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Lessons from the Nuclear Waste Negotiator Era of the 1990s for Today's Consent-Based Siting Efforts

By **Dr. Matt Bowen**
September 2024

REPORT

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The author thanks the two negotiators for their willingness to be interviewed and for their time. The author thanks Thomas A. Cotton for inspiration, and thanks Robert Mussler and other individuals for conversations and feedback.

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Executive Summary

Nuclear power is being weighed in energy transition plans around the world, as countries seek to replace fossil fuels with low-carbon alternatives while also meeting growing energy demand and maintaining reliability and affordability. When considering extension of existing nuclear reactor licenses as well as approving new ones, there is an ethical obligation for today's users to develop plans for long-term management of the resulting nuclear waste and not defer its disposition to future generations. In the United States, the federal government is contractually obligated to take ownership of the spent nuclear fuel (SNF) produced at power plants, but this has not happened. The one deep geologic repository project named in law by Congress for potential disposal of SNF—Yucca Mountain in Nevada—has reached a stalemate, with Congress appropriating no money to move the project forward since 2010 due to Nevada's opposition.

Negotiations with US states and tribes to host storage and disposal facilities have been sensitive in the past due to both a stigma around nuclear waste and a perception of risk associated with such facilities. A federal "nuclear waste negotiator" role existed in the early 1990s to overcome these difficulties and find a state or tribe willing to host a repository or interim storage facility, though this short-lived, volunteer-based program did not lead to deployment of either.

This report, part of a series of publications on nuclear waste policy at the Center on Global Energy Policy at Columbia University SIPA, reveals lessons learned from the experiences of the two prior negotiators that could benefit a recent, congressionally directed effort at the Department of Energy (DOE) to begin a "consent-based" siting program for nuclear waste. Those individuals were authorized to negotiate terms and conditions—including financial and institutional arrangements—with a state or tribe in a written agreement that would then have to be approved by Congress. Importantly, a state or tribe was assured it could explore the potential of hosting a site while retaining the right to withdraw at any time, and if it did proceed, would have a measure of power in setting terms for the project.

Additional insights from the prior nuclear waste negotiator role for similar efforts today include the following:

- Title IV of the Nuclear Waste Policy Act (NWPA), in which the negotiator role was outlined, included high-level consent requirements—a written agreement between the federal government and a host state or tribe, followed by congressional approval—that have been present in other successful nuclear waste management facility projects, such as the Waste Isolation Pilot Plant in New Mexico. Such consent requirements would enshrine a role for the

state in the event that, for example, a county within it wanted to move forward with studying a nuclear waste management facility.

- Congress could consider two options for utilizing the negotiator provisions of the NWPA: 1. reinstating the expired negotiator office and providing funding for it, or 2. directing the secretary of energy to follow the approach laid out in Title IV. A separate negotiator office would be independent of DOE and thus could approach negotiations without the historical baggage of the agency. The secretary of energy, on the other hand, has a higher profile than a separate office would and has a clear ability to negotiate provisions of interest to states and tribes beyond those only related to nuclear waste.
- Two tacks taken by the negotiators in the 1990s to stimulate state and tribal engagement in potentially hosting a facility could be employed under a new negotiator: 1. openly soliciting any interested states, local governments, and tribes to participate in multiple phases of increasingly detailed studies, and 2. proactively approaching communities that the federal government has reason to believe may be qualified and interested (e.g., those with military bases that are closing or DOE-owned facilities and laboratories).
- Defining the potential benefits of hosting a facility—such as infrastructure improvements or economic development through job creation at the facility site as well as potentially co-locating other federal projects or supply chain industries within the state—at the beginning of public discussion would help communities weigh such potential upside against any perceived risks.
- The limited time afforded to each negotiator, one for a little over two years (before a new administration was elected) and one for 15 months, hampered their ability to reach an agreement with states and tribes. If the Office of the Nuclear Waste Negotiator were to be reconstituted, providing a longer term and ensuring continuity across administrations would add credibility to the position and could raise the likelihood of success.

Introduction

As the world grapples with how to meet growing demand for energy from developing nations while balancing affordability, reliability, security of supply, air pollution, climate change, and more, nuclear power is one source in the spotlight. In recent decades, the United States has made large investments in the development of new reactors, and the Inflation Reduction Act of 2023 created a technology-neutral tax credit to accelerate deployment of low-emission energy technologies, for which new nuclear plants qualify.

For nuclear to play a meaningful role in the energy transition, both when considering the extension of existing reactor licenses and green-lighting new reactors, there is an ethical obligation for today's user to develop plans for long-term management of its waste—spent nuclear fuel (SNF)—and not defer it indefinitely. In addition, some states have passed laws prohibiting new reactor construction unless progress on SNF management is made, so the issue may also hamper nuclear energy deployment. Ultimately, a deep geological repository will be needed for the disposal of associated long-lived nuclear waste, but public fears associated with radioactive materials have made siting such facilities challenging.[1]

The US SNF and high-level waste (HLW) disposal program has reached a stalemate; it has not meaningfully advanced in over a decade.[2] According to the Nuclear Waste Policy Act of 1982 (NWPA), as amended in 1987, the US Department of Energy (DOE) is only allowed to characterize one site—Yucca Mountain in Nevada—for potential disposal of commercial SNF, and the State of Nevada has opposed the project. The state's congressional delegation (both Democratic and Republican members) has blocked appropriations to move the project forward since 2010.[3] Both major party nominees for president in 2024 are unlikely to request funding for the project.[4]

The Blue Ribbon Commission on America's Nuclear Future (BRC) was chartered by the Obama administration to make recommendations to the federal government on how best to restructure the US SNF and HLW management program.[5] The BRC recommended in 2012 that US law be amended to authorize a "consent-based" approach[6] for developing new SNF storage and disposal facilities, among other recommendations focused on improving implementation of the program. Congress did not act on the BRC's recommendations in the years that followed, until in 2020 it directed the DOE to pursue a "consent-based" process for developing a consolidated interim storage facility.[7] Such facilities would store commercial SNF (e.g., from shut-down nuclear power plants) on an interim basis until a final disposition pathway is developed.[8] Congress's directive to the DOE, however, did not define what "consent" was to mean, nor did it include a new effort on disposal sites, only storage.

The lack of a statutory definition[9] for consent in a new approach to siting nuclear waste management facilities is broadly complicating. One important difference in governance between the United States and other countries whose SNF management programs are moving forward (e.g., Finland or Sweden) is the presence of state governments in between the US national and local governments. Given the history of federal, top-down decision-making around nuclear waste disposal locations, states may worry that no definition of consent—or rather, no defined state role—could mean that any new entity created by the DOE to negotiate a location might be able to develop SNF and HLW facilities even when there's disagreement among state, local, and tribal interests about involvement. Not defining consent in at least a high-level manner at this most preliminary stage of siting considerations may impede finally making progress on nuclear waste management.

The BRC had suggested that a consent-based approach should pursue a process similar to that established in the now expired Nuclear Waste Negotiator provisions of the NWPA.[10] For that reason, this report explores the nuclear waste negotiator position and whether it may be relevant to policy considerations today. Notably, the negotiator position is an example of a measure for which consent was defined in statute. Specifically, Title IV of the NWPA as amended requires a written agreement between the federal government and a state or American Indian tribe and for Congress to later approve the agreement. Such written agreements have been part of negotiations leading to other successful nuclear waste management facilities. For example, the agreement between the DOE and New Mexico led to the Waste Isolation Pilot Plant (WIPP), which disposes of defense-related transuranic (TRU) waste. Years after that agreement, Congress passed legislation—the WIPP Land Withdrawal Act—that aligned with the written agreement.

This report begins with an explanation of the origins of the negotiator position: how it came to be created and details of the underlying statute. It then describes the experience of the two individuals who held the negotiator position before it expired—David H. Leroy (who held the position from August 1990 to July 1993) and Richard Stallings (November 1993 to January 1995)—partially informed by author interviews with them as well as documents reviewed at the National Archives. Finally, the report discusses how the negotiator experience from the 1990s as well as the underlying statute—still in existence—may be relevant to policy questions that federal and state policymakers are wrestling with today. The report concludes by suggesting that the high-level consent requirements in Title IV of the NWPA (i.e., for a written agreement between the federal government and a host state, followed by congressional approval of the agreement) could help to address the thorniest question facing today's consent-based siting efforts—what will be the states' role?—and proposes two implementation pathways.

Origins of the Nuclear Waste Negotiator Role

The position of the US nuclear waste negotiator was created during a tumultuous period of US nuclear waste policy in the late 1980s. Congress had passed the Nuclear Waste Policy Act of 1982, which directed the DOE to take defined actions toward evaluating sites and to ultimately identify two sites as potential geological repositories for the disposal of commercial and defense SNF and HLW by specified dates.[11] The rationale for having two repositories was to ensure regional fairness, minimize the transportation of waste, and have a backup in case one of the repositories developed problems.[12]

However, in May 1986, when Secretary of Energy John S. Herrington announced a short list of three candidate sites for the first repository (Yucca Mountain in Nevada, Hanford in Washington, and Deaf Smith County in Texas), he crucially added that the DOE was suspending the second repository program. This decision, widely perceived to have been made under political pressure from Eastern states, sent the program into a downward spiral that ultimately led to radical amendments to the NWPA the next year.

1987 Amendments to the NWPA

Members of Congress introduced at least 28 bills in 1987 that were focused on redirecting the US nuclear waste program (see Appendix A).[13] Broadly speaking, the pieces of legislation could be placed into two groups. In general, members of Congress from Western states, and in particular the three states that had been selected as candidate sites for the first repository, introduced legislation that would suspend the site selection process and/or create study commissions to make recommendations on how to improve the US SNF and HLW disposal program. In the opposite direction, some members of Congress from Eastern states, and in particular the states that had been identified as potential hosts for the second repository, introduced legislation that placed in statute the Reagan administration's deferral of the second repository program (or eliminated it entirely), lifted the cap of 70,000 metric tons of waste for the first repository, or called on the secretary of energy to select a single site for characterization.[14]

The vehicle for amending the NWPA became the Omnibus Budget Reconciliation Act of 1987, and it named Yucca Mountain in Nevada as the only site that would be characterized for a potential repository. The narrowing of focus to only one location was described in the conference report as resulting "in significant budget savings in fiscal years 1988, 1989, and 1990." The specific language

in the omnibus that named Yucca Mountain had not appeared in any of the bills introduced in 1987, much less any bills that went through formal committee hearings or markups. Nonetheless, the conferees inserted the text into the final bill and it became US law on December 22, 1987. Yucca Mountain would now be the only location in the United States where the DOE was allowed to conduct an evaluation of potential disposal of SNF and HLW.

Members of Congress knew at the time that this was a dramatic alteration of US nuclear waste policy with risks and obvious political machinations at work. Senator Alan Simpson from Wyoming said, "If Nevada isn't it, we're in deep trouble," and Congressman Al Swift from Washington state said, "This bill shows you what can happen to a small state when 49 other states decide it's a target."[15]

Creation of the Negotiator Position

While the "Screw Nevada Bill" (which the omnibus provisions naming Yucca Mountain were dubbed in Nevada following passage[16]) was created in a rushed, obscured process, some provisions had in fact been developed through the traditional legislative process. One such section in the 1987 amendments to the NWPA concerns the subject of this report: establishment of the Office of the Nuclear Waste Negotiator within the executive branch.[17]

The negotiator position—outlined in Title IV of the NWPA—was the brainchild of the chairman of the House Interior Committee, Mo Udall of Arizona, who had expressed disappointment and dismay in the middle of 1987 with how the nuclear waste management program had been implemented since the 1982 NWPA.[18] He noted that five years and billions of ratepayer dollars later, the program was in "ruins" and the goal of siting a repository seemed "further away than ever."

The conference report for the 1987 omnibus bill explained that the president was to appoint a negotiator to seek a state or Indian tribe willing to host a permanent repository or a monitored retrievable storage (MRS) facility (also known as a consolidated interim storage facility) at a suitable site.[19] The individual was authorized to negotiate the terms and conditions (including financial and institutional arrangements) under which the state or tribe would be willing to host a repository or MRS facility. Congress would still need to approve and enact implementing legislation for an agreement reached by the negotiator and state or tribe for it to take effect. These efforts would be independent of, and would proceed in parallel with, DOE efforts to site a repository at Yucca Mountain.

In conjunction with the US Environmental Protection Agency and US Nuclear Regulatory Commission (NRC), the negotiator would make a preliminary determination of the environmental and public safety qualifications of any proposed site. For sites found preliminarily suitable, the negotiator could negotiate a repository siting agreement with any governor (or other state-

authorized person) or authorized tribal representative within whose jurisdiction such a site was located. The agreements were to include economic incentives and local involvement in institutional control of repository operations. The negotiator was also to consult with any state, subdivision of a state, or Indian tribe that the negotiator determined might be affected by the siting of a repository and could include terms and conditions in proposed agreements relating to their interests.

Congressman Udall had argued that the purpose of the negotiator role was to find a safe and environmentally acceptable site for a repository through productive discussions between state and federal officials, "rather than trying to force it down the throat of an unwilling state or community." He noted that a nuclear waste repository, wherever it was located, would provide jobs and an influx of federal funds, but in addition, it was only fair that the host state and community be justly compensated for their valuable service to the nation. Rather than setting fixed dollar amounts on that service, the bill left the negotiator "wide latitude" to negotiate with the state or tribe on the terms and conditions of importance to it. Protections and procedures in the original NWPA would still be preserved for negotiated sites: no repository could be constructed at any site that was not proved technically safe and authorized by the NRC.

Congressman Udall observed that a large part of the problem with siting a nuclear waste repository in the United States stemmed from the public perception that such a project was a "source of endless misfortune." He asserted that the best approach was to assure the public as to its safety and make the repository attractive through whatever means a state or Indian tribe might reasonably request.

Chairman Udall had noted during a hearing in September 1987 that he had heard from five states interested in hosting a nuclear repository "if the price is right, Federal land and money, super collider projects . . . I have a hunch we are moving in a direction in some cases where the proposition might be one that we couldn't refuse." Speakers at the hearing were generally supportive of a nuclear waste negotiator position, if at times skeptical that any state would consent to host a nuclear waste management facility.[20] The eventual NWPA amendments broadened the mission of the negotiator to attempt to find a state or Indian tribe willing to host a repository *or a consolidated interim storage facility*.

Title IV of the amended NWPA, where the negotiator provisions still reside, does not spell out details of what must be included in the agreements. This lack of detail is consistent with the BRC later saying "the question of how to determine consent ultimately has to be answered by a potential host jurisdiction, using whatever means and timing it sees fit." Nothing about Title IV is to be construed to prohibit disapproval of the agreement by a state referendum or act of the state legislature.

Section 403(b) of the NWPA states that units of local government and even nonhost states and

tribes affected by a given facility must be consulted by the negotiator, who may include provisions related to their interests in the agreement. However, the negotiator does not have the authority to approve or disapprove the agreement.

As noted earlier, agreements negotiated under Title IV must be enacted into federal law by Congress. This additional step allows an agreement to include provisions (e.g., transfers of federal land or a grant of regulatory authority over the facility to the host) that are beyond the authority of a federal official to commit the federal government to and also provides Congress assurance that an agreement cannot make substantial policy changes without its approval.[21]

After the Office of the Nuclear Waste Negotiator was created by the 1987 omnibus, the Reagan administration objected to it residing within the Executive Office while being subject to Senate confirmation. This led to Congress passing an amendment[22] in 1988 to make the negotiator an independent office.[23] The office would remain vacant until 1990, when the first negotiator was nominated by President George H. W. Bush and confirmed by the Senate.

Implementation Experience

According to statute, the Office of the Nuclear Waste Negotiator was to expire no later than 5 years and 30 days after enactment of the amendments to the NWPA, which would have been January 1993. Given the first negotiator, David H. Leroy, was not confirmed until August 1990, just about half of the original five-year term remained to discover what might be possible in this new role.

David H. Leroy (August 1990 to July 1993)

David H. Leroy, a former lieutenant governor of Idaho, became the first negotiator. News coverage in the first year of this role's existence painted an almost impossible mission, with headlines such as "Unenviable Task: Sell the Idea of a Nuclear Dump," "He's at Least as Popular as a Tax Collector," and "Hired to Be Negotiator, But Treated Like Pariah."[24]

In an interview with the author in 2023, Leroy mentioned several strong factors working against what he was trying to do. "The principal factor . . . was NIMBY—not in my backyard. Nobody wants garbage or waste in their backyard," he said. "The other key factor was NIMTOO—not in my term of office."[25]

On the other hand, Leroy said, "We had the opportunity of creating a new independent federal agency.... I wanted to ... distinguish it from the Department of Energy and to emphasize in the regional West that we were something different and might be more credible than the Department of Energy." The new agency was headquartered in Boise, Idaho, which Leroy said was the only federal agency located west of the Mississippi at that time. "The fact that we were doing independent work ... the fact that we ... had no template that we were bound to, gave us a great ability to design a sensitive, locally oriented, new approach," Leroy said.

The "1991 Annual Report to Congress" from the negotiator's office[26] reviewed major activities in the year, starting with letters of introduction that were sent on May 3, 1991, to state and territorial governors and Indian tribal leaders explaining the negotiator's mission (see Appendix B for more details from this report). "The idea was, let us have a dialog," Leroy said. "Let us talk about whether you have an interest in negotiating with Congress, your solution to a national problem." The letter stated that the office was to "make resources and information available upon which prospective hosts may make their own judgments about whether to proceed with discussion and negotiation."[27]

In June 1991, the negotiator's office published in the Federal Register an announcement concerning the availability of grants to enable jurisdictions to assess the feasibility of hosting a consolidated interim storage facility. The idea was for recipients of preliminary grants (Phase I) to receive up to

$100,000 to be used over six months. Recipients of Phase I grants would potentially be eligible to receive advanced grants. These Phase II grants would be awarded for a maximum of 12 months and for not more than $3 million, with an initial allotment in Phase II-A of not more than $200,000, which the annual report explained was "to demonstrate successful preliminary intergovernmental coordination and siting possibilities."[28]

The *Federal Register* announcement was followed in October 1991 by a formal invitation to Indian tribal leaders and governors of states and territories to express an interest in acquiring more information and opening preliminary discussions that might lead to formal dialogues and negotiations.

According to the "1992 Annual Report to Congress" from the Office of the Nuclear Waste Negotiator,[29] seven jurisdictions applied for Phase I grants in 1991, and 13 more applied for Phase I grants in 1992 (see Appendix B for more details from this report). Of these 20 applications for Phase I grants, 10 were awarded in 1992.[30] A May 1993 publication commissioned by the office said that 29 jurisdictions—both tribes and county governments—had applied for financial assistance as of April 1993 to study the feasibility of hosting a consolidated interim storage facility. It said nine jurisdictions had applied for Phase II-A funding.[31]

"I think we had 1 or 2 initial inquiries about a repository, but the temporary facility was the focus where the initiative moved forward," Leroy said. "On the topic of the temporary facility, we met with state governors, not always in the negative. Occasionally they had very grand proposals or possibilities for compensation programs that were designed to greatly enhance some feature of their state or some region of their state. And they were very interested."[32]

Despite the interest, negotiations at that level stalled. "We didn't have any governors that actually went forward," Leroy said. "We've never revealed publicly who those governors were or what states were involved, but there were governors, chief executives of states, that were very interested in the possibility of making a proposal to Congress to host a monitored retrievable storage facility, in the earliest explorations."

Applicants to Phase I of the grant program instead fell into two categories: counties and tribes. None of the counties ended up moving forward to Phase II for a variety of reasons, including opposition from governors.

Commissioners in Grant County, North Dakota, faced a recall specifically over their involvement in the feasibility study and were replaced. The new commissioners let the Phase I study finish but did not want to move forward to Phase II-A.[33]

In Utah, Governor Michael Leavitt opposed the San Juan County commissioners' moving forward to Phase II-A. In a policy statement, he acknowledged the facility would provide jobs and infusions of money but expressed a belief that the risks and problems outweighed the benefits and that the federal government and the DOE were not reliable partners.[34] He noted that even though the negotiator was pursuing a voluntary program, the earlier repository selection showed that sites that have been studied are more likely to be forced into participation (e.g., Yucca Mountain).

In Wyoming, the Fremont County commissioners appointed the Citizens' Advisory Group in February 1992, funded by a Phase I grant, to study the feasibility of hosting a consolidated interim storage facility. The group's report discussed issues such as safety and health, transportation, economics, and more and recommended three things: (1) continue education by moving to Phase II-A, (2) hold a countywide vote on the issue, and (3) answer a list of identified questions.[35] The economic analysis conducted as part of the work estimated a construction budget of $425 million to $525 million and a total annual payroll of $12 million to $15 million over three years based on an estimated average number of 500 workers. During operations, the facility was estimated to accrue millions of additional tax dollars to the county, employ 540 people, have an indirect employment impact of 648 additional jobs, and more. The analysis also found that other locations around the nation with nuclear facilities had experienced little or no effect on tourism, though concluded that if a negative radiation event of any sort occurred and was treated in an "inflammatory" manner by the media, a negative effect might be experienced in the local area for the short term. Though Fremont wanted to move to Phase II-A, Governor Michael Sullivan ultimately sent a letter to the Fremont County commissioners explaining that, while he had heard from supporters and detractors of continuing the process, the federal government had placed the decision in the lap of a governor, and he had concluded not to move on to Phase II-A.[36]

"In the event that a governor would be inclined to veto or negate the possibility of going forward, we would defer to the governor's wishes," Leroy said. "I believe that Wyoming letter was an exercise, where that played out. And I made the call that we weren't going to fight a governor to negotiate with a county."[37] (Later, the Wyoming legislature passed a law[38] that outlined a process whereby an interested person could apply for a permit to host a consolidated interim storage facility.)

Beyond the three counties mentioned above, the remainder—and majority—of the awards under the negotiator's grant program were to tribes. Some of them explored hosting a storage facility for a time and then decided not to move further.[39] Four tribes were awarded Phase II-A grants,[40] and two tribes—the Mescalero Apache Tribe in New Mexico and the Skull Valley Band of the Goshute Tribe in Utah—made it the furthest in the grant process by applying for Phase II-B grants. (While beyond the scope of this report, after closure of the negotiator's office, the Goshute Tribe later

obtained a license from the NRC for a consolidated interim storage facility, though the tribe's efforts were thwarted by opposition from the State of Utah.[41])

States with tribes inside their borders pursuing these grants were concerned the state would have no control over whether and how a consolidated interim storage facility might be sited on tribal land. According to the NWPA, governors did not have veto power over tribal participation. As a later Congressional Research Service report noted, "How to handle the potential negotiations with Indian tribes over State objections has proved to be one of the most difficult issues for the Waste Negotiator." If a tribe ever got to the point of negotiating an agreement, it was "uncertain whether Congress would approve such an agreement over vehement State opposition," the report concluded.[42]

When President Bush lost the 1992 election for a second term, a type of limbo ensued for the negotiator, who had been nominated by the outgoing president. Negotiator Leroy and his team sent memos to the incoming Clinton administration pledging their full cooperation and offering a willingness to stay in place.[43] But that continuation was not to be.

"I came in as a Republican appointee; they wanted to put a Democrat in the post," Leroy said. After his resignation was sought and offered, Leroy ended his role as negotiator in July 1993. "A lot of our diplomacy that we were able to engineer in the first three years was somewhat personal to . . . me and my staff. And when we were all eliminated in a fell swoop, I think many of those initiatives fell by the wayside," Leroy said. "I think we were headed forward, but as with all things in short political cycles, something with a 10,000 year lifespan [like nuclear waste] is not very well managed by politicians with a two, four, and six year life."[44]

After Negotiator Leroy's term was over, Congress passed a law[45] in October 1993 to halt the Phase II-B grants. The Congressional Research Service largely ascribed the change to opposition by the New Mexico delegation to a Phase II-B grant application from the Mescalero Apache Tribe.[46]

Richard Stallings (November 1993 to January 1995)

Richard Stallings, a former congressman from Idaho, was confirmed as the second negotiator in November 1993. The Energy Policy Act of 1992 had extended the time frame for the office by two years, which left Negotiator Stallings with about 15 months to carry out his work. With limited time, he felt a different approach was need for the negotiator position.

He saw some of the same challenges as the previous negotiator. "The biggest problem with nuclear waste is the stigma," Stallings told the author in a 2024 interview.[47] But he thought SNF could be regarded as a resource rather than simply a waste and that more options would become available

if it was looked at as a resource with economic potential. He sponsored a roundtable on SNF in February 1994 to identify ideas for SNF[48] interim storage, management, and utilization.

At another workshop the following month, participants discussed coupling a temporary storage facility with the DOE's multipurpose canister program. That program involved manufacturing and assembling containers—certified by the NRC—for the handling and dry storage of SNF. The program projected a need for 10,000 canisters, costing around $3 billion to $5 billion, and the negotiator's office focused on what elements of that program could potentially be co-located with a temporary facility.[49] "The government had given us a monopoly on certain projects like building the casks," Stallings said.[50]

Negotiator Stallings also changed how financial assistance was provided to jurisdictions. With Congress blocking advanced grants, Stallings concluded that directly entering into cooperative agreements with potential hosts would be the best approach and worked out an initial transfer of $250,000 from the Office of Civilian Radioactive Waste Management (OCRWM) to support such agreements. The negotiator's office would successfully establish cooperative agreements with counties, tribes, and universities.[51]

Instead of initiating another voluntary process where jurisdictions were asked to step forward of their own accord, Negotiator Stallings looked at closed military bases and facilities and laboratories owned by the DOE and actively reached out to inquire if they might consider hosting a consolidated interim storage facility. The office had the capability to offer "a package of probably in the neighborhood of a billion dollars," Stallings said.[52]

Stallings noted, though, the very real challenge of public backlash associated with the stigma of nuclear waste that he'd previously mentioned. "I think my biggest problem was that when I'd come to town … all of a sudden all the anti-nukes would gather and protest … 'It's gonna kill everyone,'" he said. "No politician worth their salt … was going to invite that kind of problem…. Most [politicians] are looking to re-election…. They knew that just talking to me … would be a major campaign issue…. Some of them said, 'Hey, what you're offering is wonderful, but I just can't set myself up with that kind of issue to be beaten up with."

To help address this, Negotiator Stallings explained to groups potentially interested in hosting a storage facility what nuclear waste was and how it was stored, including at facilities near major population centers. "We took one group out on a picnic by Calvert Cliffs in Maryland…. They said, 'Where's the waste?' and I said, 'Over there by those concrete blocks'…. They said, 'That doesn't look very scary,' and I said, 'It's not,'" Stallings recalled. "We were fighting an uphill battle the whole time—mainly perception, not reality."

Stallings did note some progress along the way. "Our first initiative was to states that had provided nuclear materials in the first place, like Wyoming and Utah.... We had a couple other governors [too]. I had almost a deal set until Department of Energy closed us down," he said.

Negotiator Stallings also had conversations with tribes, including those identified during the time of the first negotiator. "We had two or three Indian tribes that were expressing interest.... We did talk with them and brought a few of those to Idaho to see what nuclear waste is all about ... how it is currently stored," he said. "I think they would have taken it had [officials and congressional delegations from adjacent states] not put the kibosh on it." Stallings mentioned one Goshute band in Utah, "in probably one of the most remote places on earth," expressing interest.[53] He took engaged tribal members to see the storage area at Calvert Cliffs, as he had with other groups. "They were stunned; it was almost boring to them," he said.

In interviews here and elsewhere,[54] Negotiator Stallings expressed a view that at times the DOE and members of Congress didn't seem to want anything to distract from Yucca Mountain—the prospect of a negotiated consolidated interim storage facility might conceivably take some pressure off that repository project. In that vein, Stallings saw the DOE as wanting to shut the negotiator's office down, rather than have it extended. "Department of Energy spent a ton of money building Yucca Mountain," he said. "[When] they got word I was close, they shut me down.... I went round and round with the Secretary of Energy [Hazel R. O'Leary] a couple of times, but she had more clout than I did."[55]

According to Stallings, there was some debate over when, barring an extension from Congress, the office would close. He noted there were some legal discussions, but "we saw the writing on the wall, wrapped up the office [and] walked away into the sunset."

In his last report to Congress, Negotiator Stallings wrote that he had established "good lines of communication" with three states and was in the process of working to expand that number. In this respect, he said the closure of the office left him with "the greatest sense of lost opportunity."[56]

"I have concluded that the management, storage, and disposal of nuclear waste presents one of the greatest challenges to the principles of federalism," Stallings said. "I cannot say for certain that my efforts would have resulted in a state willingly accepting spent fuel storage, but I do know the opportunity for meaningful discussions existed."

"Unfortunately, this Office may have been the last chance to develop mutually agreeable solutions," he said. "With its demise, we as a nation are left with an unhealthy reliance on federal supremacy at a time when mutual solutions to issues such as this are more important than ever."

Policy Relevance Today

The negotiator era ended without an agreement between the negotiator and a state or tribe (and, therefore, without Congress needing to approve such an agreement). However, tangible signs of local interest at both the county and tribe levels indicate that with more time, continuity, and other modifications to the office, an agreement might have been reached.

Almost 30 years later, a number of developments argue for broadly rethinking the US nuclear waste program and utilizing lessons learned from the negotiator era.[57] As mentioned, the BRC recommended in 2012 that the federal government pursue a consent-based approach to siting new facilities "similar to the process established in the expired Nuclear Waste Negotiator provisions." This section considers ways Congress might use the existing statutory provisions in Title IV of the NWPA to the program's benefit. Two of the most straightforward actions Congress could take would be to either extend the expiration date for the Office of the Nuclear Waste Negotiator and provide funding for it or amend the law to direct the secretary of energy to follow the negotiator provisions in Title IV as part of the DOE's consent-based siting endeavors.

Developments in Nuclear Waste Management Since the Negotiator's Office Expired

The Yucca Mountain project, which Stallings perceived the DOE to be trying to protect (sometimes at the expense of the negotiator's work), has reached a stalemate. Due to opposition from the State of Nevada, no appropriations have been made to move the project forward since 2010.

On the other hand, since the negotiator era, the DOE successfully opened the Waste Isolation Pilot Plant (WIPP) in New Mexico in 1999—the nation's only operating deep geological repository for the disposal of nuclear waste. WIPP is legally restricted to the disposal of defense-generated TRU nuclear waste. The plant has now been in operation for over a quarter century, though it did suffer two accidents in 2014 that led to a shutdown for a few years—adding costs and delays—while safety measures were improved. The relationship between the State of New Mexico and the federal government was strong enough that the facility returned to disposal operations in 2017.

Elsewhere in the world, countries including Finland, Sweden, France, Canada, and others have been making progress on commercial SNF disposal. Finland, as the world leader, has been building its repository since 2016 and is on the verge of beginning disposal operations. If and when more repositories open, it is possible the stigma both negotiators mentioned of hosting waste facilities may lessen.

In addition, the DOE, the US Navy, and the State of Idaho signed an agreement in 1995[58] that governs nuclear waste management in the state, allowing the navy to ship spent naval fuel from aircraft carriers and submarines to the Idaho National Laboratory for interim storage. This collaboration and its safe execution provide one example of a successful negotiation of a consent agreement for a temporary storage facility for at least one type of SNF. (While the agreement stipulates that navy SNF is to be removed by 2035, there is currently no momentum toward this milestone, and if it is not met, the federal government will pay a daily fine, and the state will have the power to stop any further shipments.)

Given Negotiator Leroy's NIMTOO comment, it is worth observing that the agreements between states and the federal government regarding nuclear waste management facilities cited earlier did not result in political deaths for the Democratic and Republican governors who signed them. At the time, New Mexico law prevented governors from running for consecutive terms, but after his second term (during which he signed the consultation and cooperation agreement for WIPP), Bruce King would run for governor again several years later and win.[59] In Idaho, Governor Philip Batt (who signed the nuclear waste agreement with the DOE and the navy) decided not to run for reelection based on his age, but he was popular within the state at the time of his retirement and reportedly likely to win.[60] Furthermore, in 1996 Idaho citizens voted—by a wide margin: 62.5 percent to 37.5 percent—against a proposition that would have nullified the "Batt agreement."[61])

Another development since the early 1990s has been broken contracts between the federal government and utilities that own nuclear power plants to remove SNF from those plants, which now represent a liability for the US government of tens of billions of dollars.[62] Reducing this liability and allowing local communities to reclaim the land where shut-down nuclear power plant sites are still storing SNF will require building either repositories or consolidated interim storage facilities.

Related to the lingering SNF at power plants, Congress directed the DOE in 2020 to pursue a "consent-based" approach to developing a consolidated interim storage program for commercial SNF[63]—without providing, however, a definition for what "consent based" was to mean. What's more, the NWPA does not permit the DOE to construct a consolidated interim storage facility until the NRC has issued a license to construct a repository—an event that has not happened and does not seem imminent. Given the lack of progress on a permanent repository, states may question how "interim" a given facility in their state would wind up being. Private developers of consolidated interim storage facilities in New Mexico and Texas have run into opposition to their projects based in part on this line of reasoning.[64]

Following appropriations from Congress, the DOE issued a request for information in December 2021 for feedback on a consent-based siting process, how best to enable meaningful participation,

and the role of interim storage in the US waste management system.[65] The DOE received 225 responses and issued a report on the findings and analysis of the feedback. The agency has since awarded roughly $2 million to 12 consortia to allocate to parties interested in learning more,[66] but as of August 2024, the DOE is not seeking applications for consolidated interim storage facilities and is not funding any specific communities to study hosting a facility.

Options for Congress Related to Provisions in the NWPA

Former Senator Jeff Bingaman of New Mexico asserted on the 25th anniversary of operations at WIPP that the consultation and cooperation agreement between his state and the DOE regarding the project should be a template for future important national projects.[67] That agreement was subsequently put into law by Congress with the WIPP Land Withdrawal Act (introduced by the two senators from New Mexico)—much as the provisions in Title IV of the NWPA envisioned Congress approving in law a written agreement between the negotiator and a state for a consolidated interim storage facility or a repository.

There would be advantages and disadvantages to using this type of approach (laid out in Title IV of the NWPA) moving forward. It would, for example, be a departure from earlier US policy on SNF and HLW management by giving states an explicit veto (or perhaps a "pocket veto" in the sense that doing nothing—not signing an agreement—would be the veto). The NWPA had previously only allowed a state governor to submit a notice of disapproval to Congress, but that notice could be overridden by the two chambers of Congress (which happened with Yucca Mountain).

On the other hand, even without an explicit veto in statute, the case of Yucca Mountain shows that states have other ways to block projects. If states know that the law requires a written agreement for a project to move forward, it might make it easier for them to at least explore hosting such a facility without worry that at a later point the DOE (or another implementing body) will simply ignore their wishes and move forward with its own plan.

There are at least two ways Congress could use Title IV in the NWPA to define a state role in future consent-based siting efforts for SNF and HLW management facilities: reviving the nuclear waste negotiator position or requiring the secretary of energy to adhere to the process in Title IV.

Reinstating the Negotiator Role

The simplest option Congress could consider is reinstating the expired negotiator's office and providing funding for it. The statutory language surrounding the office still exists in the NWPA, so Congress would merely need to change the expiration of the office in addition to providing appropriations. An administration would then need to nominate a negotiator, followed by Senate confirmation. A future negotiator could design a new approach—perhaps borrowing from the previous negotiators' efforts—with the understanding that, ultimately, a written agreement will be required, followed by congressional blessing of that agreement.

Requiring the Secretary of Energy to Use the Approach in Title IV

An alternative option Congress could consider is directing the secretary of energy to use the consent-based approach in Title IV of the NWPA for siting efforts. The secretary of energy already has the authority to enter into agreements with states and tribes regarding nuclear waste management facilities, as occurred with the Batt agreement in Idaho. In a practical sense then, such direction would define a written agreement as the measure of "consent" at the state or tribal level based on the experience with negotiated agreements with Idaho and New Mexico for SNF storage and nuclear waste disposal facilities, respectively. Not only would a DOE approach premised on Title IV require a written agreement between the secretary and a state or tribe, but Congress would then also have to approve the agreement later (allowing an opportunity for, e.g., the pertinent host state's congressional delegation to negotiate provisions that it wants) and likely, at the same time, make changes to the NWPA to allow a consolidated interim storage facility to move forward.

Weighing the Two Options

A separate negotiator's office would be more independent of the DOE and perhaps more importantly be perceived by states and tribes to be independent of the DOE and thus better able to negotiate without carrying the historical baggage of the agency (including its jettisoning of the second repository program in 1986). On the other hand, the secretary of energy, by virtue of the DOE's large scope and budget, has a very high profile in the national landscape (likely making it easier to recruit high-profile national politicians, such as former governors, to this role than to a stand-alone negotiator position) and a clear ability to negotiate provisions that could be of interest to states and tribes beyond those only related to HLW and SNF.

But the secretary of energy has many competing demands, and incoming secretaries will likely have priorities and their own legacies in mind that likely do not include nuclear waste work. The secretary position would also be subject to the usual flux associated with administration changes, whereas the length of time an independent negotiator could hold the position could be amended to provide greater continuity across administrations.

Lessons for Consent-Based Siting Efforts from the Negotiator Experience

Aside from the advantages and disadvantages of the two potential options discussed in the previous section for utilizing current law, implementation of a negotiated approach to US nuclear waste management could benefit from lessons learned from the different approaches employed by the two negotiators in the past.

A process for finding new consolidated interim storage facilities, for example, could follow Negotiator Leroy's example of an open solicitation to states, local governments, and tribes to participate in multiple phases of increasingly detailed studies on what hosting such a facility would entail.

"There well may be many jurisdictions out there that would be able to propose and sustain local support for a creative solution that built them new schools and roads and airports and universities and water systems and diversion dams and all the kinds of things that we were talking to people about as compensable concepts,"[68] Leroy said.

In each phase, local governments or tribes would have the option to remove themselves from consideration or continue studying the issue in greater detail. In that way, it would function similar to Canada's voluntary siting process for a deep geological repository, which was initiated in 2010. That effort began with 22 communities expressing interest. Subsequent stages narrowed the number of sites under consideration, and in 2019 the Canadian Nuclear Waste Management Organization named two sites still under consideration. A similar approach for the United States would better match international efforts as well as the more modern concept of a "phased, adaptive" approach—which reports[69] in the United States have recommended—that responds to developments in real time, both political and technical, as the siting effort develops (which would describe Canada's tack as well).

Along the lines of Negotiator Stallings's work, a new effort could actively reach out to areas with federal facilities that have closed and make proposals, including opportunities related to involvement in the supply chain that supports the interim storage industry as well as potential uses of SNF. The BRC agreed that a consent-based siting effort should include the option of a waste management organization approaching communities that it believes can meet the siting requirements.[70]

New Direction

But Negotiator Leroy thinks that a program today, perhaps by necessity, must look different. "I think we need a national leader to make it a top or the top priority and create a solution from the top that is well-defined enough and lucrative enough for a local entity to raise their hand without trying to look for an entity to propose its own solution," he said. "There's simply too much complication in government these days for local leaders to invest their time and their political popularity in flirting with the idea of nuclear waste without having much more definition from the federal government on exactly what it is that is proposed for exactly what remuneration. The distrust of the national government, in my opinion, is a great disincentive for anybody in a local political office or state political office starting a dialog such as we asked them to start back in the 1990s without knowing where something might end up."[71]

Robert Mussler, the former general counsel for David H. Leroy and deputy negotiator for Richard Stallings, has suggested a new approach.[72] He notes that none of the past negotiators' interactions in response to expressions of interests involved negotiator-led coordination between local officials, the governor, and congressional representatives. Such initial and ongoing coordination would have clarified the practical reality of any expressions of interest received.

"You really can't expect governors, congressmen, and senators to be satisfied watching without any real involvement as a Federal agency works directly with a local community to site a major Federal program," Mussler said in email correspondence with the author.[73] In the past negotiator experience, this exclusion consistently resulted in the governor eventually stepping in, directly or indirectly, and ending the process.

"Perhaps the lessons learned from both the Yucca Mountain and Negotiator experiences is that 'consent based' means essential coordination occurs from the very beginning between the relevant local, state, and congressional representatives without any expressed objection. Consent would at least mean that all three levels of government were 'informed and without objection,'" Mussler said. "This would promote constructive discussions in response to expressions of interest. Such an approach may set the bar high, but if that results in a lack of expressions of interest, then maybe the message should be that the incentives offered to support interest are probably inadequate."

What a Negotiator Approach Alone Will Not Fix

The BRC identified a number of challenges to the US SNF and HLW management program and made recommendations for how to fix them. None of the major recommendations to Congress have been acted on, apart from, in a limited sense, the aforementioned money appropriated to

begin a consent-based siting process for a consolidated interim storage facility. Simply reinstating the negotiator position will not solve most of the challenges facing the US program, as identified by the BRC. Those would need to be tackled alongside any efforts to reinvigorate negotiations for siting facilities.

To begin with, from a budget point of view, the negotiator position presents no advantages over the current program, which has had to compete for appropriations with other priorities under the same budget cap; it would not have access to the fees utilities have already paid into the Nuclear Waste Fund (NWF), for example. As the BRC noted, while fees paid into the NWF for management and disposal of SNF were deemed many years ago to be "mandatory," actual spending on the program has been discretionary.[74] Despite the clear statutory and contractual responsibility of the federal government to take and dispose of commercial SNF, appropriations regularly fall short of budget requests for the DOE program,[75] and there is no reason to believe a similar dynamic might not occur with a negotiator's office (either headed by the secretary of energy or an office separate from the DOE) leading the program.

From a management point of view, the negotiator position as currently structured would still be subject to turnover following presidential elections. Each new administration may decide to nominate a new candidate who will have to go through Senate confirmation. There may even be turnover between an administration's first and second terms, as there regularly is at all levels of the DOE (e.g., secretaries, under secretaries, and assistant secretaries). In the case of a reconstituted negotiator's office, however, Congress could simply provide a longer length of time and greater continuity provisions to ease the transition to new administrations. Negotiator Leroy noted that Congress could have designed the negotiator's post to have a stated term, but since it didn't "the bottom line was that both the politics of not being renewed and the politics of changing the negotiator ended up being damaging to the personal diplomacy and continuing efforts of the first office and perhaps didn't give the second office as fair a chance to continue those initiatives or start new initiatives as we had had at the outset."[76]

(Additionally, some actions needed elsewhere in the federal government to move the nuclear waste program forward fall outside the scope of what a negotiator or even the secretary of energy would have the authority to control, such as development of new generic standards for disposal facilities by the US Environmental Protection Agency.[77] Actions by Congress and other federal agencies are needed in these cases.)

In addition to these challenges, if the negotiator position is to be resurrected or the secretary of energy directed to carry out a search solely for a consolidated interim storage facility using the provisions in Title IV of the NWPA, the effort will be less likely to succeed without a concurrent search

for a new repository, as recommended by the BRC. This is because states will understandably question how "interim" a site they host will be in the absence of a repository program.

The past negotiator experience also reveals that negotiations with Indian tribes will be complicated; though tribal nations are legally sovereign and treated as such under the NWPA, the practical reality is that if officials from states adjacent to tribes considering hosting a storage facility are opposed to such a facility, they may—or likely will—find ways to block them (including, and perhaps especially, through their congressional delegations).[78]

The overall political environment of the 1990s also differed in marked ways from that of today, and such differences are beyond what Congress can fix. Negotiator Leroy said, "Generally speaking, I think it's a tougher day to make any kind of progress with an overarching federal government program, simply because at every level of government, particularly the national, there's less trust in government.... Simply starting our program again in an era where budgets are already broken and trust in government is barely existent makes the same approach that we tried in the 1990s orders of magnitude more different or more difficult."[79]

"The problem with nuclear waste solutions is that there is no immediate national will to solve the program without experiencing some crisis," Leroy added. "And there is no significant national leader in Congress or who has occupied the White House recently that's willing to spend political capital necessary to solve the problem."

According to Negotiator Stallings, the trust problem is indeed real—especially with the program housed at the DOE. "[The] solution is, make a separate agency . . . let it build its own reputation with trust," he said. "Department of Energy is like another tentacle of the federal government [and] right now that's the most untrusted thing in the world."[80]

Conclusion

The negotiator position was created at a time when the US SNF and HLW management program was in crisis. Following the Reagan administration's move to ignore NWPA requirements to develop a second repository, Representative Mo Udall sought to provide an alternative to the top-down program that he felt was in trouble. In some ways, the approach he came up with was ahead of its time—created in 1987 it was somewhat akin to the consent-based approaches that have been pursued in recent decades in countries such as Finland, Sweden, and Canada. The US negotiator process similarly allowed local governments to remove themselves from consideration at any time during phases of increasingly detailed (and costly) study.

While the Office of the Nuclear Waste Negotiator operated from August 1990 to January 1995 without producing an agreement, the two negotiators felt they were making progress in their discussions with state, local, and tribal entities. After the negotiator's office closed, one Native American tribe—the Skull Valley Band of Goshute Indians—that had previously engaged with the negotiator continued to pursue a consolidated interim storage project that ultimately culminated in an NRC-licensed facility.

Neither negotiator had very much time to work with. For Negotiator Leroy, the elections in November 1992 put his office into a kind of limbo after just over two years in existence and were followed by his replacement by the incoming administration. For Negotiator Stallings, the office expired a year and three months after he was confirmed for the job. These truncated spans left limited time to build trust, complete studies, and work out agreement details.

In addition to what would have already been a challenging job, the position was created in the same law as the "Screw Nevada" provisions that named a small and—at the time—politically weak state to host a deep geological repository without its consent. As the governor of Utah and Negotiator Leroy explained, this likely made states more cautious about even showing a modicum of interest in the possibility of hosting a facility, lest the federal government later decide to simply force the project through.

Much has changed since the first half of the 1990s, when the negotiators were carrying out their duties. While efforts at Yucca Mountain have stalled, successful agreements for nuclear waste management facilities in the US have resulted in TRU waste disposal at WIPP in New Mexico as well as interim storage of naval SNF at a DOE lab in Idaho.

The recent, congressionally directed effort at the DOE to begin a "consent-based" siting program to identify potential hosts of a consolidated interim storage facility faces an uncertain future, and

the approach in Title IV in the NWPA would provide two elements of a high-level answer to one key question facing the program: what will "consent" look like? In addition to whatever measures local and state governments choose, it would require a written agreement between the federal government and a state—the latter level of government having been the main sticking point for hosting nuclear waste management facilities in the past. The process in Title IV would also require Congress to approve the agreement, at which time it could also make any necessary amendments to the NWPA for a consolidated interim storage project to move forward.

A federal program today premised on a negotiated approach with states could borrow from lessons learned during the negotiator era, such as the importance of ensuring greater continuity for the office and having the benefits of hosting such a facility defined right at the beginning of public discussion to be weighed against any perceived risks. While an approach based solely on the negotiator provisions of the NWPA would not address all the challenges facing the US SNF and HLW management program, it could help give some definition to local and state officials, as well as members of Congress, of what will at a minimum be required as part of consent to hosting associated facilities and encourage greater engagement.

Appendix A. Selected Bills from 1987 Focused on the US Nuclear Waste Program

The following description of bills from 1987 that would alter the US SNF and HLW management program is not intended to be a definitive list of all the bills concerned with the US nuclear waste program but instead is meant to illuminate the varying activity around this topic at the time, which informed much of the early discussion in the paper.

1. HR.266 (0 cosponsors) suspended the site selection process.
2. HR.509 (16 cosponsors) removed the requirement for a second repository, removed the 70,000 metric ton cap on the first repository that was to be in place until the second repository was in operation, and prohibited funds from the Nuclear Waste Fund (NWF) from being used for a second or subsequent repository.
3. HR.1185 (25 cosponsors) terminated federal activities with respect to the second repository, prohibited the secretary from nominating or recommending any crystalline rock site for characterization, and removed the 70,000 metric ton cap on the first repository.
4. HR.1252 (8 cosponsors) removed the requirement for a second repository and removed the 70,000 metric ton cap on the first repository.
5. HR.1324 (8 cosponsors) removed the requirement for a second repository, removed the 70,000 metric ton cap on the first repository, and prohibited funds from the NWF from being used for a second or subsequent repository.
6. HR.1410 (11 cosponsors) terminated federal activities with respect to the second repository, prohibited the secretary from nominating or recommending any crystalline rock site for characterization, and prohibited funds from the NWF from being used for a second or subsequent repository.
7. HR.2189 (20 cosponsors) suspended the site selection process and created a new federal radioactive waste agency to implement the US nuclear waste program and nominate sites for repositories. The new entity would be an independent agency within the executive branch and have a director that served a six-year term and assumed the responsibilities of the secretary of energy with respect to carrying out duties under the NWPA.

8. HR.2475 (4 cosponsors) enabled states located on a river or aquifer affected by the siting of a repository to have the same rights and opportunities to participate in the site selection, review, and approval process as the host state.
9. HR.2885 (2 cosponsors) authorized the secretary to delay site-specific activities for a second repository if the secretary submitted his or her determination and the reasons for such determination to Congress and Congress, by law, approved the determination.
10. HR.2888 (58 cosponsors) found that the public had lost confidence in the federal radioactive waste program, which was the result of the "apparent inability" of the Department of Energy to implement such a program in a scientifically sound and politically unbiased fashion. This bill also created a commission to study the US nuclear waste program and make recommendations to Congress. While the commission was working, the secretary of energy was prevented from expending money to conduct site characterization activities at any site or recommend any site.
11. HR.2967 (7 cosponsors) created a commission to study the US nuclear waste program and make recommendations to Congress. While the commission was working, the secretary of energy was prevented from expending money to conduct site characterization activities at any site or recommend any site. It also established the nuclear waste negotiator and the Nuclear Waste Technical Review Board, an independent entity to evaluate the secretary of energy's activities on nuclear waste.
12. HR.3077 (0 cosponsors) suspended all expenditures of the Nuclear Waste Fund or any other source of funds for any site-specific activity under the NWPA until Congress later authorized a resumption in activities. It also authorized the secretary of energy to develop and construct at least four MRS facilities in four regions of the United States.
13. HR.3430 (0 cosponsors) directed the secretary of energy to pick a single site by 1989 from the sites previously selected for characterization as a candidate site and prohibited work on the second repository. Among many other provisions, it also established the nuclear waste negotiator.
14. HR.3499 (1 cosponsor) created an Office of Alternative Disposal Methods to explore alternatives to deep geological disposal of HLW and SNF and encouraged research on sub-seabed disposal of nuclear waste.
15. S.621 (6 cosponsors) terminated activities on the second repository and removed deadlines for the second repository. It also prohibited the secretary of energy from nominating or

recommending crystalline rock sites for site characterization and lifted the volume restriction on the first repository. It established the Nuclear Waste Repository Review Commission: if the secretary of energy had not commenced disposal of HLW by January 31, 1998, all activities would cease until the commission submitted its report and Congress reviewed the report and specifically authorized the continuation of the program.

16. S.642 (4 cosponsors) removed the requirement of a second repository and lifted the volume cap on the first repository.

17. S.833 (5 cosponsors) prohibited the Department of Energy from transporting HLW and SNF through densely settled areas of the United States if the affected local government could identify a safer route.

18. S.839 (4 cosponsors) authorized the secretary of energy to enter into incentive agreements with certain states and affected Indian tribes concerning the storage and disposal of HLW and SNF and specified payment amounts for different milestones.

19. S.935 (1 cosponsors) required the secretary of energy to carry out activities related to the first and second repositories in accordance with the OCRWM mission plan dated January 1987. Authorized a delay in the second repository if the secretary of energy could submit reasons for the delay to Congress.

20. S.1007 (3 cosponsors) enabled states located on a river or aquifer affected by the siting of a repository for HLW or SNF to participate effectively in the site selection, review, and approval process.

21. S.1141 (1 cosponsor) set the United States on a path of long-term storage of SNF at or near the point where that spent fuel was generated, in anticipation of eventual reprocessing of that fuel or disposal of a far less dangerous material in a repository. The bill prohibited SNF from being transported by the secretary of energy to an HLW repository until the fuel had been stored for a period of at least 50 years from the time it was removed from the reactor's core.

22. S.1211 (0 cosponsors) required the secretary of energy to contract with the National Academy of Sciences for a study on the feasibility of reprocessing spent nuclear fuel. The bill would suspend site-specific work on deep geological disposal until 180 days after the National Academy of Sciences submitted the report to Congress.

23. S.1266 (2 cosponsors) suspended until 1998 the siting or construction of any repository, directed the secretary of the interior to conduct studies on potentially suitable sites for a deep geological repository, required the president to submit to Congress by 1998 at least one site for

characterization activities for a repository, and authorized the secretary of energy to develop and construct three additional monitored retrievable storage facilities.

24. S.1395 (12 cosponsors) required transportation packages for HLW and SNF to be certified by the NRC and adopted by the secretary of energy and secretary of Defense after they had been proved in actual tests on full-scale packages, not simulated tests; in tests on scale models; or in engineered analyses. Among other provisions, the bill also prevented the secretary of transportation from approving a route for the transportation of HLW or SNF through an area designated by the Bureau of the Census as an urbanized area if the governor of the affected state recommended to the secretary a significantly safer route.
25. S.1428 (1 cosponsor) encouraged work on sub-seabed nuclear waste disposal.
26. S.1481 (2 cosponsors) directed the secretary of energy to select a preferred site for the first repository by January 1, 1989; directed the secretary of energy to construct and operate a monitored retrievable storage facility at one of two specified sites in Tennessee; prohibited the secretary of energy from conducting site-specific activities regarding a second repository; and required the secretary of energy to report on the need for a second repository by 2007.
27. S.1668 (0 cosponsors), among many provisions, directed the secretary of energy to select by 1989 the preferred site for the first repository; annulled the proposal to locate a monitored retrievable storage facility in Oak Ridge, Tennessee; prohibited the secretary of energy from conducting site-specific activities regarding a second repository; and required the secretary of energy to report on the need for a second repository no later than 2010.
28. S.1980 (0 cosponsors) created a commission to study the US nuclear waste program and make recommendations to Congress. While the commission was working, the secretary of energy was prevented from expending money to conduct site characterization activities on any repository. Among other provisions, it also established the nuclear waste negotiator.

Appendix B. The 1991 and 1992 Annual Reports to Congress

This appendix provides more detail from the two annual reports of the Office of the Nuclear Waste Negotiator.

The 1991 Annual Report

The "1991 Annual Report to Congress" from the Office of the Nuclear Waste Negotiator[81] noted several important initiatives, including the following:

- The office sent letters of introduction on May 3, 1991, to Indian tribal leaders and state and territorial governors explaining the negotiator's mission. The letter stated that the office was to "make resources and information available upon which prospective hosts may make their own judgments about whether to proceed with discussion and negotiation."
- The office published in the Federal Register on June 5, 1991, an announcement concerning the availability of feasibility assessment grants. The 1991 annual report stated that the grants enabled various jurisdictions to independently assess the feasibility of hosting a consolidated interim storage facility and "have helped to set the tone for any formal discussions that may ensue through this Office." That is, the prospective host was able to retain experts of its own choosing to study the issues that it deemed important.
- The office formally invited on October 7, 1991, Indian tribal leaders and governors of all US states and territories to express an interest in "acquiring more information and opening preliminary discussions which might, or might not, lead to formal dialogues and negotiations."

The 1991 annual report stated that the Office of the Nuclear Waste Negotiator abided by the following principles:

- The process must be truly voluntary.
- Requests for information and preliminary discussions are not viewed as a commitment to proceed further.
- All dialogues are terminable at the will of the prospective host.
- All discussions should begin with the thoughtful evaluation of issues concerning health, safety, and the protection of the environment.

- There are no irrelevant issues.
- A prospective host is entitled to achieve equity for helping to solve a national problem, and the nature and the means of achieving that equity should represent the concerns, needs, and desires of the host.
- The process must encourage broad public participation and seek to consider credibly the views of all affected stakeholders.
- The success of the process is possible only through full participation.

The 1991 annual report notes the "positive" responses to the initiatives described above. Shortly after the formal invitation on October 7, the negotiator's office received its first application for a Phase I feasibility grant to study consolidated interim storage from the Mescalero Apache Tribe in Mescalero, New Mexico. By January 1992, the office had received six additional applications for feasibility grants: Grant County, North Dakota; the Chickasaw Nation in Oklahoma; the Sace and Fox Nation in Oklahoma; Fremont County, Wyoming; the Prairie Island Indian Community in Minnesota; and the Yakama Nation in Washington.

The 1991 annual report indicates that the office had only about a dozen staff, and total obligations in fiscal year (FY) 1991 of $1.6 million, with the budget authority for FY 1992 at $2.5 million.

The plan was for recipients of preliminary grants (Phase I) to receive up to $100,000 to be used over 6 months. Recipients of Phase I grants would potentially be eligible to receive advanced grants (Phase II). The Phase II grants would be awarded for a maximum of 12 months and for not more than $3 million, though with an initial allotment in Phase II-A of not more than $200,000 "to demonstrate successful preliminary intergovernmental coordination and siting possibilities."

The 1991 annual report describes Phase II-A as follows:

The applicant produces written materials that specify certain details of what a proposal might contain and specifies that coordination with other affected units of government has been accomplished. Initial activities for Phase II funding, limited to $200,000, include the following:

1. conduct of public information activities;
2. participation in MRS meetings; and,
3. for a state or local unit of government, or Indian tribe, execution of a letter in which the governor of the state, or chief executive of the tribe, respectively, in an area that has been identified to be considered for a potential MRS site, notifies the office that

a) the state, or Indian tribe, is requesting to enter into credible formal discussion with the negotiator, which may lead to an agreement for presentation to Congress;

b) one or more areas to be considered for a potential MRS site has been identified;

c) the area proposed is within the jurisdiction of the applicant, and the applicant has identified the means by which it has control of the area; and

d) appropriate intergovernmental notification and coordination has been conducted.

For Phase II-B, the annual report states the following:

A state or Indian tribe may decide to enter into credible and formal discussions with the federal government through the negotiator, which may lead to development of an agreement for submission to Congress. Site studies and other sophisticated technical and political choices must be completed before a willing host with a technically qualified site can negotiate a reasonable agreement. Additional Phase II funding, up to $3,000,000 dollars, is available for the following activities:

a) continued feasibility studies—environmental documentation, impact analysis, and infrastructure surveys;

b) appropriate intergovernmental notification and coordination;

c) conduct of public information activities;

d) participation in MRS meetings;

e) identification of site(s) to be considered for a potential MRS facility;

f) formal discussions and negotiations with the office that lead to a proposed agreement for presentation to Congress; and

g) other appropriate and related activities.

Notably, jurisdictions retain the right to opt out of the process at any time during Phase II. No commitment to accept an MRS exists until the negotiated agreement has been enacted into law. Moreover, it is not necessary for jurisdictions to apply for, be awarded, or use federal grants in order to begin preliminary dialogue or negotiations with the office. They may do so directly at any time.

And with respect to negotiated agreements, the 1991 annual report states:

As negotiations commence, preparation of an environmental assessment will begin. The Negotiator encourages the holding of open public meetings during this process. The environmental assessment

is to be completed as the Negotiator and the interested state or Indian tribe conclude their negotiated agreement.

A written agreement for the construction and operation of a facility must contain the terms and conditions, including the financial and institutional arrangements, which are deemed to be reasonable. The statute also requires that the host be "willing" and the site be "technically qualified."

In the order completed, the Negotiator will formally submit one or more negotiated agreements and environmental assessments to Congress. An agreement becomes effective when acted upon by Congress and signed into law by the President.

In the 1991 annual report, the negotiator said that, due to the voluntary nature of the process, the prospective host will be given the "flexibility and resources to reach its own conclusions, the Office will not impose arbitrary deadlines." That is, even though the negotiator was to try to work in an expeditious manner, along the lines of the timelines described above, public concerns and locally required or desired processes would not be shortchanged in blind obedience to these timelines.

In the conclusions of the 1991 annual report, the negotiator stated that he believed "negotiated, voluntary hosting of storage and disposal facilities can occur given the legitimate opportunity to do so." The conclusions of the report assessed that the voluntary process was working to restore public trust and confidence and that the relative success to date was due to a commitment and ability to present and make available objective and credible information.

The 1992 Annual Report

According to the "1992 Annual Report to Congress,"[82] 7 jurisdictions applied for Phase I grants in 1991, and 13 more applied for Phase I grants in 1992. Of these 20 applications for Phase I grants, 10 were awarded in 1992.[83]

In addition, the 1992 report noted the first awards for Phase II grants. The Mescalero Apache Tribe of New Mexico was awarded a Phase II-A grant on April 21, 1992. On October 28, 1992, the Skull Valley Band of Goshutes filed an application for a Phase II-A grant.

The negotiator is quoted in the 1992 report as saying, "We target no one, appreciate those who say 'maybe,' and absolutely respect those who say 'no.' The potential host has total discretion to decline or drop out at any stage of studies or dialogue for any reason, or for no reason at all, without penalty."

The 1992 report states that actual outlays for FY 1991 and FY 1992 were $1.6 million and $1.743 million, respectively.

The negotiator recommended to the secretary of energy in the 1992 report that the Phase II-A and

Phase II-B process be modified in a variety of ways because the Mescalero Apache Tribe experience showed that "where significant surrounding community, governor's office, and congressional delegation resistance arose during the early public involvement process, the sum of $200,000 was insufficient to complete the tasks required at that stage." The Mescalero Tribe requested an additional $300,000 to continue Phase II-A activities, which would be a new limit, as recommended by the negotiator, for all other grant applicants too.

Benefits sought by potential host locations are also noted in the 1992 report, based on discussions held with representatives and consultants for both states and tribes. The following "standard checklist of benefits ideas was usually presented":

1. infrastructure improvements including highways, railroads, waterways, airports, or other public projects;
2. environmental improvements including the cleanup of existing air, water, or water problems;
3. public school assistance programs;
4. higher education programs;
5. health care programs;
6. proposed co-locations of other federal projects or existing federal program expansions;
7. general economic development programs;
8. the transfer of ownerships of federal properties;
9. tax subsidy or property value protection programs;
10. public recreation improvement projects;
11. direct financial assistance;
12. local employment or products purchasing agreements; and
13. any other benefit, equity, assurance, assistance, or offset desired by the host and deemed a proper part of a reasonable agreement by Congress and the Executive Office.

The 1992 annual report does note instances of states and local jurisdictions deciding not to move forward in the MRS process. For example, in the case of Grant County, North Dakota, a petition was filed to recall the county commissioners involved with the Phase I grant, and the newly elected county commissioners declared the Phase I study completed the very next day, with no

intent to move to Phase II. In the case of Fremont County, Wyoming, after the Phase I study report was published in July 14, 1992, the governor terminated any further studies the next month. Two jurisdictions, Crittenden County, Kentucky, and Labette County, Kansas, were interested in learning more about hosting a consolidated interim storage facility and possibly applying for a grant, but the governors in each case were opposed, so they did not move forward.

The 1992 annual report noted that legislation had been introduced to prevent the DOE from awarding additional feasibility funds to the Mescalero Apache Tribe. The negotiator opposed efforts to include this language in appropriations for FY 1993, and it ultimately was not. But the report also called S.3094, introduced by Senators Jeff Bingaman and Pete Domenici of New Mexico in 1992, "potentially detrimental to the entire voluntary siting program." That bill would have prohibited Phase II-B grants unless the negotiator reported that there was a reasonable likelihood of several developments, including a storage facility complying with a state's environmental laws and the federal government obtaining necessary water rights for such a facility.

An appendix to the 1992 report included a letter to the incoming Clinton administration, stating that the negotiator believed the Office of the Nuclear Waste Negotiator would "succeed or fail by how it is handled during calendar year 1993." It offered a "willingness to stay in place during the critical months upcoming during 1993 to advance further toward negotiations, if that is the pleasure of the President."[84]

Also included in the appendix was a staff memo, wherein the negotiator described the difficulty associated with seeking a voluntary host for high-level nuclear waste, given the negative associations that Americans have with "things nuclear" (such as Hiroshima, the Cuban Missile Crisis, and the tragedy of Chernobyl). The memo added that the involuntary characterization of Yucca Mountain, Nevada, as a permanent repository had made matters "slightly more challenging" for the federal government to reach out for a willing host, given the associated perception that the "gloved hand" may contain an "iron fist." The memo concluded that the voluntary process was working, though, and that there was every reason to believe an agreement for consolidated interim storage would be available for congressional consideration "within the short term." It recognized, however, that the most significant impediment to the success of the program was the "public's lack of trust and confidence in the Federal government, and a concern about the consistency and commitment of Congress to follow through."

Notes

1. Barry Solomon, Mats Andrén, Urban Strandberg, "Three Decades of Social Science Research on High Level Nuclear Waste: Achievements and Future Challenges," *Risk, Hazards & Crisis in Public Policy* 1 (2010): 13–47, https://doi.org/10.2202/1944-4079.1036. Also see the paper prepared for the Blue Ribbon Commission on America's Nuclear Future (BRC) by Hank Jenkins Smith, "Public Beliefs, Concerns and Preferences Regarding the Management of Used Nuclear Fuel and High Level Radioactive Waste," February 2011, https://curie.pnnl.gov/system/files/documents/not%20yet%20assigned/hank_jenkins-smith_brc_paper_final.pdf.

2. Matt Bowen, "Forging a Path Forward on US Nuclear Waste Management: Options for Policy Makers," Center on Global Energy Policy, Columbia School of International and Public Affairs, January 28, 2021, https://www.energypolicy.columbia.edu/publications/forging-path-forward-us-nuclear-waste-management-options-policy-makers/.

3. For accounts of nuclear waste policy development in the United States, see Luther Carter's 1987 book, "Nuclear Imperatives and Public Trust," as well as Samuel Walker's "The Road to Yucca Mountain: The Development of Radioactive Waste Policy in the United States" from 2009.

4. There have been no budget requests to move the Yucca Mountain project forward in the Biden-Harris administration, and it is unlikely that a new administration under Harris would reinstate the budget request. President Donald Trump requested money for the project in his first three presidential budget requests but did not request any funding in his last presidential budget request after tweeting "Nevada, I hear you on Yucca Mountain and my Administration will RESPECT you!" on February 6, 2020.

5. Blue Ribbon Commission on America's Nuclear Future, *Report to the Secretary of Energy* (January 2012), https://www.energy.gov/ne/articles/blue-ribbon-commission-americas-nuclear-future-report-secretary-energy.

6. A Stanford University and George Washington University report from 2018 suggested elements of what a consent-based siting process would involve. See pages 61–74 of *Reset of America's Nuclear Waste Management* (October 15, 2018), https://fsi-live.s3.us-west-1.amazonaws.com/s3fs-public/reset_report_2018_final.pdf.

7. Committee on Appropriations, *Report to Accompany the Energy and Water Development and Related Agencies Appropriations Bills* (2021), https://docs.house.gov/meetings/AP/AP00/20200713/110879/HMKP-116-AP00-20200713-SD002.pdf.

8. This report will use the term "consolidated interim storage facility" except where quoting legislation or historical documents that use the term "monitored retrievable storage." Both terms refer to the same type of facility. See Chapter 5 of the BRC report for greater discussion on consolidated interim storage facilities.

9. The DOE describes at a high level what a consent-based process is about, including that it must be "flexible, adaptive, and responsive to community concerns," on its consent-based siting web page: https://www.energy.gov/ne/consent-based-siting. The page notes that a potential outcome could include a negotiated consent agreement.

10. Page viii of the BRC report states: "Experience with the Office of the Nuclear Waste Negotiator in the early 1990s also gives some grounds for hope. As quoted in a recent Massachusetts Institute of Technology report on nuclear waste storage issues, the first Nuclear Waste Negotiator, David Leroy, concluded that 'the volunteer siting process can work provided that the negotiator is given the resources and time to negotiate the terms of an interim storage facility and benefit package,' although he also recognized that 'the lack of a proposed repository makes the process more difficult.'" The passage cites, in particular, A. C. Kadak and K. Yost, "Key Issues Associated with Interim Storage of Used Nuclear Fuel" (Massachusetts Institute of Technology, 2010), 27–28, https://cybercemetery.unt.edu/archive/brc/20120620220810/http://brc.gov/sites/default/files/documents/mit_issues_with_snf_interim_storage_11-03-08.pdf.

11. For example, the act required the DOE to recommend to the president three candidate sites for characterization (in-depth evaluation) as a first geological repository by January 1, 1985, followed by completion of a detailed site characterization program and recommendation to Congress of a single site for development as a repository by March 31, 1987. Similarly, the NWPA required three candidate sites for a second repository to be recommended by July 1, 1989, and the recommendation of a single site for a second repository by March 31, 1990. A cap of 70,000 metric tons was placed on the first repository until the second repository was in operation, in part to ensure that there would in fact be a second repository.

12. This paragraph is explained in greater detail in Bowen, "Forging a Path Forward," 11–15.

13. The bills from 1987 identified on Congress.gov as affecting the US SNF and HLW management program are listed below but are also in Appendix A along with a short description: HR.266, HR.509, HR.1185, HR.1252, HR.1324, HR.1410, HR.2189, HR.2475, HR.2885, HR.2888, HR.2967, HR.3077, HR.3430, HR.3499, S.621, S.642, S.833, S.839, S.935, S.1007, S.1141, S.1211, S.1266, S.1395, S.1428, S.1481, S.1668, and S.1980.

14. To take one prominent example, the Senate Energy and Natural Resources Committee held a hearing on one bill, S.1668 ("The Nuclear Waste Policy Act Amendments Act of 1987"), which was ultimately reported favorably out of the committee. That bill would have directed the secretary of energy to select by January 1, 1989, a single preferred site from the three candidate sites (Hanford in Washington, Deaf Smith County in Texas, and Yucca Mountain in Nevada). The bill directed the secretary of energy to suspend work at other sites after the selection of the first site was made. With regard to the second repository, S.1668 prohibited site-specific activities at any site, unless Congress specifically authorized and appropriated funds for such activities. It also terminated ongoing research on granite (the type of rock formation present at the candidate Eastern sites) as a repository medium. The bill explicitly stated that the secretary was not required to nominate sites for a second repository or to recommend to the president sites for a second repository, and the president was no longer required to submit to Congress a recommendation of a site for a second repository. Instead, the secretary was merely to report to Congress no later than 2010 on the need for a second repository. The bill also annulled the selection of Oak Ridge for a consolidated interim storage facility (called a "monitored retrievable storage" facility in the NWPA). Much of S.1668 passed into law at the end of 1987 but with some critical differences.

15. *Radioactive Exchange*, "A Yuletide Gift to Nevada from the Other 49 States—a HLW Repository! New HLW Bill in Reconciliation Package Should Pass Congress by Weekend," December 1987, 1 and 10–12.

16. Nevada Commission on Nuclear Projects, *Report and Recommendations of the Nevada Commission on Nuclear Projects* (November 2019), 33, https://www.yuccamountain.org/pdf/2019-nwpo-report-to-commission.pdf.

17. Section 5041 of the PL 100-203.

18. 133 Cong. Rec. H. 6019, July 1, 1987. Vol. 133, No. 110, at H6019.

19. Omnibus Reconciliation Act of 1987 conference report, P777.

20. For example, at the September 18, 1987, House Interior Committee hearing, Congressman Joseph E. Brennan of Maine stated, "I also feel that it is appropriate to create the Office of Nuclear Waste Negotiator, who would send out invitations to States and Indian tribes to suggest dump sites within their jurisdictions. Personally, I think that the response list to those invitations will be extremely short."

21. For example, the WIPP Land Withdrawal Act was in effect a negotiated agreement that included limitations on the inventory of the facility and granted the State of New Mexico

Resource Conservation and Recovery Act regulatory authority over the facility.

22. Pub. L. No. 100-507. https://www.congress.gov/bill/100th-congress/senate-bill/2800.
23. Mark Holt, "Nuclear Waste Negotiator—a Fact Sheet," Congressional Research Service, May 5, 1994.
24. Tim Dahlberg, "Unenviable Task: Sell the Idea of a Nuclear Dump," *Associated Press*, May 1, 1991; Margaret E. Kriz, "He's at Least as Popular as a Tax Collector," *National Journal*, March 16, 1991; and Matthew Wald, "Hired to Be Negotiator, But Treated Like Pariah," *New York Times*, February 13, 1991.
25. David H. Leroy, interview with the author, June 30, 2023.
26. Office of the Nuclear Waste Negotiator, "1991 Annual Report to Congress," March 1992.
27. The actions taken by the negotiator's office in 1991 and 1992 are discussed in more detail in Appendix B, which describes the two annual reports from the negotiator's office for this time period.
28. Office of the Nuclear Waste Negotiator, "1991 Annual Report to Congress," March 1992.
29. Office of the Nuclear Waste Negotiator, "1992 Annual Report to Congress," January 1993.
30. The 10 jurisdictions awarded Phase I grants in 1992 were as follows: the Chickasaw Nation, Oklahoma; Fremont County, Wyoming; the Prairie Island Indian Community, Minnesota; the Sac and Fox Nation, Oklahoma; the Yakama Nation, Washington; the Skull Valley Band of Goshute Indians, Utah; the Eastern Shawnee Tribe, Oklahoma; San Juan County, Utah; the Ponca Tribe, Oklahoma; and the Fort McDermitt Paiute and Shoshone Tribe, Nevada.
31. Keystone Center, *The Keystone Center Assessment of MRS Public Involvement*, prepared for the Office of the Nuclear Waste Negotiator (May 1993).
32. David H. Leroy, interview.
33. Midwest High-Level Radioactive Waste Project, *Public Involvement in Radioactive Waste Management Decisions*, DOE/RW/00286-3 (April 1994), 21, https://www.osti.gov/servlets/purl/144923.
34. Policy statement by Governor Leavitt on multiple retrievable storage, January 13, 1991, https://curie.pnnl.gov/system/files/MRS_Feasibility_Assessment_Grant_Utah_Opposes.pdf.
35. *A Report on the Issues Regarding Monitored Retrievable Storage*, Volume I, presented by the

Citizens' Advisory Group (July 1992).

36. Governor Mike Sullivan, letter to the Fremont County Commissioners, August 21, 1991.
37. David H. Leroy, interview.
38. State of Wyoming General Session 1995, Chapter 212, High-Level Radioactive Waste, Original Senate File No. 116. https://wyomingdigitalcollections.ptfs.com/aw-server/rest/product/purl/WSL/s/0bf9ea0e-2f33-492d-8420-94201b2991dc.
39. For more discussion, see Chapter 6 of Robert Vandenbosch and Susanne E. Vandenbosch, *Nuclear Waste Stalemate*: Political and Scientific Controversies (University of Utah Press, 2007).
40. A February 1994 NRC paper cites four tribes—the Mescalero Apache Tribe in New Mexico, Skull Valley Band of Goshute Indians in Utah, Fort McDermitt Paiute and Shoshone Tribe in Nevada, and Tonkawa Tribe of Oklahoma—as having been awarded Phase II-A grants. SECY-94-040, February 18, 1994. https://www.nrc.gov/docs/ML0406/ML040620524.pdf.
41. The Goshute consolidated interim storage facility story is also covered in Chapter 6 of Vandenbosch and Vandenbosch, *Nuclear Waste Stalemate*.
42. Holt, "Nuclear Waste Negotiator."
43. For example, see a December 16, 1992, letter from Negotiator Leroy to Dan Silver of the Clinton Transition Team.
44. David H. Leroy, interview.
45. Pub. L. No. 103-126. https://www.congress.gov/bill/103rd-congress/house-bill/2445.
46. Holt, "Nuclear Waste Negotiator."
47. Richard Stallings, interview with the author, January 23, 2024.
48. "Roundtable on Spent Nuclear Fuel: Interim Storage, Management, and Utilization in the National Interest," Rosslyn, Virginia, February 10, 1994.
49. Last report to Congress by the Office of the Nuclear Waste Negotiator, submitted February 8, 1995.
50. Richard Stallings, interview.
51. Last report to Congress by the Office of the Nuclear Waste Negotiator.

52. Richard Stallings, interview.

53. Ibid.

54. See also the PBS interview with Richard Stallings, accessed March 28, 2024, https://www.pbs.org/wgbh/pages/frontline/shows/reaction/interviews/stallings.html.

55. Richard Stallings, interview.

56. Last report to Congress by the Office of the Nuclear Waste Negotiator.

57. Matt Bowen, "Nuclear Waste Policy Actions for the 117th Congress and Biden Administration," Center on Global Energy Policy, Columbia School of International and Public Affairs, January 2022, 1–5, https://www.energypolicy.columbia.edu/publications/nuclear-waste-policy-actions-117th-congress-and-biden-administration/.

58. Bowen, "Forging a Path Forward," 39.

59. Bruce Weber, "Bruce King, 3-Term Governor, Dies at 85," *New York Times*, November 13, 2009, https://www.nytimes.com/2009/11/14/us/14king.html.

60. Associated Press, "Batt Says Republicans Shouldn't Let Guard Down," *Moscow-Pullman Daily News*, September 18, 1997, https://news.google.com/newspapers?id=3L4jAAAAIBAJ&sjid=yNAFAAAAIBAJ&pg=1542,1809232.

61. *Lewiston Tribune*, "Nuke Waste Initiative Subject of PBS' 'Dialogue,'" September 29, 1996, https://www.lmtribune.com/northwest/nuke-waste-initiative-subject-of-pbs-dialogue/article_da6be240-4dfd-5895-a8d0-4314dafdf6ed.html, and Idaho Secretary of State general election results for 1996: https://sos.idaho.gov/elect/results/1996/general/rsltgn96.htm.

62. Office of the Inspector General, Department of Energy, *Audit Report: The Department of Energy Nuclear Waste Fund's Fiscal Year 2023 Financial Statement Audit* (November 2023), https://www.oversight.gov/sites/default/files/oig-reports/DOE/DOE-OIG-24-02.pdf.

63. Committee on Appropriations, *Report to Accompany*.

64. "Members of N.M. Congressional Delegation, Governor Send Letter to Energy Secretary Opposing Holtec Nuclear Waste Interim Storage Site in New Mexico," July 2, 2021, https://www.heinrich.senate.gov/newsroom/press-releases/members-of-nm-congressional-delegation-governor-send-letter-to-energy-secretary-opposing-holtec-nuclear-waste-interim-storage-site-in-new-mexico-. See Texas Governor Greg Abbot's letter to the NRC: https://gov.texas.gov/uploads/files/press/O-NuclearRegulatoryCommission202011030767.pdf; Erin Douglas,

"Texas Bans Storage of Highly Radioactive Waste, But a West Texas Facility May Get a License from the Feds Anyway," *Texas Tribune*, September 10, 2021, https://www.texastribune.org/2021/09/10/texas-nuclear-waste-ban/.

65. Department of Energy, "Consent-Based Siting," accessed March 5, 2024, https://www.energy.gov/ne/consent-based-siting.

66. Department of Energy, "Consent-Based Siting Consortia," accessed March 5, 2024, https://www.energy.gov/ne/consent-based-siting-consortia.

67. Chuck McCutcheon, "New Mexico Nuke Waste Site Offers Lessons for Others," *Axios*, March 29, 2024. https://www.axios.com/2024/03/29/nuclear-power-new-mexico-wipp.

68. David H. Leroy, interview.

69. The National Research Council has recommended phased, adaptive approaches to geological disposal programs in the past. To take one example, one report, *Disposition of High-Level Waste and Spent Nuclear Fuel*, states: "For both scientific and societal reasons, national programs should proceed in a phased or stepwise manner, support [sic] by dialogue and analysis." Another report, *One Step at a Time: The Staged Development of Geologic Repositories for High-Level Waste*, explains that adaptive staging "emphasizes continuous learning, both technical and societal, includes scientific and managerial re-evaluations and reaction to new knowledge, is responsive to stakeholder input, and is designed to continually improve the project while retaining the option of reversibility" (page 2).

70. Blue Ribbon Commission on America's Nuclear Future, *Report to the Secretary of Energy*.

71. David H. Leroy, interview.

72. Quotes and summary from email correspondence between Robert Mussler and the author on May 28, 2024; a phone interview on May 17, 2024; and a presentation by Robert Mussler, "The Story of the Office of the Nuclear Waste Negotiator: A Volunteering Siting Effort Directed by Statute 1990–1995," Washington, DC, January 25, 2023. For example, slide 16 of the 2023 presentation notes: "For any chance of success, any interest in a state for siting a facility must be blessed initially by the state's senior Congressional representative, followed by the governor."

73. Mussler, email.

74. For a more detailed discussion of the funding challenges, see pages 70–80 of the 2012 BRC report. Also see the BRC-commissioned paper by Joseph S. Hezir, *Budget and Financial*

Management Improvements to the Nuclear Waste Fund (May 2011).

75. See Figure 17 on page 72 of the BRC report for data from 1983 to 2010. Budget requests for Yucca Mountain were submitted to Congress for fiscal year (FY) 2018, FY 2019, and FY 2020, but no dollars were appropriated to move the project forward.

76. David H. Leroy, interview.

77. American Nuclear Society, *Recommendations on Postclosure Aspects of Generic Standards for the Permanent Disposal of Spent Nuclear Fuel and High-Level and Transuranic Radioactive Wastes in the United States*," Special Committee on Generic Standards for Disposal of High-Level Radioactive Waste (August 2023), https://www.ans.org/file/12339/1/ANS%20Disposal%20Standards%20Report%20final%20booklet-online.pdf.

78. For example, after the Fremont County's effort to continue studies on a consolidated interim storage facility was blocked by Wyoming's governor, the state adopted legislation in 1995 specifying application and planning requirements for facilities storing HLW and SNF—that is, what would be expected by the state in applications to build and operate such facilities and the procedures for how the state would go about approving or disapproving such applications.

79. David H. Leroy, interview.

80. Richard Stallings, interview.

81. Office of the Nuclear Waste Negotiator, "1991 Annual Report."

82. Office of the Nuclear Waste Negotiator, "1992 Annual Report."

83. The 10 jurisdictions awarded Phase I grants in 1992 were as follows: the Chickasaw Nation, Oklahoma; Fremont County, Wyoming; the Prairie Island Indian Community, Minnesota; the Sac and Fox Nation, Oklahoma; the Yakama Nation, Washington; the Skull Valley Band of Goshute Indians, Utah; the Eastern Shawnee Tribe, Oklahoma; San Juan County, Utah; the Ponca Tribe, Oklahoma; and the Fort McDermitt Paiute and Shoshone Tribe, Nevada.

84. David H. Leroy, letter to Mr. Dan Silver, Clinton Transition Team, Department of Energy, Washington, DC, RE: Supplemental Written Materials on the Office of the Nuclear Waste Negotiator, December 16, 1992.

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