and was also overseen by a Presidentially appointed Nuclear Waste Technical Review Board which is composed of National Academies of Sciences nominated scientists. In addition to the many billions of dollars of DOE safety work, the NRC staff has spent over thirty years and approximately \$600 million dollars doing detailed independent evaluations of all the safety issues. The NRC staff has issued a formal Safety Evaluation Report concluding that the site meets all regulatory safety and environmental protection requirements. While all technical issues have been addressed, this significant national investment (~\$15B) will not be complete until the final stage of the public adjudicatory hearing process of the Nevada safety concerns is finished. This effort should not be lost by default.

In the early 1980s, Congress actively debated the proper balance of states' rights and federal need during the development and enactment of the NWPA. Although seldom mentioned these days, the NWPA provided for the development of a negotiated agreement between DOE and the host state- Nevada chose not to engage. Nevertheless, in accordance with law, DOE provided funding to Nevada to be involved in the scientific and regulatory processes for Yucca Mountain. The DOE provided the State of Nevada and their university system over \$200 million dollars during the Yucca Mountain evaluation and licensing process. Most importantly, Nevada had the

right to “disapprove” the Presidential Site Recommendation and that the site would have to be abandoned unless there was an override by both the houses of Congress. Nevada did disapprove the site; however, the disapproval was overridden by the House (306-117) in May 2002 and the Senate (with 60 votes to proceed to a voice override vote) in July 2002. However, although the original statute did provide measures for State participation and disapproval power, Nevada does not consider them sufficient and has been quite successful in continuing to stall progress through political means.

It is important to note that the local host government of the Yucca Mountain site, Nye County, as well as eight other surrounding local county governments (a majority of Nevada counties) support the continuation of the Yucca Mountain licensing and construction of the facility, if it is demonstrated to be safe under NRC rules.

To address Nevada’s concerns, the federal government should engage Nevada to discuss various empowerment and partnership options that further respect Nevada’s host role needs while also respecting national needs. It is time that we break to the repeating “win-lose; lose-win” cycle that has frustrated both Nevada and the nation for decades. Both sides have much to gain and much to lose. I personally believe a “win-win” scenario can be mutually developed that can serve the needs of both, but only if both sides are willing to engage in a constructive dialog.

Additional Repository Program

While the Yucca Mountain repository should succeed on its scientific and regulatory merits, it is entirely possible that it may fail (or be endlessly delayed) due to political obstructionism, and the nation should prepare for that potential outcome. Geologic disposal is the ultimate need, as supported by long standing national and international consensus reports. Additionally, the federal government has committed to siting such a permanent disposal facility in return for electric customer payments into the federal Nuclear Waste Fund. Therefore, any “alternatives” to the proposed Yucca Mountain repository must focus on permanent disposal in a deep geologic repository.

The NWPA has a requirement for both a first and second repository. So even if Yucca Mountain were to go forward, there is a current non-technical statutory capacity limitation that requires at least a second repository. Therefore, a search for another geologic repository somewhere within the United States should start sooner rather than later because it will be a long (many decades), difficult, and expensive process.

The Blue-Ribbon Commission on America’s Nuclear Future, and others, have recommended a shift to a consent-based approach for siting a repository. The consent-based siting approach has made progress in some smaller countries that basically have only national and local government structures. Consent-based siting has not been as successful in larger countries with regional (state) governments like Japan, Germany and the United Kingdom, which have had serious difficulties at the state/regional level, similar to what we have encountered here. If the United States had only national and local government involvement, this problem likely would have been solved years ago.

A consent-based siting approach would be ideal, and I wish it could succeed, but based on past experiences I personally do not believe it can succeed in our complex state/federal government system now or in the future. Nonetheless, a repository siting process, consent-based or otherwise, should be started soon to address the possibility of not having Yucca Mountain as a

nuclear waste repository or to address the current statutory limitations if Yucca Mountain proceeds.

Initiating a new consent-based repository siting process will face substantial challenges. Consent must be defined, e.g. who would be involved (governor, legislature, neighboring jurisdictions, transportation corridor jurisdictions, etc.) and what public processes would be used, e.g. referendums? New generic EPA standards and NRC regulations will have to be developed since current standards are either Yucca Mountain specific or not appropriate for future use. These things can all be done, but it will not be an easy, fast, or inexpensive endeavor

The siting of another repository will of course require having a strong, complex scientific safety and environmental protection technical program as well as an integrated program to create social/political host approval. The DOE tried to do this with the NWPA second repository program back in the mid-1980s, but that program was terminated due to opposition in the states that were under consideration. Although DOE tried to address state level concerns at that time, the program was heavily scientifically based in earth sciences and was incapable of dealing with the emotional and eventual political resistance. Nonetheless, that program did identify potential geologic formation regions for a repository in 36 states across the nation. Eventually a technically suitable site will be needed in some state.

Integrated Consolidated Interim Storage

I believe the addition of an integrated consolidated interim storage facility into the nation's spent fuel management program is warranted and very important. However, there is much to learn from the past, as this nation has tried and failed to create consent based interim storage facilities many times in the past decades. Despite local community host support, host state leadership has routinely stopped the efforts. In the mid-1980s the state of Tennessee stopped the DOE proposal for a storage facility near Oak Ridge. In the early 1990s two federally appointed Nuclear Waste Negotiators (a Republican followed by a Democrat) tried for six years to negotiate a consensus repository or interim storage site location. However, local efforts to consider hosting a storage facility were blocked by state-level concerns. For example, the Governor of Wyoming stopped a Fremont County effort and the New Mexico delegation stopped a Mescalero Apache effort. In the early 2000s the State of Utah stopped the NRC-licensed Private Fuel Storage facility on the reservation of the Goshute Indian tribe.

Currently, with strong local support, a proposed private interim storage site in south east New Mexico is undergoing NRC licensing review. However, just last week, New Mexico Governor Grisham expressed her written opposition to that facility within her state.

In all of these cases, from the 1980s to the present, a major concern of the host state was that a national geologic repository would not come into existence and that any interim storage facility would become a permanent indefinite duration waste storage site. It is for this reason, that I believe the existence of a meaningful realistic repository program will be a necessity to enable the development of a consensus consolidated interim storage facility anywhere in this country.

Developing an integrated consolidated interim storage facilities will be a siting challenge, but I firmly believe it is doable and desirable in order to provide a bridge from the current many dozens of temporary nuclear waste storage locations across the country to an eventual ultimate

geologic repository site by providing a diversity and redundancy of options for a more timely fuel receipt. Although spent nuclear fuel is being safely stored at reactor sites today, these sites were never meant to long-term waste storage sites and none of the site communities or states ever consented to indefinite storage. This is unnecessarily costing our nation tens of billions of dollars.

Speaking as a grandparent, as well as an engineer, it is simply irresponsible to saddle our children, grandchildren and future generations with spent nuclear fuel sitting in thousands of canisters in dozens of temporary storage locations scattered across the country with seemingly endless financial liabilities with no place to go. It is time to act to remove spent fuel from the coasts of Maine to the coasts of California and from our Great Lakes and river systems in between. It is time to step up and take responsibility for decisions we made six decades ago to produce nuclear fuel and three decades ago to develop a geologic repository for the ultimate disposition of that spent nuclear fuel.

Thank you for your attention.