

SAN ONOFRE NUCLEAR GENERATING STATION

2026 REPORT

FROM THE OFFICE OF
REPRESENTATIVE MIKE LEVIN



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LETTER FROM REPRESENTATIVE MIKE LEVIN

OCTOBER 2026

INTRODUCTION

I am fortunate to represent one of the most beautiful Congressional districts in the United States. While we have many incredible resources, none is more important than our coastline. And for years, directly threatening that coastline has been more than 1,600 tons of spent nuclear fuel stored just 100 feet from the Pacific Ocean. This is the legacy of the San Onofre Nuclear Generating Station (SONGS), which stopped producing electricity in 2012, as well as the result of decades of failed federal policy to address the storage and disposal of our nation's spent nuclear fuel.

When I convened the SONGS Task Force shortly after being sworn into office in January 2019, the situation was bleak. There were effectively two fully intact nuclear plants still standing at the water's edge, with spent fuel sitting in wet storage pools. Decommissioning had barely begun. The federal government had walked away from Yucca Mountain in Nevada without an alternative, and the consent-based siting process that could actually move spent fuel off our coast existed only as a recommendation on paper. Our first report, published in March 2020, laid out thirty policy recommendations for a problem that had been stalled, in one form or another, for a generation.

Six years later, I am proud to report that we have made real, tangible progress of the kind that once felt out of reach.

At SONGS itself, all of the spent fuel has now been safely transferred out of the wet pools and into dry storage. After six years of decommissioning work, crews have demolished 52 of the site's 62 structures and removed more than 700 million pounds of material. In the coming months, work will begin to dismantle the two containment domes that have defined this stretch of coastline since the 1980s, with decommissioning on track to be substantially complete by the end of 2028.

At the federal level, the change has been just as significant. Since I took office, we have helped secure nearly \$250 million to manage spent nuclear fuel and move it off sites like SONGS, including \$100 million in Fiscal Year 2026 alone, after years in which Congress budgeted next to nothing. That funding has stood up a collaborative siting process for consolidated interim storage. It has certified the Atlas railcar system built to transport spent fuel safely across the country. And it has established new federal research capacity dedicated to the safe, long-term stewardship of spent fuel. The Supreme Court's 2025 decision in *NRC v. Texas* left intact the legal pathway to license the storage facilities we will need.

I now bring these priorities directly to the House Appropriations Committee and its Energy and Water Subcommittee, where I can continue to fight for the resources this work demands.

None of this means our task is finished. Spent fuel still sits on our coastline, and it will remain there until the federal government fulfills the obligation it took on more than forty years ago. Every day it fails to do so, taxpayers pay the price of over \$3 million a day, while a federal liability that already exceeds \$50 billion continues to grow.

I wrote this report to lay out honestly both how far we have come and how much is left to do. The remaining chapters outline that work including bringing down the federal liability, siting a permanent repository, and finally moving spent fuel away from San Onofre and other high-risk sites for good.

I remain deeply grateful to our Task Force co-chairs, former Nuclear Regulatory Commission Chair Greg Jaczko and retired Rear Admiral Len Hering, and to every member who has volunteered their time and expertise. When we began, the path forward was uncertain. Today, that path is clearer than it has been in decades. The safety of the SONGS site, and the removal of spent nuclear fuel off the California coast and away from other high-risk areas as quickly and safely as possible, will remain among my top priorities for as long as I am honored to serve in Congress.

Yours Sincerely,

A handwritten signature in blue ink that reads "Mike Levin". The signature is fluid and cursive, with a prominent "M" and "L".

Mike Levin
United States Representative, 49th District of California

CHAPTER 1: REP LEVIN'S APPROPRIATIONS AND LEGISLATIVE RECORD

Since coming to Congress in 2019, Rep. Levin has made addressing spent nuclear fuel issues one of his top legislative priorities. This has included introducing several bills to address the key challenges on spent fuel and fighting for funding through the Appropriations process to advance a federal solution.

FUNDING FOR NUCLEAR WASTE MANAGEMENT:

Since Rep. Levin took office in 2019, he has helped to secure nearly \$250 million for managing spent nuclear fuel, including \$100 million in Fiscal Year (FY) 2026. This funding has helped to make progress on an issue that had been stalled for years before Rep. Levin came to Congress. Now that Rep. Levin is a member of the House Appropriations Committee and the Energy and Water Subcommittee, he will continue advocating for more funding for the spent fuel program.

So far, funding that Rep. Levin has helped to secure has resulted in:

- Establishment of a collaborative siting process for a consolidated interim storage (CIS) facility to relocate spent fuel at SONGS and other nuclear power plants to a consolidated facility for storage while the repository siting process is underway. CIS will help move the waste from SONGS faster and provide a safer, consolidated location for management of spent fuel.
- Establishment and operation of a Collaborative Siting Consortia to facilitate inclusive community engagement and elicit public feedback on the siting of nuclear waste facilities through engagement in mutual learning about nuclear waste with communities across the country. The Consortia held more than 250 public engagements, 16 Tribal engagements and 40 government engagements, and awarded 18 direct grants to communities interested in learning more about hosting spent fuel.
- Advancement of the planning for DOE to develop a federal CIS Facility, including determination of a mission need for the facility, marking the first step of the DOE process to manage large infrastructure projects.
- January 2026 issuance of a Request for Information (RFI) inviting states to express interest in hosting Nuclear Lifecycle Innovation Campuses, which could support work across the nuclear fuel life cycle, with an emphasis on storage and disposition at the back end of the fuel cycle. The deadline for RFI responses was April 1, 2026.
- July 2026 announcement that the Governors of Utah, Tennessee, Oklahoma, Louisiana, and Idaho signed Memorandums of Understanding with the DOE to continue exploring the opportunity to become host sites.
- The next step will be continued collaborative engagement between DOE and the five selected candidate sites to reach binding hosting agreements, passage of necessary amendments to state law and regulations, and Congressional amendments to the Nuclear Waste Policy Act to allow the siting and construction process to proceed.

- Development, testing, and certification for operation of the Atlas Railcar System, a high-tech, purpose-built, secure railcar system to transport that nation's commercial spent nuclear fuel and high-level radioactive waste.
- Establishment of the Center for Used Fuel Research at Idaho National Lab to serve as a national and international hub for applied research on the management of spent fuel that supports and maintains compliance and advances public confidence in the safe storage and transportation of both commercial and DOE-managed spent fuel.

For the remainder of FY26, the funds will be used to advance development and collaborative siting of the infrastructure needed to safely transport, store, and dispose of waste, work with communities to identify a suitable new site, and support research into improved long-term management of spent nuclear fuel.

LEGISLATION INTRODUCED:

Nuclear Waste Administration Act – Rep. Levin and Rep. Pfluger (R-TX) (H.R. 9786, 118th Congress)

This bill would modernize our country's nuclear waste management program by establishing a new, single-purpose organization to manage the back end of the nuclear fuel cycle, provide for a collaborative siting process for nuclear waste facilities, and ensure adequate and reliable funding for managing nuclear waste.

Status: This bill is pending reintroduction in the 119th Congress.

Spent Fuel Prioritization Act – Rep. Levin, Rep. Issa (R-CA) and Rep. Kim (R-CA) (H.R.1012, 119th Congress, H.R. 3862, 118th Congress, H.R. 6685, 117th Congress, H.R. 2995, 116th Congress)

This bill would prioritize the removal of spent nuclear fuel (SNF) from decommissioned nuclear sites in areas with large populations, high seismic hazard, and where the continued storage of spent nuclear fuel poses a national security risk, like at SONGS, when the fuel has a place to be relocated to.

Status: This bill currently awaits a hearing in the House Energy and Commerce Committee. Rep. Levin is advocating for the inclusion of this bill in broader nuclear waste management legislation, such as the Nuclear Waste Administration Act.

NRC Office of Public Engagement and Participation – Rep. Levin and Senator Markey (D-MA) (H.R. 4136, 119th Congress, H.R. 4530, 118th Congress, H.R. 9215, 117th Congress)

This bill would establish an Office of Public Engagement and Participation at the Nuclear Regulatory Commission (NRC) to help the public better understand and participate in the decision-making process on nuclear energy issues.

Status: This bill currently awaits a hearing in the House Energy and Commerce Committee.

INSPECT Act – Rep. Levin and Rep. Lawler (R-NY) (H.R. 4809, 119th Congress, H.R. 5115, 118th Congress, H.R. 8646, 117th Congress, H.R. 8673, 116th Congress)

The bill would increase safety and oversight at decommissioning nuclear power plants by requiring the Nuclear Regulatory Commission (NRC) to keep a resident inspector at decommissioning plants until all spent fuel is transferred from its spent fuel pools to canisters.

Status: This bill currently awaits a hearing in the House Energy and Commerce Committee.

Nuclear Waste Task Force Act – Rep. Levin and Senator Markey (D-MA) (H.R. 5401, 117th Congress)

This bill would establish a new task force to consider the implications of amending the *Atomic Energy Act of 1954* to remove exemptions from environmental laws for nuclear waste and identify a clear explanation of what constitutes “consent-based siting.”

Status: The understanding of the importance and of meaning of consent and collaboration with states and local communities has advanced in recent years. The Nuclear Waste Administration Act would implement a collaborative siting process for nuclear waste management as part of a broader reform package.

100 Year Canister Life Act – Rep. Levin and Rep. Carbajal (D-CA) (H.R. 7172, 118th Congress, H.R. 9267, 117th Congress)

This bill would require nuclear waste canisters to have a design life of at least 100 years, up from the current required life of 40 years.

Status: This bill is pending reintroduction in the 119th Congress.

Spent Nuclear Fuel Solutions Research and Development Act (H.R. 8258, 116th Congress)

The bill would create a spent nuclear fuel research and development program at the Department of Energy, which would support options for dry cask storage, consolidated interim storage, deep geological storage and disposal, and used nuclear fuel transportation.

Status: This bill was included in the signed into law in the Energy Act of 2020 in December 2020.

Bipartisan Spent Nuclear Fuel Solutions Caucus:

At the recommendation of the SONGS Task Force, Rep. Levin established the Bipartisan Spent Nuclear Fuel Solutions Caucus in 2021. The Spent Nuclear Fuel Solutions Caucus is a bipartisan group of Members of Congress who are committed to driving progress on the safe storage, transportation, and disposal of spent nuclear fuel across the country.

The Caucus serves as a forum for Members who care about solving all commercial spent fuel issues, where Members can come together to make progress regardless of whether or not they have a preferred solution. In order to inform Member discussion, the caucus invites guests - from government, academia, and more – to share their perspective on solving spent fuel challenges. It also serves as a vehicle through which Members can gather related information from the Department of Energy, the Nuclear Regulatory Commission, and other agencies.

Rep. Levin co-chairs the Caucus with Rep. Fleischmann (R-TN) and the caucus currently has 29 bipartisan members from across the country.

CHAPTER 2: PROGRESS AT SONGS

DEMOLITION PROGRESS

In June 2013, Southern California Edison (SCE) formally notified the U.S. Nuclear Regulatory Commission (NRC) that it had permanently ceased operation of Units 2 and 3 at SONGS. That notification allowed SCE to begin preparations for decontamination and dismantlement (D&D) of the plant. The responsible entities for D&D are current and former owners including SCE with co-participants San Diego Gas & Electric (SDG&E), the City of Riverside, and the City of Anaheim. The decommissioning general contractor for this project is SONGS Decommissioning Solutions (SDS), a joint venture between AECOM and Energy Solutions. The project scope for the current phase of D&D includes decontaminating the facility by removing radiologically activated components, dismantling structures to approximately three feet below grade, and shipping low-level waste and recyclable materials to disposal and recycling facilities out of state. The total cost of decommissioning is estimated at approximately \$4.7 billion,¹ paid by dedicated trusts funded through customer contributions and investments made during plant operation. The process is overseen by the NRC. Environmental permitting was conducted under the jurisdiction of the California Coastal Commission (CCC) and California State Lands Commission (CSLC).

At the time the first SONGS Task Force Report was released in March 2020, the decommissioning work at SONGS was just beginning in earnest and faced initial complications due to the COVID-19 pandemic. At the start of 2020, there were effectively two fully intact nuclear plants at SONGS with spent fuel stored in wet storage pools and an onsite independent spent fuel storage installation (ISFSI). The contractor also had to contend with limited on-site space to conduct dismantlement activities. The team worked to remove the auxiliary buildings on the property to allow for more room to conduct the decommissioning work. The same was true for inside the containment domes. The essential factor for completing the D&D work efficiently was the development of the railyard which allowed for full-scale shipping operations to remove waste and debris from the site. There is an estimated one billion pounds of material overall to be removed from SONGS over the course of decommissioning.

Significant progress has been made since the time of our first report. By the end of 2020, all spent fuel was transferred into dry storage at the site's Independent Spent Fuel Storage Installation (ISFSI). After six years of decommissioning work, 52 of the 62 structures have been demolished and more than 700 million pounds of waste and debris have been removed.

As we look ahead to the remainder of 2026 and beyond, the next major milestone will be dismantling of the two containment domes, also known as Units 2 and 3, that have been prominent visual features of the plant since their completion in the 1980s.

As of the release of this report, crews are undergoing final preparations in and around Unit 3, the southernmost dome, for dismantlement. Unit 3 will be dismantled first, and a similar process will be completed for Unit 2. In Unit 3, hazardous materials and universal waste have been cleared and crews will focus on removing concrete flooring and steel supports. Once the interior of the dome is prepared for deconstruction, the dome will be demolished in a bottom-up process. Crews will excavate a 10-foot layer at the bottom of the containment dome, and the weight of the structure will cause it to drop fully intact.

¹ <https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M548/K362/548362332.PDF>

That process will be replicated until the entire structure is demolished. This method is safer than a top-down process given the risk of debris falling from as high as 190 feet and injuring workers.

Both domes are expected to be demolished by the end of 2027, and the entire D&D process to be completed by the end of 2028. At that point, the only structures that will remain are the protective seawall and walkway along the waterfront, the switchyard, and the ISFSI until the spent fuel can be transferred to an offsite Consolidated Interim Storage Facility (CISF) or directly to a permanent deep geologic repository.

SAFETY AND THE DECOMMISSIONING PROCESS

SONGS presents unique challenges given that it is located within 100 feet of the Pacific Ocean, five miles from the Newport-Inglewood-Rose Canyon fault zone, and that it is surrounded by highly populated areas. While the plant structures and ISFSI were designed to withstand all credible natural and manmade threats, the 2020 SONGS Task Force Report identified a number of safety considerations and areas for improvement. While storage canisters are good for 100 years or more with an NRC-mandated aging management program, what remains clear is that this site was never intended to store spent fuel in perpetuity and the federal government must uphold its responsibility to address the storage and disposal of the nation's nuclear waste. Eventually, the spent fuel must be permanently isolated from the biosphere.

Since the start of D&D in 2000, the NRC has conducted more than 36 routine decommissioning and security inspections of SONGS and produced reports with their findings.² The reports outline any findings related to D&D activities, security, and dry fuel storage. When issues arise, SCE works under NRC regulations to conduct cause evaluations and take corrective actions to prevent a reoccurrence. For example, following the 2018 near-miss downloading incident in which a loaded spent fuel canister could have dropped 18 feet into the storage vault, SCE took corrective measures to incorporate new training, new procedures, and new technology.

SAFE ONSITE STORAGE OF SPENT FUEL

The biggest change since our first report was released is the fact that all spent fuel at SONGS has now been transferred to passive dry storage. By August 2020, all spent fuel was loaded into multi-purpose canisters designed for onsite dry storage in the ISFSI and offsite transportation. There are two systems for dry fuel storage at SONGS. The first is an Orano-NUHOMS horizontal storage system that holds 50 canisters of spent fuel. The second is a Holtec UMAX system that holds 73 canisters of spent fuel.

A selection of spent fuel canisters in each of the storage systems are inspected every five years using robots with high-resolution cameras in keeping with NRC regulatory requirements and commitments to the CCC. The ISFSI is protected 24/7 by an SCE security force.

The previous 2020 SONGS Task Force Report identified a number of concerns related to the long-term onsite storage of spent fuel at SONGS. The report found the following:

- The ISFSI at SONGS could experience structural degradation from direct groundwater or seawater exposure over time, due to the close proximity to a rising coastal waterline and groundwater table.
- If the canisters or cask system are damaged, the fuel may not be retrievable.

² <https://www.songscommunity.com/about-decommissioning/decommissioning-san-onofre-nuclear-generating-station/safely-dismantling-songs/nrc-inspection-reports>

- SNF dry storage canisters serve as radiation containment.
- Lack of training by SNF storage contractors has led to negative consequences.
- SCE does not have an optimal and qualified long-term plan for inspection, maintenance, monitoring, or repair procedures.
- There is no ability to detect chemical damage to SNF in current dry storage configuration.

Six years later, some of these concerns have been addressed.

- SCE now maintains required inspection, maintenance and monitoring programs with repair procedures for both the Orano-NUHOMS³ and Holtec UMAX storage systems.⁴
- Repair technology has advanced in recent years. The programs for both storage systems at SONGS include repair and mitigation measures, including metallic overlay repair technology that now is available if ever needed.⁵
- With respect to spent fuel chemistry, all spent fuel at SONGS is now seal-welded in canisters filled with 99.995% pure helium to provide an inert environment that prevents oxidation and corrosion of the spent fuel.

SPENT FUEL MONITORING

It was also recently announced that the DOE's Center for Used Fuel Research is in the final phases of a selection process for acoustic emission technologies that would be used for automated monitoring of used nuclear fuel dry storage canisters. Currently, inspections are performed periodically and require the deployment of equipment for each inspection or inspection cycle. The Center for Used Fuel Research expects that a full-scale demonstration of the selected technology will occur in early 2027 and may be conducted at SONGS using the Holtec UMAC dry storage canister. This process will potentially set up the deployment of automated monitoring and inspection technologies for aging management of all spent fuel canisters at nuclear power plants nationwide.

OFFSITE STORAGE AND DISPOSAL OF SPENT FUEL

Once the spent fuel is relocated to an offsite storage or disposal facility, SCE will proceed with a final phase of D&D. Substructures from Unit 1 are currently trapped below the ISFSI and elements of Units 2 and 3 are located below the water table. Structures will be removed as required by the landowner, the Department of Navy.

SCE has stated they will restore the land to the strictest standard in the NRC's decommissioning framework. Known as the "resident farmer" standard, the land will be restored for unrestricted use by the Navy and Marine Corps Base Camp Pendleton.

Rep. Levin is committed to addressing safety at SONGS both in the short-term and long-term. As was detailed in this report, he has written several pieces of legislation to improve safety and oversight, including the *Spent Fuel Prioritization Act*, the *100 Year Canister Life Act*, the *INSPECT Act*, and the *Spent Nuclear Fuel Solutions Research and Development Act*.

³ SONGS NUHOMS Aging Management Program

⁴ SONGS Holtec Inspection and Maintenance Program

⁵ Video showing metallic overlay repair method

CHAPTER 3: HOW THE NUCLEAR WASTE LANDSCAPE HAS CHANGED

SHIFT TOWARD CONSENT-BASED SITING

The Biden Administration transformed the federal approach to nuclear waste by shifting away from a top-down mandate toward a partnership driven model. For decades, the government used a strategy often called “decide-announce-defend,” where it selected a single location, such as Yucca Mountain, and attempted to force the development of the project despite significant local opposition. This led to years of legal battles and political gridlock that left used fuel sitting at power plants like SONGS with no path for removal. The Biden Administration inverted this dynamic by making local community willingness a prerequisite for any action shifting adaption towards consent-based siting.

To implement this, in 2023, the Department of Energy (DOE) awarded \$26 million in grant program funding, which Rep. Levin helped to secure, to a variety of neutral groups, including universities and non-profit organizations. These grants helped a dozen regional consent-based nuclear siting consortia act as a bridge to interested communities. This helped residents and local leaders explore the potential impacts of hosting a site without the pressure of an immediate federal order. This cooperation-first strategy shifted waste management into a shared social and economic opportunity, focusing on long-term benefits like specialized jobs, new infrastructure, and federal investment.

By funding these partnerships, the Administration laid the groundwork for a network of sites that work together, moving used fuel from old power plants to central, high-tech facilities designed to store the fuel, or recycle the material for new energy or power advanced industrial centers.

SHIFTS FROM CURRENT DOE

The current Administration has introduced a strategic shift in how the country manages nuclear energy, moving toward a model that treats the industry as a central part of the national economy. Under the Trump Administration, DOE issued a request for information in January 2026 “inviting states to express interest in hosting Nuclear Lifecycle Innovation Campuses, a new effort to modernize the nation’s full nuclear fuel cycle and strengthen America’s leadership in advanced nuclear energy.”⁶ According to DOE, “The proposed campuses could support activities across the full nuclear fuel lifecycle, including fuel fabrication, enrichment, reprocessing used nuclear fuel, and disposition of waste.”⁷ This approach focuses on creating high-tech industrial centers that combine several different nuclear activities in one place. These sites are being designed to handle everything from fuel storage and recycling to providing the massive amounts of power needed for modern facilities. The development of these sites maintains a consent-based siting approach, now termed “collaborative siting.”

In California, this broader policy shift is reflected in ongoing discussions regarding both existing operations and future waste considerations. The state recently authorized an extension for the Diablo Canyon Power Plant through 2030. Beyond maintaining current plants, new state legislation has been introduced to update California’s long-standing nuclear moratorium to allow for small modular reactors. However, spent fuel management remains a central concern in these debates. For coastal communities, the

⁶ Department of Energy, <https://www.energy.gov/articles/department-energy-seeks-hosts-nuclear-lifecycle-innovation-campuses>

⁷ Ibid.

priority is ensuring that any potential new generation does not lead to further accumulation of stranded waste at local sites, such as SONGS, but instead aligns with viable federal off-site storage, recycling, or disposal solutions.

SUPREME COURT CONSOLIDATED INTERIM STORAGE RULING

A significant legal question was addressed in June 2025 when the Supreme Court of the United States issued its ruling in *NRC v. Texas*. The case dealt with a challenge alleging that the Nuclear Regulatory Commission (NRC) did not possess the legal authority to license private, off-site Consolidated Interim Storage (CIS) in Texas and New Mexico. In a 6-3 decision, the Supreme Court reversed a lower court's attempt to block these projects, effectively reinstating the federal licenses. The ruling was based on a procedural finding that the challengers, including the State of Texas, lacked the legal standing to sue because they had not properly participated in the original licensing process. While the Court did not rule on every technical aspect of the law, the decision does not disturb the NRC's authority to oversee off site storage facilities.

This essentially leaves in place the NRC's practice to license CIS sites, even if they are run by private companies. While specific projects in Texas and New Mexico remain stalled due to strong state government opposition, the Supreme Court ruling did not touch on the question of authority. It leaves in place the NRC's likely pathway of licensing new innovation campuses without a similar procedural shutdown.

THE ATLAS RAIL CAR

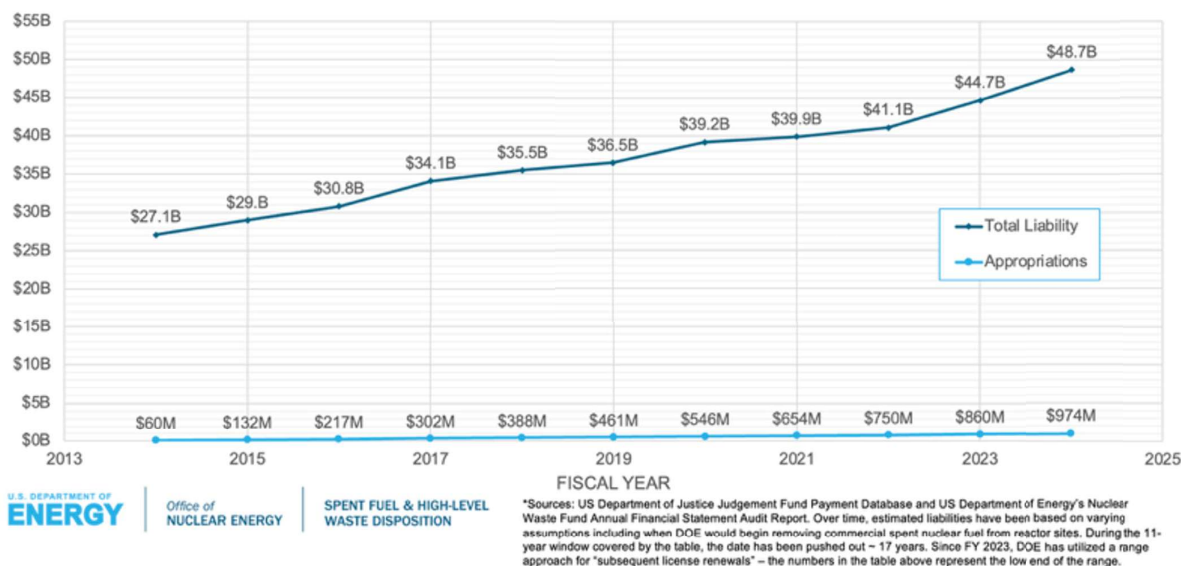
The development of the Atlas railcar program represents a major shift from theoretical planning to physical readiness for the transport of spent nuclear fuel (SNF). Under the Nuclear Waste Policy Act (NWPA), the DOE is responsible for the actual disposal of SNF, while the Nuclear Regulatory Commission (NRC) oversees the licensing and safety of the process. To meet this responsibility, the DOE has overseen the creation of a specialized train system, which includes the Atlas railcar for transporting SNF containers, buffer railcars, and a Rail Escort Vehicle (REV) designed in collaboration with the U.S. Navy to house security personnel. The Atlas railcar itself is a high-tech, 12-axle vehicle engineered to carry 17 different types of SNF casks, with weight capacities ranging from 82 to 210 tons. Its design process utilized extensive dynamic computer modeling to ensure safety across various components and container weights.

The system reached full operational status following several years of rigorous validation. In April 2022, the REV entered its final testing phase, marking the completion of the last piece required for a full railcar system. This was followed by a successful 1,680-mile round-trip journey from Colorado to Idaho in September 2023, which served as the final validation for the prototype trainset. In June 2024, the DOE officially announced the approval of the Atlas railcar, confirming it is ready for operational use.

The final step in establishing the Atlas Railcar as the standard for spent nuclear fuel transport is the move from regulatory approval to high-stakes physical testing. While the system received its official certification in June 2024, the Department of Energy is currently advancing the Package Performance Demonstration project through 2028. This initiative moves beyond computer modeling to conduct full-scale physical tests on rail-sized transport casks. These tests subject the Atlas system to realistic accident scenarios, including high-speed collisions, structural drops, and exposure to fire and water. By documenting how the hardware performs under these extreme conditions, the DOE intends to provide host communities with clear evidence of the system's durability before the first shipments of radioactive material begin.

CHAPTER 4: WHAT DO WE STILL HAVE LEFT TO DO?

Taxpayer Liability For Spent Nuclear Fuel (SNF)*



START TO BRING DOWN THE FEDERAL LIABILITY

In the Nuclear Waste Policy Act of 1982, Congress established the Nuclear Waste Fund to finance the federal government's disposal of spent fuel and other high-level radioactive waste to fulfill its contractual obligations. Nuclear utilities paid into the Nuclear Waste Fund based on how much electricity their nuclear power plants generated. In return, the Department of Energy (DOE) would begin disposing of spent fuel by January 1998. Due to the government's misstep in trying to select a location to host nuclear waste without taking into account the communities near where the waste would be stored, by January 1998, DOE failed to fulfill its contractual obligations, and the utilities sued.

Now 28 years later, though we have made progress on collaborative siting for nuclear waste facilities, DOE has not yet fulfilled its contractual obligations, leaving taxpayers on the hook for an estimated \$50.8 to \$56.5 billion—and that assumes that DOE will begin accepting spent fuel at a federal consolidated storage facility in the 2030s. In FY25, taxpayers paid over \$3 million per day due to the lack of a solution for nuclear waste. These funds are paid out of a permanent appropriations account known as the Judgment Fund for use when the government is sued, and they add to the federal deficit year after year without the benefit of budget or appropriations considerations. This liability will just continue to grow until we break through the paralysis of spent fuel management and start to move fuel from sites like SONGS all across the country to finally fulfill the federal government's contractual obligations.

The reality is that DOE is liable for \$56.5 billion because we have failed to find a workable solution for nuclear waste. We only spent \$15 billion on the Yucca Mountain project. The often underappreciated reality is that the federal government will spend nearly four times as much money paying off its liabilities simply because it tried to select a location for nuclear waste without taking into account the communities near where the waste would be stored.

Then, over the past decade as the federal government struggled to move past the Yucca Mountain project, DOE's projected taxpayer liability increased by over \$20 billion. However, the federal government has spent less than \$1 billion to actually develop a solution.

To start to bring down the federal liability, Congress must continue to fund at increasing levels the collaborative work being done at DOE to advance an integrated waste management program and the Nuclear Lifecycle Innovation Campuses (NLIC) in a way that prioritizes removal of nuclear waste from shutdown power plants. Congress must also amend the Nuclear Waste Policy Act to authorize and provide direction on how NLICs should proceed, while creating an off-ramp to transition the program to an independent, single purpose organization to manage the program long term, like in the Nuclear Waste Administration Act.

FIND A SITE FOR A PERMANENT REPOSITORY

To move the waste away from SONGS, DOE must have a location to move the waste to. As mentioned above, the federal government continues to be found in breach of contract because there is still no selected site for DOE to relocate the nation's nuclear waste to, either for temporary storage or for permanent disposal.

DOE is making progress on a collaborative siting process for the NLICs, though there are still many unknowns about how specifically DOE will handle nuclear waste disposal in the program, how reprocessing may fit in with a disposal pathway, and what disposal arrangement states will agree to host as part of a Campus. Continued oversight from Congress will be necessary to ensure that there are adequate solutions for nuclear waste disposal in the NLIC program, including solutions to remove waste from shutdown sites as expeditiously as possible, regardless of if that fuel is commercially preferred for reprocessing.

Similar to the solution for the federal liability, in order to successfully site a permanent repository, DOE must continue to pursue this work in a collaborative fashion, working with states and local communities to ensure that there is understanding, acceptance, and benefits for a hosting arrangement. In engaging with states and communities, the federal government must be transparent, genuinely listen to the needs and concerns of communities, adhere to safety and environmental standards, and identify mutually agreed upon benefits for the states and communities hosting the infrastructure. The federal government must also be able to fulfill any agreements it reaches with states, since under current law, the NLICs would be limited in their ability to serve as solutions for storage and disposal of nuclear waste. Congress must act to modernize our nuclear waste laws in order to allow for the successful siting of a repository through a collaborative process.

IS REPROCESSING A SOLUTION?

Ten years ago, the conversation around nuclear waste looked entirely different. The commercial reprocessing industry in the United States was essentially nonexistent, states had little incentive to raise their hands as potential hosts for anything in the nuclear fuel cycle. Now, with significant interest demonstrated from states in reprocessing and in hosting Nuclear Lifecycle Innovation Campuses, the conversation around reprocessing has evolved, though challenges still exist.

For example, there is still no commercial reprocessing industry in the United States. While reprocessing may be able to serve a role in the fuel cycle by reducing the volume of nuclear waste to be disposed of, reprocessing is incredibly expensive. For commercial reprocessing to be economically viable, it would need to produce nuclear reactor fuel from reprocessed plutonium and/or uranium at a price competitive with existing uranium fuel or be able to reduce nuclear plants' waste management costs. A Harvard University study concluded that reprocessing "will be more expensive than direct disposal of spent fuel until the uranium price reaches over \$360 per kilogram of uranium (kgU)—a price that is not likely to be seen for many decades, if then."⁸ The Congressional Research Service has found that \$360 per kgU would be approximately \$164 per pound. In comparison, the average uranium spot price for October 2024 was \$80.50 per pound.

Additionally, reprocessing nuclear waste results in at least the partial separation of plutonium. When provided the availability of technical expertise and specialized facilities, plutonium from reprocessed nuclear waste can be used to produce nuclear warheads. Though reprocessing technologies vary in their treatment of plutonium, the development of a commercial reprocessing industry in the United States sends a signal to other countries and would potentially undermine the long-standing United States policy to discourage the development of reprocessing and enrichment capacity in nonnuclear-weapon states and increases the risk that plutonium materials may be obtained by hostile actors. Any reprocessing facility in the United States would require a high-level of security to mitigate these risks.

Because of these factors, reprocessing is not likely the silver bullet that will solve the nuclear waste issues in this country.

At San Onofre specifically, in the narrow technical sense, the fuel at SONGS can likely be reprocessed. But when experts consider strong candidates for commercial reprocessing, they weigh cost, logistics, and benefits compared to other options. On those measures and depending on the technology, the fuel at SONGS is not likely to be a strong candidate compared to other spent fuel across the country. Factors like its age, physical structure, burnup characteristics, and the fact that it is already sealed in canisters designed for storage and transport — not chemical separation — all matter and may increase costs for commercial reprocessing.

When it comes to reprocessing, if states and communities are interested, the economics become more favorable, appropriate security measures are taken, and it helps to remove the waste from SONGS, reprocessing ought to be kept as one tool in the toolbox for addressing our nuclear waste challenges.

Regardless of if the United States pursues reprocessing or not, a permanent disposal pathway will still be required. Rep. Levin will continue to advocate for a collaborative siting process that will advance a storage and disposal solution for the nuclear waste at SONGS and across the country.

⁸ Matthew Bunn et al., *The Economics of Reprocessing vs. Direct Disposal of Spent Nuclear Fuel*, Harvard University, Belfer Center for Science and International Affairs, John F. Kennedy School of Government, Final

⁹ *Considerations for Reprocessing of Spent Nuclear Fuel*, Congressional Research Service, 2025. https://www.congress.gov/crs_external_products/R/PDF/R48364/R48364.2.pdf

CHAPTER 5: ROADMAP FOR NEXT STEPS

SONGS-SPECIFIC SITE WORK

As was described previously in this report, the decommissioning work at SONGS is scheduled to be completed at the end of 2028. Once decommissioning is finished, the focus will be on waste management and monitoring to ensure the safety of the SNF until it can be transferred to a CISF or a permanent repository. Rep. Levin has been focused on working collaboratively to move the SNF from SONGS as soon as possible while prioritizing safety. The following section outlines the roadmap for how that can be achieved.

COLLABORATIVE SITING AND SUCCESSFUL NEGOTIATION WITH STATES AND COMMUNITIES

As discussed throughout this report and recommended in the 2020 SONGS Task Force Report, as well as many other governmental¹⁰ and academic reports,¹¹ to be successful in siting a repository, meaningful communication, collaboration, and engagement with potential host states and communities is essential. The failures of the Yucca Mountain project and its attempt to site a nuclear waste facility over the objection of host jurisdictions have been well documented, as have the successes of other countries like Finland and Canada that used a collaborative siting approach to work with communities, not against them. If the United States is to have an operational nuclear waste management program, it must be based in community collaboration and trust.

Rep. Levin has been a preeminent champion of a collaborative siting approach for nuclear waste facilities. He helped secure the funding for the Biden Administration DOE to start its consent-based (now called collaborative) siting process. He has introduced legislation like the Nuclear Waste Administration Act and the Nuclear Waste Task Force Act to help to codify a collaborative siting approach.

Looking to international examples, we see success stories when countries utilize a collaborative approach. For example, in 2024, Canada's Nuclear Waste Management Organization (NWMO) announced that it had selected a site for a repository after years of communication and cooperation. Canada's methodology for selecting the site included conducting technical assessments of site suitability in parallel with an open dialogue with all the potential host communities.

Similarly, in Finland, each community under consideration as a repository location was consulted and promised veto power should it be selected, and ultimately, the support of the local municipality and the national government will lead to Finland becoming the first country to begin permanently disposing of its spent nuclear fuel at Onkalo, possibly as soon as 2026.

In January 2026, DOE heeded the advocacy of Rep. Levin, built upon the groundwork done by the Biden Administration, and followed lessons learned from other countries by inviting states to weigh in on hosting

¹⁰ Lee H. Hamilton, Brent Scowcroft, et al, Blue Ribbon Commission on America's Nuclear Future Report to the Secretary of Energy, 2012. https://www.energy.gov/sites/prod/files/2013/04/f0/brc_finalreport_jan2012.pdf

¹¹ Lake Barrett, Allison MacFarlane, et al, The Path Forward for Nuclear Waste in the U.S. <https://sppga.ubc.ca/wp-content/uploads/sites/5/2026/01/Path-Forward.2026.pdf>

Nuclear Lifecycle Innovation Campuses (NLIC) to support key functions across the nuclear fuel lifecycle, including fuel fabrication, enrichment, reprocessing used nuclear fuel, and most importantly, waste disposal. It is an encouraging step that the Trump Administration is taking community collaboration seriously.

Congressional oversight will still be necessary to ensure that DOE is being transparent and communicative with states and communities, and that DOE adheres to environmental and public safety standards. Additional Congressional action will be needed to authorize DOE to advance the Nuclear Lifecycle Innovation Campuses through a collaborative siting process and to provide adequate funding for the program through annual appropriations and access to the nearly \$50 billion in the Nuclear Waste Fund.

CREATION OF A SINGLE PURPOSE ORGANIZATION TO MANAGE NUCLEAR WASTE

The federal government is responsible for taking title to and ultimately disposing of the nation's nuclear waste, but as detailed throughout this report, the government has not yet successfully fulfilled its obligations. Though DOE has made strides in recent years, establishing a new single-purpose, independent organization solely dedicated to the safe, secure management, storage, and ultimate disposal of nuclear waste will be in a stronger position to focus on solving the long-term challenges unique to nuclear waste. Such an organization would be insulated from political headwinds and ever-changing funding levels. Additionally, modernizing our nuclear waste laws presents an opportunity to acknowledge lessons learned in the space and provide for a flexible, collaborative pathway for siting and operating both storage and permanent disposal facilities.

Through the years, there have been many proposals for what a new organization to manage waste may look like, each with their own benefits and drawbacks.

For example, Rep. Levin introduced the bipartisan Nuclear Waste Administration Act with Rep. Pfluger from Texas to move the spent fuel program from DOE to a new independent federal agency to address these challenges. Such an independent agency would allow for the federal government to finally fulfill its contractual obligations and advance the public's interest in addressing our nation's spent fuel challenges. However, as has been made clear during the second Trump Administration, even independent agencies are still susceptible to political pressure which could create challenges for implementation of the nuclear waste program.

In 2012, the Ribbon Commission on America's Nuclear Future recommend the establishment of a federal corporation chartered by Congress, similar to the Tennessee Valley Authority. The Blue Ribbon Commission posits that a federal corporation with a well-defined mission, access to adequate resources, ability to make binding contractual commitments, and subject to rigorous external oversight would be well positioned to succeed in the long-term management of spent nuclear fuel. Since a federal corporation is still a part of the federal government, though it is more removed than an independent federal agency, it may still be susceptible to political pressure.

In 2026, a bipartisan group of nuclear waste experts proposed the establishment of a "NuCorp" in the Path Forward For Nuclear Waste in the U.S. report. The NuCorp would be an independent public benefit corporation or a non-profit corporation, owned and led by nuclear reactor owners. The NuCorp model is based on the success of the implementers in Canada, which selected a repository site in 2024; Sweden, which selected a site in 2009 and has begun construction of a repository; Finland, which began excavation of its repository deposition tunnels in 2021, and plans to dispose of the first waste in the next few years; and Switzerland, which selected a site in 2022 and plans to make a final parliamentary decision by 2031. The NuCorp would be more isolated from the political process and led by the companies who have been

safely managing nuclear waste for decades. However, in order to be successful and maintain the trust of the public, appropriate guardrails and makeup of an Advisory Committee would be necessary to advance the public interest in solving the back end of the nuclear fuel cycle.

There is no perfect answer to the correct organizational structure to manage spent nuclear fuel, but there are key attributes across all different models that must be met to be successful. The Blue Ribbon Commission highlighted the following attributes to foster success:

- **“Mission orientation**—A well-defined, stable mission, and the organizational capability to focus resources, personnel, and attention on that mission, without being diverted by other priorities.
- **Performance**—Ability to achieve and sustain high standards of technical, managerial, and craft performance through a skilled workforce supported by a high-reliability, safety-oriented culture.
- **Integrity**—The intent to be truthful, honest, accurate and open in conducting the program and to place ethical considerations and public well-being at the center of decision making.
- **Empowerment**—Sufficient authority and independence from political micromanagement to be able to implement the mission.
- **Continuity**—Stability in terms of organizational structure, culture, and leadership, particularly at the senior levels.
- **Flexibility**—The ability to anticipate and adapt to new challenges, including sufficient organizational independence to do so.
- **Transparency**—A clear, open, and transparent decision-making process.
- **Participation**—Straightforward paths for involvement by all interested parties, with adequate staff and funding dedicated to outreach.
- **Responsiveness**—The willingness and ability to respond effectively to the concerns and expectations of diverse stakeholders and constituencies.
- **Funding**—Assured financing to accomplish the mission.
- **Accountability**—Mechanisms to assure responsible action and to ensure effective oversight by Congress, independent regulators, financial and technical reviewers, and the public.
- **Constancy**—Commitment to behavior that builds trust and confidence, most importantly by delivering on promises, contracts, obligations, and deadlines.”⁹

The path ahead to solve the challenge of nuclear waste will be fraught with disagreements and negotiations. But there is strong, bipartisan consensus behind finding a solution, and for the first time, states are raising their hands to be considered as candidate sites.

Congressman Levin will continue to advance a solution at the national level, while advocating for the waste to be removed from SONGS as soon as possible.

¹². Lee H. Hamilton, Brent Scowcroft, et al, Blue Ribbon Commission on America's Nuclear Future Report to the Secretary of Energy, 2012. https://www.energy.gov/sites/prod/files/2013/04/f0/brc_finalreport_jan2012.pdf

