

SONGS Community Engagement Panel
Response to DOE RFI on Consent-Based Siting and Federal Interim Storage

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To: Members of the SONGS Community Engagement Panel (CEP)

From: David G Victor, Tim Brown and Dan Stetson

Re: Views of the CEP on Consolidated Interim Storage and on the work of the CEP

Date: 21 July 2015

At our last CEP meeting we had a very brief discussion of consolidated interim storage (CIS) based on a 14 April 2015 memo from us that outlined a “California strategy” for promoting the use of CIS. The idea behind that strategy was for the State of California to do the spadework necessary to plan for exporting spent fuel from SONGS and other reactors in the state to future CIS facilities and to articulate the main policy options. CIS, we believe, is the most viable way to get the fuel out of SONGS as expeditiously as possible. We also see quite favorable movements in the federal government and within private industry toward this kind of solution.

Because our discussion at the last meeting was short we have put this topic back on the agenda (along with several other items) at next week’s CEP meeting. Our goal is to have a practical conversation about what should be done next on CIS—what can be done in the local towns and communities, what should be done to create support in Sacramento, and what might be needed at the Federal level? The CEP is not a decision-making body, but we hope that by discussing this topic we can play a constructive role in focusing attention on the needed next steps.

To prepare the ground we have invited each CEP member to talk with us individually about their views. At the same time, we also asked each CEP member for views about how the CEP overall is functioning—a task we performed last summer and promised to do again this summer. This memo summarizes what we learned.

Please let us know if there are parts of this memo with which you

disagree. We circulate it not as a definitive record of the full range of CEP views but just as a way to efficiently focus our minds around a few core ideas since there won't be time to talk about everything.

CEP VIEWS ON CONSOLIDATED INTERIM STORAGE

None of the CEP members were opposed to CIS; all saw CIS as a means of getting the waste out of SONGS as soon as possible. Most members thought a permanent storage option would be best but all agreed on the merits of pushing for CIS in case permanent options are not available. We have not spoken with everyone, but from those we did interview we heard no strong support for requiring that the "California strategy" be limited to California sites. Most, in fact, recognized that it will be easier to site CIS facilities outside California.

Several members expressed concern that once the fuel is loaded into dry casks and stored on site that it will be easy to forget about it. There is strong motivation to solve this problem today because the fuel is in pools and not yet in casks. Some members also expressed concern about the unknown cost for all this and whether this would affect rates.

A few members expressed concerns that whatever entity takes the spent fuel must be subjected to strict oversight and regulation. If that entity is not the government then perhaps the need for oversight will be even greater.

Some members are concerned about the impact of extreme NIMBYism on the ability to implement anything—even to get approval to ship waste to CIS facilities. (In June we met with a visiting delegation of senior DOE officials; much of the discussion focused on similar concerns. More documents from that meeting, including a summary of the key issues discussed, will be shared with the CEP once we have them from DOE.)

We heard a range of views about the right political strategies that should be followed. Some folks wanted us to put more pressure on the federal government—presumably through Rep. Issa. Others thought Sacramento

was vital. Some saw merit in the various resolutions that have been adopted by local towns and councils; others, though, saw that the local political groups had little power over the key decisions and would find few allies in councils that weren't located right next to nuclear sites.

As we see it, a critical issue to discuss next week is what to do next. Mindful that the CEP is not a decision making body, this is also an area where robust public comment would be useful.

CEP VIEWS ON THE CEP

Nearly everyone thought the CEP was doing very well. A few members are concerned that the CEP is being used as a means of gauging public reactions to decisions that Edison takes on its own; most, however, see the CEP as delivering on its goal of engaging the public and providing a two-way conduit for information. Most particularly commended our workshops and meetings focused on storage of spent fuel and CIS as examples of where and how the CEP can be useful. Presentations were nearly all very useful and informative, and most members made a special point of thanking Edison for its attention to the quality of the presented material and discussions.

Several members expressed concern about our momentum now that we have covered the main topics. We also heard concerns about the need for Edison to keep high level attention focused on long-term stewardship of SONGs; right now the plant commands senior attention and has high quality leadership, but this must not be allowed to slip.

We heard a range of views about the public comment period. Most saw this as an essential element of community engagement. Some saw lots of repetition by some engaged members of the community. Most CEP members saw the public comment period as both essential and about as efficient as it could be. Several welcomed the efforts we are making to sharpen that part of the meeting.

Most CEP members saw the agendas for our meetings as reflective of public

concerns and thus appropriate. Some mentioned the need to diversify the range of topics we discuss and wondered whether there will be enough material to sustain interest as the decommissioning process matures. CEP members seemed generally comfortable with the items flagged for the agenda in the next few meetings.

There was a range of views about the quality of the website, and some CEP members pointed out that materials are still not available in a timely way and hard to find on the site.

To: SONGS Community Engagement Panel (CEP)

From: David G. Victor
Tim Brown
Dan Stetson

Re: Moving SONGS spent nuclear fuel: the role of Consolidated Interim Storage (CIS)

Date: 25 August 2015

Summary

This memo explores the options available to the CEP as we consider the question of how to move the spent nuclear fuel from the San Onofre site as quickly as possible. Action at the federal level continues to be an option, but a much more promising option lies with “consolidated interim storage (CIS).” Some private companies, notably in Texas and New Mexico, are already emerging that could take the spent fuel from SONGS and other power plants and store it until a permanent repository, such as Yucca Mountain, becomes available. The CEP has discussed this option extensively and learned that there is substantial and growing grassroots political support for offsite CIS.

Whether CIS becomes reality will depend on a huge amount of political, regulatory and policy spadework. There are questions surrounding transportation routes, funding, and many other topics that could become severe obstacles to making CIS a reality. State-level support for this option will be critical, and this memo suggests that we explore options in Sacramento for creating a select committee in the State Legislature and/or a program at the California Energy Commission (CEC) to develop an interim storage strategy for the state.

In addition, we suggest that CEP members should continue their efforts to reach out to local city councils, other governing bodies, environmental groups and other key stakeholders to build awareness of the importance of CIS for the San Onofre communities and the State of California more generally.

The issues

Over the last 18 months the CEP has devoted a substantial amount of attention to the challenges of storing high-level nuclear waste. Most of the waste generated at the plant during decommissioning is so-called “low level” nuclear waste and will be shipped to permanent repositories. That process is already under way.

But the high-level waste—in particular, the spent fuel rods—seem destined to remain at the site for the foreseeable future. The original “deal” at nuclear plants envisioned that the federal government would charge operators of nuclear power plants for the service of removing the fuel from each site and storing it permanently at a single national repository— currently in the form of Yucca Mountain. For years, the government charged operators for this service—with the money amassing in a trust fund—and began the process of building and licensing Yucca Mountain. Now, due to the political landscape and possible environmental issues, Yucca Mountain may never come to fruition. Indeed, the Department of Energy recognizes this fact and is now developing alternative sites and technologies for the permanent storage of defense nuclear waste that originally was to be stored at Yucca. Meanwhile, nuclear plant operators have successfully sued to stop paying into the trust fund with the understandable logic that they should not be paying the government for a service the government has no practical plan for delivering. Yucca might yet open one day, or it might be dead in the water.

That leaves us in the communities surrounding San Onofre in a difficult situation. We have looked closely at the technologies that will be used to store the fuel in dry casks on site. Those technologies are robust, but they need short and long term oversight and we have a good process in place for ensuring that the appropriate oversight is in place.¹ It makes little sense for San Onofre and the growing number of other decommissioning sites to leave fuel on site for the long haul, even after major decommissioning has been completed. People want the spent fuel moved out of their community.

Proposals for CEP Action

Over the last year we have seen a seismic shift in how the United States might store spent fuel. Two major companies have announced plans to build CIS facilities—one in West Texas and the other in southeastern New Mexico. Plans for yet more facilities may emerge as well. In addition, the Department of Energy has signaled that it too, favors CIS as a practical way to store spent fuel. The DOE has done this even as they continued with efforts to bring the beleaguered Yucca Mountain permanent repository online. New legislative proposals that are supportive of CIS, including legal reforms needed to help pay the cost for CIS, are advancing in both the House and the Senate.

The CEP has discussed these developments several times, and the tenor of our discussions has been highly supportive. Done well, CIS could allow SONGS to move spent fuel out of our community.

¹ David G Victor, “Safety of Long-Term Storage in Casks: Issues for San Onofre,” Report of the Chairman of the Community Engagement Panel of the San Onofre Nuclear Generating Station, 9 December 2014. Songscommunity.com

The CEP discussions have also made it clear that CIS won't happen automatically. Many other reactors have spent fuel that can be stored at these sites, and failure to offer practical solutions to a host of problems, such as transport of the spent fuel out of California, could make CIS impractical for us.

The discussions we have had within the CEP point to three concrete sets of actions.

First, we should continue the process of building grassroots political support for CIS. This requires continuing the efforts to pass city council and other resolutions in communities around the plant—and to ensure that those resolutions are supportive of a prompt movement of spent fuel from SONGS. It also requires canvassing major stakeholders, including environmental and consumer groups, to solicit their support and to explain why CIS is important.

Second, we should work with Sacramento to ensure California and possibly the entire west coast get ready for CIS. At present, the debate around nuclear waste in California has mostly focused on lamenting the lack of a serious federal policy. We must help Sacramento understand that there are now alternatives that could be feasible in the right regulatory and political environment. The discussions within the CEP and with experts on CIS policy and regulation strongly suggest that we in the San Onofre communities could do all the needed spadework ourselves. Many of the issues revolve around state regulation and we need a state-based strategy. Building that strategy will require an organization that is well-linked to the relevant state regulatory bodies yet also has analytical capabilities and experience with developing politically viable and technically-informed policy strategies. It may be important to pursue efforts that build awareness and support within the California legislature. To do that we need to engage the key Senators and members of the Assembly.

It may be useful to gain the support of the California Energy Commission (CEC) to do a strategic regulatory analysis that could lay the groundwork to make CIS a reality. Doing that would require answering a series of questions—some technical and others political. The CEC is uniquely qualified to answer these questions:

- What would be appropriate sequencing of shipments—which waste should be shipped first and what should be left on site longer?
- If problems arise with the use of NWF funds to pay for transport and interim storage how could state regulators and trust fund administrators backstop contributions from in-state reactors?
- What kinds of test shipments and activities will be needed to certify that rail and road transport systems are licensed and adequately regulated? If the storage facility is located in another state—for example, Texas—what kinds of bilateral regulatory cooperation would be needed so that testing regimes developed in one jurisdiction would be recognized in another (e.g., Arizona and New Mexico)? How should California engage effectively with other groups, notably the Western Interstate Energy Board (WIEB), that have already done extensive work in this

area so that private developers see an effective but favorable regulatory environment rather than a discouraging cacophony of state rules?

- As sites are developed in other states should California or Californian operators of nuclear sites contribute to testing and development of those sites?
- Can California credibly defer to the NRC to regulate shipments, as currently required under federal law, or would the state impose other rules and regulations?
- Do state agencies (including the CEC) need additional authority from NRC or other federal bodies in order to advance a state-led effort to advance consolidated interim storage.
- Do the states need to develop a CIS Engagement Agreement that would demonstrate their commitment to the idea as well as establish responsible agencies, clear lines of communication and common objectives?
- Can California delegate to the US Department of Transportation (DoT) to develop transport routes and the needed consent from the communities along those routes? Or should California itself—either at the state level or through the counties that do something to jump start or oversee that process?

Private firms that are developing (or considering) consolidated interim storage see the waste in California as a huge opportunity. To encourage a private interim solution to our waste problem, we need credible answers to these types of questions above. The CEP would want to work with others—including BPC and Western Interstate Energy Board (WIEB) as well as the CEC—to help articulate a full list of questions needing addressed. The CEP discussions suggest, that when the time is right, we should invite representatives from these firms to visit the CEP and talk about their plans with the public.

Third, we should consider what might be done at the federal level. So far, the CEP has not had much discussion of this topic and there may be little that we can actually do. We should track the legislation moving through Congress. As we develop support for CIS we should brief our DC representatives to make them aware of the importance of CIS for California. We should be supportive and inviting of the DOE efforts to make CIS a reality and help them where we can—including with invitations to the head of the DOE effort (John Kotek) to visit the CEP. We will need advice on whether there is more that can and should be done in DC.

We have a strong interest in demonstrating credibility and interest to as many consolidated interim storage facilities as possible. So far there may be at least two projects at various stages of preparedness—the PFS facility and now the Waste Control Specialists facility in Andrews County along the Texas/New Mexico Border—with perhaps several others to appear in the coming years. For us, there is good news with competition in the industry and options for policy makers—so that, unlike Yucca mountain, we are not held hostage to problems at one site.

San Onofre Community Engagement Panel
Strategic Plan:
Advocating for Federal Legislation to Enable Consolidated Interim Storage (CIS)
November 2016

1. Situation

- 1.1. Most stakeholders in California are aligned on need to safely store used nuclear fuel and promptly ship fuel offsite to an interim storage facility or geologic repository
- 1.2. Senate (S 854) and House (HR 3643) bills both enjoy bipartisan support
- 1.3. Two CIS facilities already in planning (WCS in Texas, Eddy-Lea in New Mexico)

2. Objectives

- 2.1. Make CIS a reality
- 2.2. Be prepared to begin shipping fuel once CIS facilities are available

3. Strategies

- 3.1. Advocate for federal legislation needed to enable CIS
- 3.2. Target the California delegation of federal elected officials (particularly newly elected officials and those not yet engaged on this issue) to bolster support for CIS
- 3.3. Leverage existing alliances:
 - 3.3.1. Decommissioning Plants Coalition, whose members include other owners of decommissioning commercial nuclear plants in the West
 - 3.3.2. Western Interstate Energy Board, High-Level Radioactive Waste Committee
- 3.4. Keep discussions at a high level (move fuel, prioritize decommissioning plants) to maximize alliances with decommissioning sites and defer granular issues (which decommissioning sites go first) so as to avoid near-term disputes
- 3.5. Work with the California Energy Commission (CEC) to understand its role with CIS and the roles of other state agencies (CPUC, CalTrans, CHP, Office of Emergency Services)
 - 3.5.1. Prepare a letter from the CEP to the CEC or other state agency to set forth the CEP's perspective on the importance of moving SONGS fuel offsite and to underscore the importance of an integrated strategy for state-level transportation planning
 - 3.5.2. Determine which if any state agencies require budget augmentation to support their planning efforts

4. Tactics

- 4.1. Messaging: Develop message platform to be used in advocacy efforts which includes affirmative reasons to support CIS, rebuttals for opposition to CIS, "DOs & DON'Ts," and a call-to-action such as encouraging members to review House/Senate legislation and consider co-sponsoring

- 4.2. Analyze Impact of November Elections: Determine the results of the election, including president, authorizing committees, appointees to federal agencies, and new California members of the House and Senate
- 4.3. One-on-One Briefings: Leverage state-level support – as evidenced by Assembly Joint Resolution 29 (Chavez) and Senate Joint Resolution 23 (Bates) – to educate and engage federal officials on CIS and include encouraging members to review House and Senate legislation and consider co-sponsoring
- 4.4. Alliances: Build alliances to extend reach and impact
 - 4.4.1. In the West, collaborate with existing alliances such as Western Interstate Energy Board, Western Governors Association, and/or Concerned Coastal Cities Coalition
 - 4.4.2. In DC, collaborate with existing alliances such as the Decommissioning Plants Coalition, Bipartisan Policy Center, and the advocacy community
- 4.5. Workshop: As needed, conduct workshop for federal elected officials to provide background on challenge of storing used fuel on an interim and permanent basis
- 4.6. “Echo Chamber”: Create an “echo chamber” around all proposed legislation to build interest, momentum, and broad-based support during what may be a multi-year effort before passage
- 4.7. DC Advocacy Trip: Consider taking a group of regional stakeholders, including local and state elected officials, to Washington DC to advocate for CIS

5. Timing

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| 5.1. Develop Message Platform | October / November |
| 5.2. One-on-one Briefings | November / December |
| 5.3. Workshop | December / January (if needed) |
| 5.4. DC Advocacy Trip | 1Q 2017 |

Testimony of Prof. David G. Victor, Chairman of the San Onofre Community Engagement Panel, before the House Oversight and Government Reform Subcommittee on Interior, Energy and Environment

September 26, 2017

Subcommittee Chairman Farenthold, Ranking Member Plaskett, and members of the subcommittee, including Representative Issa and Representative Gomez, thank you for the invitation to testify today about the national problem of storage and disposal of spent nuclear fuel. About 35 years ago Congress laid out a plan for long-term disposal of spent fuel from the country's nuclear reactors: the Nuclear Waste Policy Act (NWPA) of 1982. Since passage of that law, the government has consistently failed to meet key deadlines to remove spent fuel from the 99 operating commercial reactors at 59 sites around the country.¹ Worse, there are now 17 reactors at 14 sites in 11 states that are no longer operating—reactors, such as at San Onofre in Southern California where the spent fuel will remain stuck onsite long after the rest of the site has been shut down and removed.²

The Department of Energy has collected upwards of \$750 million annually from customers into a fund that amassed \$46 billion dollars by late 2016, the most recent audit.³ These funds were intended to defray the cost of removal and long-term disposal of spent fuel. Instead, the funds sit essentially idle. A series of lawsuits has halted those payments for many utilities, and some utilities are now being paid damages from taxpayer funds to recover the cost of continued storage of their spent fuel beyond the time when it was supposed to be accepted by the government.

For many years, this persistent failure to perform was, outside the nuclear utility industry, largely unnoticed. Nearly all reactors that were built kept operating. Unable to ship spent fuel to a permanent repository they left it on site—in pools and in dry cask storage.

The situation today is completely different. While most of the US nuclear fleet continues to operate, a growing number of reactors are in the midst of decommissioning. For these sites, the inability to remove spent fuel is particularly deplorable. Local communities have seen most of the jobs associated with these reactors, along with many other benefits, disappear. They are watching massive deconstruction projects remove reactors domes, buildings and other facilities. Yet they are still left with the spent nuclear fuel onsite, without a proper home and without any indications as to when it will eventually be removed. Some

¹ Kim Cawley, "Testimony: The Federal Government's Responsibilities and Liabilities Under the Nuclear Waste Policy Act," Before the Subcommittee on Environment and the Economy, Committee on Energy and Commerce, U.S. House of Representatives (3 December 2015).

² For detail see generally NUREG 1350. <https://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1350/>

³ Office of the Inspector General, DOE, "Audit Report," OAI-FS-17-04 (December 2016).

solutions to this problem are coming into focus, but they require changes to federal law as well as new investments where Congress and the Administration must work together.

I testify today as Chairman of the San Onofre Nuclear Generating Station (SONGS) Community Engagement Panel (CEP). SONGS Units 2 and 3 are the largest commercial reactors slated for decommissioning in the country, and the political environment around the plant is more intense than almost anywhere in the country. I serve in that role as a volunteer. I am also a Professor at the School of Global Policy and Strategy (GPS) at UC San Diego where I am also an adjunct professor in Climate, Atmospheric Sciences and Physical Oceanography at the Scripps Institution of Oceanography.

Back in 2013 when the operator of the plant, Southern California Edison (SCE) decided to decommission the facility it also set up this panel to open a two-way conduit between SCE (and its co-owners, San Diego Gas and Electric, the City of Anaheim and the City of Riverside) and the communities that would be affected by the decommissioning process. Over the last three years the CEP has provided exactly that function. It has offered ways for SCE to learn about the concerns of the communities—for example; the impact of shrinking the SONGS emergency planning systems, now that the plant poses a lower hazard to the community, on the budgets of first responders, hospitals and other essential public services. It also offers a way for SCE to help inform the communities about how decommissioning will unfold; the economic and environmental impacts, and the various strategies being adopted to mitigate adverse impacts. We meet quarterly and have 17 members (with one vacancy)—all volunteers, drawn from the local communities and a blend of public officials, representatives from environmental NGOs, business, labor, and other stakeholders. We are not a formal decision-making body nor do we have official oversight functions—there are plenty of other bodies with those powers and responsibilities.⁴ I speak today as a private citizen who happens to be Chairman of the CEP, and I reflect on what we have learned over the three years of CEP operation.

Without a doubt, one topic has attracted the most attention at our CEP meetings and in the local communities: spent fuel. As in any community, there are many different views about a technology like nuclear power. With the closure of SONGS, I thought, that many of those diverging viewpoints would become moot and the communities could come together and focus on the best plan for decommissioning. Instead, many people have been shocked to learn that decommissioning of the plant does not mean removal of everything—the spent fuel remains because there is no place to send it. By not offering a practical place and method to ship spent fuel the Federal government has, through inaction, created a whole new array of acrimonious debates and controversy within local communities about how best to steward the spent fuel. I have observed and been in the middle of those debates for three years and the rest of my testimony outlines what I have seen and learned.

⁴ For more, including documents and video from every meeting, see www.songscommunity.com

The importance of moving the fuel out of local communities at decommissioned sites.

First, I can't emphasize enough the importance of offering practical ways for decommissioned sites to move spent fuel out of their communities to other, more appropriate locations. Offering a practical route to that outcome would be enormously valuable to our communities. That route could involve finishing Yucca Mountain and allowing consolidated interim storage (CIS), also known as interim storage facilities (ISF), and I'll talk about that next. But people are most looking for is a viable plan that addresses an urgent problem—a problem that is not so pressing in communities with operating reactors but is vitally important to those where reactors are undergoing decommissioning and will have stranded spent nuclear fuel left with reduced security at the decommissioning site.

We are particularly concerned that the current arrangements at the Department of Energy (DOE) are opaque about which spent fuels will ship first. This problem has not been important to solve over the last few decades because there was no place to ship. Today that might be different and I would urge Congress to help DOE develop a more coherent set of priorities. The current "standard contract" for fuel shipments, while ambiguous, suggests that the oldest fuel will ship first. That approach will create an inefficient and incoherent shipment pattern—with canisters moved across a patchwork of sites, and no site happy with the outcome. We should put the decommissioned sites first because those sites are no longer generating spent fuel, in most cases are removing reactors and support buildings, and gain much smaller economic benefit from hosting these facilities. By contrast, sites with operating reactors will always have spent fuel in their reactor cores, fuel pools and dry cask pads. For all these communities, it is important to have a viable long-term plan for spent fuel removal; for decommissioned sites the imperative is particularly compelling.

Political Realism

We in the San Onofre communities have learned that the politics of finding solutions to this problem are difficult. For years, Yucca Mountain has been a political lightning rod in ways that have made it exceptionally difficult—at times, impossible—to move forward with that site. The prospect of Consolidated Interim Storage might prove politically more tractable because, when combined with consent-based siting, it allows communities to nominate themselves to become storage sites. Following the guidance of the bipartisan Blue Ribbon Commission (BRC) report, we are encouraged that a process of informed consent has emerged and led to two communities volunteering themselves for CIS facilities. Today, my sense is that one of those sites is viable and that it enjoys healthy support from much of the local communities. The other site is owned by a company that paused its licensing process due to a planned acquisition which most likely will leave their CIS operations by the wayside. The viable site is in New Mexico where the governor of New Mexico has given approval for this CIS facility. The local entity that owns the land Eddy-Lea Energy Alliance (ELEA) wants the facility that is set to monitor at least 10,000 dry storage canisters in partnership with Holtec International. The ELEA is composed of

cities of Carlsbad and Hobbs and the counties of Eddy and Lea. The community purchased the 1000 acres and has strong local support for the CIS facility. This is the model we must continue to pursue of the government working with communities to find volunteers who want to help deal with the national crisis of stranded spent nuclear fuel around the country. Earlier this year we hosted officials from ELEA at a CEP meeting, and I was impressed by the level of planning and awareness.

In the densely populated communities around San Onofre, our interest is to advance any responsible program that moves the spent fuel out of our neighborhoods as quickly as possible. For us, that means Yucca and CIS simultaneously. Over the last three years, we have learned three important things about how to pursue this goal.

First, the nation does not benefit from monopolies. To some degree, the problems at Yucca Mountain are the result of the country having just one option. As that option has faltered the whole nation's industry, along with communities around nuclear power plants, have suffered. The original plan, way back when the NWPA was signed into law, was to have two sites. Expedience in public sector spending and noxious politics whittled that roster down to one, and that outcome has been harmful. I am very concerned that the same will happen with CIS. Overall, the nation and the communities that are hosting spent nuclear fuel would benefit from having many options.

Second, and equally important, it is crucial that CIS be viewed as a complement to Yucca Mountain (and to other means of permanent spent fuel disposal—for example, deep borehole technology). I appreciate that over the last year that much of the newfound enthusiasm for acting on spent fuel is rooted in a desire to restart Yucca Mountain. But any realistic scenario for Yucca must deal with the reality that Yucca is still a long time coming. The site is not operational. Once operational, fuel will need repackaging so that casks with large numbers of fuel assemblies are put into smaller units with fewer assemblies and lower heat loads. All that will take time.

For the communities around San Onofre, those realistic delays in starting Yucca create the imperative for CIS. We want the spent fuel moved. For the nation as a whole, those delays offer an important logic for CIS: safety and saving money. It is much wiser to store spent fuel at a small number of large sites, far from population centers, than dozens of sites scattered around the country. Scientists at Oak Ridge National Laboratory have estimated the cost savings from a robust CIS program and found that we could avoid \$15-30b in expenditure in light of expected delays in reopening Yucca Mountain.⁵ Fiscal prudence demands that CIS be part of the overall strategy.

⁵ For an overview see J. Jarrell "Does Consolidated Interim Storage Make Sense in an Integrated Waste Management System?" Oak Ridge National Laboratory, NEI Used Fuel Management Conference, May 2017, Savannah, GA. Numbers here are undiscounted. For discounting and sensitivity analysis see: Cost Sensitivity Analysis for Consolidated Interim Storage of Spent Fuel: Evaluating the Effect of Economic Environment Parameters (Cumberland et al., FCRD-NFST-

Third, the political coalitions around nuclear power are in flux when it comes to spent fuel. There is a well-known debate about the role of nuclear power in the nation's future energy mix, and active industry efforts to improve performance to keep as many of the existing fleet operational. There are also well-known battle lines drawn for and against nuclear power. What has impressed me about spent fuel is that those battle lines have shifted. Many groups that have been skeptical or outright against operational nuclear plants—such as the Natural Resources Defense Council and the Union of Concerned Scientists—are aligned in favor of finding smart strategies for storing spent fuel, including CIS. It is really important that the larger, heated and probably irreconcilable differences about operational reactors not cloud the fact that many more communities are coming together to find solutions to storing spent fuel.

For Congress, these three lessons suggest that the current efforts—far advanced in the House and still developing in the Senate—to amend the NWPAA are profoundly important. As those efforts proceed it is important that the Yucca mission, which has attracted more attention and political energy, not leave CIS aside.

Toward a Long-term Strategy: the Roles of Stewardship and Transportation

Compared with three years ago, there has been striking progress, especially in the House, toward new legislation that would address many of the obstacles to restarting Yucca and also authorizing a new program of consolidated storage. While that is admirable, we also need to grapple with the consequences of a long delay in arriving at this point. It is also crucial to grapple with the fact that most people outside Washington are skeptical that Washington can organize and motivate itself to make practical changes in law and back those with reasonable appropriations. What I have seen in the local communities around San Onofre is concern that Washington is so broken that reasonable bipartisan legislation, such as smart amendments to the NWPAA, can't survive the legislative process.

This skepticism has three practical implications. First, while there are some actions that DOE or NRC can do to advance consolidated storage and promote smart stewardship of the nation's spent nuclear fuel, the most important actions require a change in federal law. Getting House (HR 3053) and Senate versions into conference is essential, lest Congress itself be seen as a central obstacle to progress in what has been, so far, largely an Executive Branch failure to deliver on promises made to the American people—especially the people living within the foot prints of nuclear reactors. I have testified at the NRC about their efforts to streamline the regulatory process, which are admirable.⁶ But the reality is that the NRC is already doing what

2016-000721, Rev. 1 ORNL/SR-2016/681) Available at <https://curie.ornl.gov/content/cost-sensitivity-analysis-consolidated-interim-storage-spent-fuel-evaluating-effect-economic>

⁶ 2014. David G. Victor. Decommissioning at San Onofre: The Community Engagement Experience. Testimony to the Nuclear Regulatory Committee. For more information see

it can; even without streamlining of the regulatory process for decommissioned sites those sites are finding ways to cope with NRC procedures through exemptions. What everyone is waiting for is enabling federal law.

Second, because of these delays—and skepticism about when they will be resolved—the nation’s nuclear sites are now gearing up to monitor and manage spent nuclear fuel casks in ways that were never intended. The original plan was that spent fuel would be removed from reactor cores, cooled in pools onsite, and then put into canisters and casks for brief local storage and expeditious removal. Because that last step in the chain has never happened, the canisters and cask systems are now aging in place. At the urging of the CEP, SCE has developed an extensive program for monitoring the casks and inspecting the canisters while they are on site.⁷ Recent legal challenges and settlements have reinforced that effort.⁸ We are fortunate in that other sites built dry cask systems before SONGS and we can learn from their aging management programs. To give you a sense of just how long the delays have extended, as of today several sites have seen the original 20 year NRC license for on-site dry cask storage run its course, with each getting a 40-year renewal. At the most recent CEP meeting we devoted the entire session to this topic.⁹

Third is transportation. There is an understandable tendency in Washington to do what can be done. This tendency has generated legislation that focuses on Yucca Mountain and brings CIS along. But we must focus, now, on the reality that all of these strategies will not work unless there are viable ways to move spent fuel from reactor sites to CIS and/or permanent repositories. The US Navy safely ships defense spent nuclear fuel and related materials around the country on a regular basis—thousands of shipments—using an effective and credible government planning system and emergency training for its routes. This system must be available to the DOE as it takes authority over spent nuclear fuel transportation. The NRC has procedures ready for use in this area (NUREG 0725). Safe transportation of spent commercial reactor fuel is not a technical problem, but it is one that needs careful administrative planning and political awareness.

A serious transportation plan would have several elements:

- A program for testing and building railroad cars for moving spent fuel casks. This is a DOE responsibility, and with current appropriations DOE will test a prototype rail car (along with other support cars) over the next 2 years. That’s good news, but there are

<https://www.nrc.gov/reading-rm/doc-collections/commission/slides/2014/20140715/victor-20140715.pdf>

⁷ 2014. David G. Victor. Safety of long-term storage of spent nuclear fuels at SONGS. Report of the Chairman of the Community Engagement Panel of the SONGS. For more information see https://www.songscommunity.com/docs/LongTermStorageofSpentFuel_120914.pdf

⁸ 2017. Citizens Oversight, Inc. V. Southern California Edison. For more information see https://www.songscommunity.com/doc_library_settlement.asp

⁹ 2017. 3Q Meeting of the Community Engagement Panel. Oceanside, California. For more information see <http://www.songscommunity.com/091417CEPMeetingAgenda.pdf>

no appropriations to build a fleet of these cars as will be needed to move spent fuel expeditiously. Elsewhere I have outlined the state of play and costs, which are small.¹⁰

- The states and regions must get ready. When DOE was planning to move waste from the nuclear weapons sites—such as in Colorado and Washington—state and regional officials got organized to help plan routes, safety and procedures. The states where these sites were shipping nuclear materials had an incentive to make this work because they wanted the sites cleaned up. By contrast, very little to none of the necessary spadework for local, state and regional planning of spent fuel shipments has been done. There is legislation in California that would help.¹¹ The CEP has reached out to the California Energy Commission on this topic.¹² And the Western Governors Association could easily be tapped—as could regional state associations in other parts of the country. The problem is that nobody has believed that serious solutions for spent nuclear fuel would be forthcoming. Now that they are, the transportation planning processes must gear up—with a key role for the Federal government.

All the authority needed to fix this problem does not rest with Congress but many are looking to Congress for leadership and initiative in getting the process started. A good start would be to ensure that a title on transportation is included in NWSA Amendments (inserted, presumably, in Conference), appropriations to build the needed railcar system are included in a timely way (probably starting next fiscal year), and the states are encouraged if not mandated to get organized. Under plausible yet optimistic scenarios, CIS facilities could be open in the early 2020s. Spent fuel at SONGS (and many other sites) would be ready for shipment then. It would be a pity if all the work done to open storage and permanent disposal facilities falters for lack of attention to transportation.

Final Words

In a large and diverse nation such as ours, there always seems to be a more pressing and urgent matter that captures political attention. Meanwhile, critical questions about the nuclear industry and its infrastructure remain unanswered for decades while leaving un-spent billions of dollars. Inaction has pushing these questions to future generations to answer.

These delays only succeed in creating distrust in the ability of government to find a workable solution, anger towards the plant operators and creates an impossible future for those communities that involuntarily host these sites. All we ask is that those who can act and make a difference, do so with all possible urgency.

¹⁰ David Victor, Tim Brown and Dan Stetson, “Participants in 12 June telephone call with DOE to discuss transportation of spent nuclear fuel,” 26 June 2017, see www.songscommunity.com

¹¹ 2017. Nuclear Waste Policy Amendments Act of 2017. For more information see <https://www.congress.gov/bill/115th-congress/house-bill/3053>

¹² Letter from David Victor, Tim Brown and Dan Stetson to Robert Weisenmiller, Chairman of the California Energy Commission, 12 December 2016. see www.songscommunity.com

A plan for smart removal of spent nuclear fuel from the nation's commercial reactors is now coming into focus. It will require new legislation and a new focus by the federal government, as well as the states and regional planning authorities.

I see three steps as essential. First, the political deal must be done that allows for consolidated interim storage, and that deal as far as I can tell centrally requires restarting the Yucca Mountain process. Yucca and CIS should be seen as complements to each other. Politically they are combined; economically and technically they are also combined because interim storage allows for a more rational long-term strategy that includes opening a permanent storage facility. Second, a fresh look at the priorities for removing spent fuel is needed. When options for sending the fuel become viable there will be much more fuel ready to move than the system can handle. We think decommissioned sites should be high in the queue. Third, a viable strategy for transportation is needed—a topic that has been orphaned by the lack of suitable places to send the fuel. Transportation requires some funds (small, mainly for rail cars and planning) and crucially that federal, state and other officials begin working together on strategies.

Congressional Field Hearing – June 7, 2019
House Committee on Oversight and Reform - Subcommittee on Environment
Representative Harley Rouda, Chairman

Dan Stetson, Witness
Vice Chair, SONGS Community Engagement Panel

Introduction

Good morning Mr. Chairman and members of the Subcommittee. Thank you for the opportunity to appear and testify at today's hearing. My name is Dan Stetson¹ and I serve as Vice Chairman of the Community Engagement Panel or "CEP" for the San Onofre Nuclear Generating Station, or "SONGS" for short.

CEP History

I was invited here today to serve as a representative of the SONGS CEP. The CEP was formed early 2014 after the retirement of SONGS in 2013. The purpose of the CEP is to serve as a bridge and conduit between SCE and the local communities.

The 18 members² of the CEP represent a range of stakeholders, from environmental NGOs and Native American Tribes to business and organized labor. More than half are local elected officials – from Oceanside to Dana Point - sworn to represent best interests of their constituents. All are volunteers.

There are three officers including Chairman Dr. David Victor of UCSD ... myself, Dan Stetson, Vice Chairman ... and Jerry Kern, immediate past city council member from Oceanside. Officers provide input to SCE on agenda topics and public engagement.

We hold quarterly meetings and periodic workshops. All are open to the public for transparency. Meetings are webcast live and video recordings are posted online.³ We provide one full hour for public comment.

¹ See appendix for resume

² List of CEP members is available at <https://www.songscommunity.com/community-engagement/community-engagement-panel>

³ Past CEP meetings may be viewed at <https://www.songscommunity.com/community-engagement/meetings>

What's Important?

Over the past 5-plus years, the CEP has addressed a variety of issues that are important to the local communities.

But I have learned that there really are just a couple of truly important issues. The first is safety managing the spent fuel while it is on site and the second is removing the spent fuel from the site.

Dry Cask Storage Canisters

Let me first address on-site storage and, more specifically, dry cask storage. This is what we on the CEP have come to call “defense-in-depth” for dry cask storage. Defense in depth means looking at the full complement of means to support safe on-site storage of spent fuel.

This starts with design and fabrication of the spent fuel canisters, while also considering operations, maintenance and security, as well as canister inspections, and—if needed—remediation of a compromised canister.

Dry cask storage has been addressed frequently at CEP meetings in the past 5-plus years. I am proud to say I am among those on the SONGS CEP who have advocated with SCE to help shape the utility’s approach to spent fuel management. Edison has taken concrete steps to address areas of interest. One such step is laser peening the welds on the new canisters to minimize the risk of chloride-induced stress corrosion cracking of the canister shells.

Offsite Storage and/or Disposal

The second important issue is moving the spent fuel offsite. Over the years, most but not all members of local communities also have expressed an interest in moving the spent fuel offsite from San Onofre to a federally licensed storage or disposal facility. Offsite storage has been addressed frequently at CEP meetings over time.

Just consider the costs. As the schedule for the Department of Energy to pick up spent fuel continues to slip, the 2018 Audit Report of the Office of the Inspector

General⁴ estimates that slippage costs to American tax payers of over 35 billion dollars, or approximately 2.2 million dollars per day.

To address offsite storage, Chairman David Victor delivered testimony⁵ the fall of 2017 before the House Oversight and Government Reform Subcommittee on Interior, Energy & Environment. David, Jerry, and I are among those CEP members who have met with members of the California Congressional delegation to advance federal legislation for spent fuel. In April, I met with 5 members of Congress and/or their staff, including staff from Representative Rouda's office.

Congressional outreach is part of a broader effort to try to effect changes to the Nuclear Waste Policy Act and enable consolidated interim storage and permanent disposal.

I appreciate the request by Representative Rouda and others for 25 million dollars in the Energy & Water Appropriations bill to help fund CIS, transportation, and infrastructure.

On behalf of the SONGS Community Engagement Panel, let me close by saying thank you for making this a top priority. We look forward to additional action in Congress to get spent fuel at San Onofre off site.

With the passage of the Nuclear Waste Policy Act of 1982, Congress made a solemn promise to the American people. To date that promise remains unfulfilled. We are counting on you to keep this promise and solve this seemingly intractable problem ... once and for all.

Thank you for your attention.

⁴ See appendix for the Audit Report and supporting material

⁵ See appendix for testimony

APPENDIX

Daniel T. Stetson

Dan has never had a job East of Pacific Coast Highway. He is currently the Executive Director and a Trustee of The Nicholas Endowment. The Endowment was created by Broadcom co-founder Dr. Henry Nicholas III and his wife Stacey Nicholas to provide meaningful support to charitable organizations in the advancement of science, education and the arts.

Dan also serves as vice chairman of the Community Engagement Panel (CEP) established in February 2014 to encourage open communication, public involvement and education throughout the decommissioning of San Onofre nuclear plant. The CEP was established by current and former owners of San Onofre responsible for decommissioning: Southern California Edison, San Diego Gas & Electric, and the cities of Riverside and Anaheim.

Dan served as President and CEO of the Ocean Institute from 2005-2015, after having joined the Institute in 1992. The Ocean Institute is an educational non-profit organization located in Dana Point, California that provides inspiring marine science and maritime history programs for over 100,000 students annually. Under Dan's leadership, the programs became nationally renowned and received the inaugural Walter Cronkite Award for Excellence in Maritime Education.

Immediately prior to his tenure at the Ocean Institute, Dan consulted for the law firm of Pillsbury, Madison & Sutro representing a foreign shipping company involved in an oil spill incident. Dan managed the compensation process for over 2,000 claimants from the largest oil spill in the LA Harbor's history. While the spill was originally attributed to his client's cargo ship, Dan's efforts led to the discovery of evidence that the majority of the spill (93%) was actually from a previously unidentified ship. Dan testified as an expert witness in criminal court. In the resulting civil trial, 100% of the client's multimillion dollar clean up and claims expenses were recovered.

Dan has a BA from UC Santa Barbara and an MBA from California State University, Fullerton. He is a veteran of the US Coast Guard. Together with Roxanne, his wife of 33 years, Dan enjoys hiking, tennis, and diving.



OFFICE OF INSPECTOR GENERAL

U.S. Department of Energy

AUDIT REPORT

DOE-OIG-19-08

November 2018

**DEPARTMENT OF ENERGY NUCLEAR
WASTE FUND'S FISCAL YEAR 2018
FINANCIAL STATEMENT AUDIT**



Department of Energy
Washington, DC 20585

November 27, 2018

**MEMORANDUM FOR THE DIRECTOR, OFFICE OF STANDARD CONTRACT
MANAGEMENT**

Sarah B. Nelson

FROM: Sarah B. Nelson
Assistant Inspector General
for Audits and Administration
Office of Inspector General

SUBJECT: INFORMATION: Audit Report on the "Department of Energy Nuclear
Waste Fund's Fiscal Year 2018 Financial Statement Audit"

The attached report presents the results of the independent certified public accountants' audit of the balance sheets of the Department of Energy Nuclear Waste Fund, as of September 30, 2018, and 2017, and the related statements of net cost, changes in net position, and statements of budgetary resources for the years then ended.

To fulfill Office of Inspector General audit responsibilities, we contracted with the independent public accounting firm of KPMG LLP to conduct the audit, subject to our review. KPMG LLP is responsible for expressing an opinion on the Nuclear Waste Fund's financial statements and reporting on applicable internal controls and compliance with laws and regulations. The Office of Inspector General monitored audit progress and reviewed the audit report and related documentation. This review disclosed no instances where KPMG LLP did not comply, in all material respects, with generally accepted Government auditing standards. The Office of Inspector General did not express an independent opinion on the Nuclear Waste Fund's financial statements.

KPMG LLP concluded that the combined financial statements present fairly, in all material respects, the respective financial position of the Nuclear Waste Fund as of September 30, 2018, and 2017, and its net costs, changes in net position, and budgetary resources for the years then ended, in conformity with United States generally accepted accounting principles.

As part of this review, auditors also considered the Nuclear Waste Fund's internal controls over financial reporting and tested for compliance with certain provisions of laws, regulations, contracts, and grant agreements that could have a direct and material effect on the determination of financial statement amounts. The results of the auditors' review disclosed no instances of noncompliance or other matters required to be reported under generally accepted Government Auditing Standards or applicable Office of Management and Budget guidance.

Attachment

cc: Chief Financial Officer, CF-1
Director, Office of Finance and Accounting, CF-10
Deputy Director, Office of Finance and Accounting, CF-10
Assistant Director, Office of Financial Policy and Internal Controls, CF-12
Division Director, Office of Financial Policy and Internal Controls, CF-12
Audit Resolution Specialist, Office of Financial Policy and Internal Controls, CF-12

Audit Report: DOE-OIG-19-08

INDEPENDENT AUDITORS' REPORT

**UNITED STATES DEPARTMENT OF ENERGY
NUCLEAR WASTE FUND**

Annual Financial Report

**As of and for the Years Ended
September 30, 2018 and 2017**

November 13, 2018

**UNITED STATES DEPARTMENT OF ENERGY
NUCLEAR WASTE FUND**

Annual Financial Report
September 30, 2018 and September 30, 2017

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Management's Discussion & Analysis

Reporting Entity

The Nuclear Waste Policy Act of 1982 (NWPAA) (Public Law 97-425) established the Office of Civilian Radioactive Waste Management (OCRWM) within the United States (U.S.) Department of Energy (Department or DOE). OCRWM's mission was to manage and dispose of the Nation's spent nuclear fuel (SNF) and high-level radioactive waste (HLW). The Nuclear Waste Policy Amendments Act of 1987 (Title V, Public Law 100-203) directed the Secretary of Energy to characterize only the Yucca Mountain site in Nevada as a candidate site to determine if it was suitable for a repository for SNF and HLW.

Once the characterization of the Yucca Mountain site was completed, the Secretary recommended the site to the President. In July 2002, the President signed into law the Congressional Joint Resolution designating Yucca Mountain as the site for the Nation's first SNF and HLW repository. In 2008, OCRWM submitted a license application to the U.S. Nuclear Regulatory Commission (NRC or the Commission) seeking authorization to construct the Yucca Mountain repository.

In fiscal year (FY) 2009, the previous Administration decided to terminate the Yucca Mountain Project. In January 2010, at the direction of the President, the Secretary announced the formation of the Blue Ribbon Commission (BRC), which was shortly followed by the FY 2011 Budget Request with a zero budget request for OCRWM. In March 2010, the Department filed a motion to withdraw with prejudice the Yucca Mountain License Application pending before the Atomic Safety and License Board (ASLB or Board), the independent adjudicatory body of the Nuclear Regulatory Commission (NRC or Commission). In June 2010, the ASLB issued an order denying the Department's motion to withdraw the License Application, which the Department appealed to the Commission. By the beginning of FY 2011, the Department had disbanded OCRWM, and shifted OCRWM program responsibilities to various Departmental Program Secretarial Offices. Among these shifts, the Office of General Counsel (OGC) is now responsible for ongoing litigation and oversight of regulatory activities associated with the NWPAA, the Nuclear Waste Fund (NWF), and the Standard Contract for the Disposal of Spent Nuclear Fuel and/or High-Level Radioactive Waste (10 CFR 961) with utilities (Standard Contract).

In July 2011, a lawsuit was filed against the NRC in the U.S. Court of Appeals for the District of Columbia (DC) Circuit requesting that the court order the NRC to continue reviewing the Yucca Mountain license application.

In September 2011, the NRC issued its decision in which the Commission (1) announced it was split evenly on the question whether the NRC's ASLB had properly refused to allow the Department's motion to withdraw the Yucca Mountain construction license application with prejudice, and (2) unanimously held that "budgetary limitations" required the ASLB to dispose of pending matters by the end of FY 2011 and to document the history of the adjudicatory process. Subsequently, the ASLB issued a memorandum and order suspending the adjudicatory portion of the licensing proceeding due to uncertainty regarding the availability of future appropriations from the NWF to pay for future proceeding and a lack of staff to continue the proceeding. The adjudicatory portion of the licensing proceeding remains suspended due to lack of appropriations.

The BRC submitted a final report in January 2012 with its recommendations for consideration by the Administration and Congress, as well as interested state, tribal and local governments, other stakeholders, and the public.

In August 2013, the U.S. Court of Appeals for the DC Circuit issued an order to the NRC to promptly continue with the legally mandated licensing proceeding unless and until Congress authoritatively says otherwise or there are no appropriated funds remaining.

In November 2013, the NRC requested the Department prepare the supplemental environmental impact statement (EIS) that the NRC staff determined was needed for purposes of the review of the application under the National Environmental Policy Act (NEPA). In October 2014, the Department provided an updated version as of July 30, 2009, entitled, *Analysis of Postclosure Groundwater Impacts for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nye County, Nevada*. In May 2016, the NRC subsequently issued the report as the *Supplement to the U.S. Department of Energy's Environmental Impact Statement for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nye County, Nevada (NUREG-2184, Final Report)*.

No funds for Yucca Mountain were requested in the FY 2017 Budget Request. Funds for Yucca Mountain were requested in the FY 2018 and FY 2019 Budget Requests, but not received. Funds remaining prior to disbanding OCRWM have been used between October 1, 2010 and September 30, 2018 to continue the management of the NWF, litigation activities, for additional closure activities under the previous Administration, and for exploratory activities under the current Administration to prepare for a resumption of DOE participation in the licensing proceeding pursuant to the FY 2018 and 2019 Budget Requests. The funds are managed by the Office of Nuclear Energy.

In accordance with the NWPA, the Department entered into more than 68 Standard Contracts with utilities in which, in return for payment of fees into the NWF, the Department agreed to begin disposal of SNF by January 31, 1998. Because the Department has no facility available to receive SNF under the NWPA, it has been unable to begin disposal of the utilities' SNF as required by the contracts. Significant litigation claiming damages for partial breach of contract has ensued as a result of the Department's delay.

Fiscal Year 2018 and 2017 Financial Performance

The principal financial statements have been prepared to report the financial position and results of operations of the entity, pursuant to the requirements of 31 United States Code 3515 (b). While the statements have been prepared from the books and records of the entity in accordance with Generally Accepted Accounting Principles for Federal entities and the formats prescribed by the Office of Management and Budget (OMB), the statements are in addition to the financial reports used to monitor and control budgetary resources, which are prepared from the same books and records. The statements should be read with the realization that they are for a component of the U.S. Government, a sovereign entity.

The NWF consists of fees paid by the owners and generators of SNF from commercial reactors, in accordance with provisions of their contracts with the Department for disposal services. NWF assets in excess of those authorized by Congress to pay Nuclear Waste Policy Act costs are

invested in U.S. Treasury securities. On November 19, 2013, the U.S. Court of Appeals for the District of Columbia Circuit found that the Department did not have a legitimate basis to evaluate the ongoing fee and directed the Department to propose to Congress a reduction of the ongoing fee to zero. The Department complied and such proposal became effective on May 16, 2014. The Nuclear Waste Policy Act originally provided that the federal government would pay the costs of defense-generated nuclear waste directly into the Nuclear Waste Fund. However, Congress in 1993 changed that requirement to instead establish a separate Defense Nuclear Waste Disposal appropriation (DNWDA).

As of September 30, 2018, cumulative billings from fees and the DNWDA, totaled approximately \$25.4 billion; and cumulative interest earnings and other revenue totaled approximately \$27.8 billion. As of September 30, 2018, cumulative expenditures by the Department from appropriations and amounts authorized by Congress, including direct appropriations to the NRC, the now defunct Office of the Nuclear Waste Negotiator, and the Nuclear Waste Technical Review Board, totaled approximately \$11.4 billion.

As of September 30, 2018 and 2017, the U.S. Treasury securities held by the NWF were \$39.2 billion and \$37.6 billion, respectively, and had a fair value of \$43.4 billion compared to \$44.5 billion.

Offsetting NWF investments and receivables are deferred revenues, which reflect the cumulative fees billed, related accrued interest, and investment income in excess of expenditures since inception. As of September 30, 2018 and 2017, the combined deferred revenue balance was \$41.9 billion and \$40.3 billion, respectively. The increase from investment income and net gains from the maturity of securities was \$1.5 billion for FY 2018 and FY 2017.

The Department estimates the remaining liability associated with the partial breach of the Standard Contract and has reflected that amount on the Commitments and Contingencies line of the balance sheet. As of September 30, 2018 and 2017, the estimate of the remaining liability from SNF litigation was \$28.1 billion and \$27.2 billion, respectively. Since no appropriation related to fulfilling the Department's NWPA obligations was received for FY 2019, an additional year of delay was added to the current estimate. Judgments and settlements for damages related to the partial breach are paid by the Judgment Fund.

ANALYSIS OF SYSTEMS, CONTROLS, AND LEGAL COMPLIANCE

Analysis of systems, controls, and legal compliance is performed, reported, and audited at the Departmental level. The results of these reviews and assessments are incorporated in the Department's Annual Financial Report. A significant issue, SNF and HLW Disposal, was reported by management in FY 2018 and FY 2017 and is described below.

Federal Managers' Financial Integrity Act

The Federal Managers' Financial Integrity Act (FMFIA) of 1982 requires that agencies establish internal control and financial systems to provide reasonable assurances that the integrity of Federal programs and operations are protected. Furthermore, it requires that the head of the agency provide an annual assurance statement on whether the agency has met this requirement and whether any material weaknesses exist.

In response to the FMFIA, the Department developed an internal control program which holds managers accountable for the performance, productivity, operations, and integrity of their programs through the use of management controls. Annually, senior managers at the Department are responsible for evaluating the adequacy of the internal controls surrounding their activities and determining whether they conform to the principles and standards established by the Office of Management and Budget, and the Government Accountability Office. The results of these evaluations and other senior management information are used to determine whether there are any internal control problems to be reported as material weaknesses. The Departmental Internal Control and Audit Review Council, the organization responsible for oversight of the Management Control Program, makes the final assessment and decision for the Department.

Significant Issue - SNF AND HLW DISPOSAL

The government's acceptance of SNF and HLW, authorized under the NHPA, has been delayed by various factors.

Actions Taken and Remaining

The previous Administration issued the "Strategy for the Management and Disposal of Used Nuclear Fuel and High-Level Waste" on January 11, 2013 (Strategy), but no Congressional action was taken to fully implement the Strategy. The key assumptions from the Strategy were: that (1) a pilot storage facility will be operational in 2021 to allow for the removal of SNF from shut down reactors; (2) an interim storage facility will be operational in 2025 to begin the removal of SNF from operating nuclear power reactors and (3) that reactors will incur costs reimbursable by the Department until the Department has fulfilled its obligations under the agreements.

In March 2017, the current Administration submitted *America First - A Budget Blueprint to Make America Great Again* to Congress that included the restart of licensing activities for the Yucca Mountain nuclear waste repository and initiation of a robust interim storage program which were subsequently reflected in the Administration's FY 2018 Budget Request in May 2017. In February 2018, the Administration's FY 2019 Budget Request again included the restart of licensing activities for the Yucca Mountain nuclear waste repository. However, no funding was provided related to the Yucca Mountain repository in the Consolidated Appropriations Act for FY 2018 passed in March 2018 or the Energy and Water, Legislative Branch, and Military Construction and Veterans Affairs Appropriations Act, 2019, passed in September 2018.



KPMG LLP
Suite 12000
1801 K Street, NW
Washington, DC 20006

Independent Auditors' Report

Acting Inspector General, United States Department of Energy and
United States Department of Energy Nuclear Waste Fund:

Report on the Financial Statements

We have audited the accompanying financial statements of the United States Department of Energy (Department) Nuclear Waste Fund, which comprise the balance sheets as of September 30, 2018 and 2017, and the related statements of net cost, changes in net position, and statements of budgetary resources for the years then ended, and the related notes to the financial statements.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with U.S. generally accepted accounting principles; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditors' Responsibility

Our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits in accordance with auditing standards generally accepted in the United States of America, in accordance with the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States, and in accordance with Office of Management and Budget (OMB) Bulletin No. 19-01, *Audit Requirements for Federal Financial Statements*. Those standards and OMB Bulletin No. 19-01 require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditors' judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the United States Department of Energy Nuclear Waste Fund as of September 30, 2018 and 2017, and its net costs, changes in net position, and budgetary resources for the years then ended in accordance with U.S. generally accepted accounting principles.

KPMG LLP is a Delaware limited liability partnership and the U.S. member firm of the KPMG network of independent member firms affiliated with KPMG International Cooperative ("KPMG International"), a Swiss entity.



Emphasis of Matter

As discussed in Note 9 to the financial statements, the Department is involved as a defendant in several matters of litigation relating to its liability to accept commercial spent nuclear fuel by January 1, 1998, the date specified in the Nuclear Waste Policy Act of 1982, as amended. The Department of Energy Nuclear Waste Fund has recorded an estimate of its liability related to this matter of \$28.1 billion and \$27.2 billion as of September 30, 2018 and 2017, respectively. Our opinion is not modified with respect to this matter.

Other Matters

Required Supplementary Information

U.S. generally accepted accounting principles require that the information in the Management's Discussion and Analysis section be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Federal Accounting Standards Advisory Board who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audits of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Other Information

Our audits were conducted for the purpose of forming an opinion on the basic financial statements as a whole. The Other Information – Schedules I and II – is presented for purposes of additional analysis and is not a required part of the basic financial statements. Such information has not been subjected to the auditing procedures applied in the audits of the basic financial statements and, accordingly, we do not express an opinion or provide any assurance on it.

Other Reporting Required by Government Auditing Standards

Internal Control over Financial Reporting

In planning and performing our audit of the financial statements as of and for the year ended September 30, 2018, we considered the United States Department of Energy Nuclear Waste Fund's internal control over financial reporting (internal control) to determine the audit procedures that are appropriate in the circumstances for the purpose of expressing our opinion on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of the United States Department of Energy Nuclear Waste Fund's internal control. Accordingly, we do not express an opinion on the effectiveness of the United States Department of Energy Nuclear Waste Fund's internal control. We did not test all internal controls relevant to operating objectives as broadly defined by the *Federal Managers' Financial Integrity Act of 1982*.

A deficiency in internal control exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, misstatements on a timely basis. A material weakness is a deficiency, or a combination of deficiencies, in internal control, such that there is a reasonable possibility that a material misstatement of the United States Department of Energy Nuclear Waste Fund's financial statements will not be prevented, or detected and corrected, on a timely basis. A significant deficiency is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.

Our consideration of internal control was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control that might be material weaknesses or significant deficiencies. Given these limitations, during our audit we did not identify any deficiencies in internal



control that we consider to be material weaknesses. However, material weaknesses may exist that have not been identified.

Compliance and Other Matters

As part of obtaining reasonable assurance about whether the United States Department of Energy Nuclear Waste Fund's financial statements are free from material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements, noncompliance with which could have a direct and material effect on the determination of financial statement amounts. However, providing an opinion on compliance with those provisions was not an objective of our audit, and accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards* or OMB Bulletin No. 19-01.

Purpose of the Other Reporting Required by Government Auditing Standards

The purpose of the communication described in the Other Reporting Required by *Government Auditing Standards* section is solely to describe the scope of our testing of internal control and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the United States Department of Energy Nuclear Waste Fund's internal control or compliance. Accordingly, this communication is not suitable for any other purpose.

KPMG LLP

Washington, DC
November 13, 2018

UNITED STATES DEPARTMENT OF ENERGY

NUCLEAR WASTE FUND

Balance Sheets

As of September 30, 2018 and 2017

(Dollars in thousands)

	FY 2018	FY 2017
ASSETS		
Intragovernmental:		
Fund Balance with Treasury ^(Note 3)	\$ 10,718	\$ 15,697
Investments and Related Interest, Net ^(Note 4)	39,195,614	37,670,986
Total Intragovernmental Assets	39,206,332	37,686,683
Accounts Receivable:		
Utilities ^(Note 5)	2,660,601	2,619,525
General Property, Plant, and Equipment, Net ^(Note 6)	120	122
Total Assets	\$ 41,867,053	\$ 40,306,330
LIABILITIES		
Intragovernmental: ^(Note 8)		
Accounts Payable	\$ 127	\$ 16
Deferred Revenue ^(Notes 7 and 10)	636,627	634,424
Other Liabilities	197	197
Total Intragovernmental Liabilities	636,951	634,637
Accounts Payable and Other Liabilities	453	1,863
Deferred Revenue ^(Note 10)	41,222,235	39,658,012
Commitments and Contingencies ^(Note 9)	28,111,003	27,247,874
Total Liabilities ^(Note 8)	69,970,642	67,542,386
NET POSITION		
Unexpended Appropriations - Other Funds	7,414	11,818
Cumulative Results of Operations - Other Funds	(28,111,003)	(27,247,874)
Total Net Position	(28,103,589)	(27,236,056)
Total Liabilities and Net Position	\$ 41,867,053	\$ 40,306,330

The accompanying notes are an integral part of these statements.

UNITED STATES DEPARTMENT OF ENERGY
 NUCLEAR WASTE FUND
 Statements of Net Cost
 For the Years Ended September 30, 2018 and 2017
 (Dollars in thousands)

	FY 2018	FY 2017
First Repository Costs	\$ 4,857	\$ 3,011
All Other Program Costs:		
Program Support	196	69
Transfers of Appropriations ^(Note 7)	3,600	3,600
Waste Acceptance, Storage and Transportation	1,583	1,949
Total All Other Program Costs	5,379	5,618
Total First Repository and Other Program Costs	10,236	8,629
Less Earned Revenues ^(Note 10)	(10,236)	(8,629)
Net First Repository Costs & Other Program Costs	-	-
Estimated costs for waste acceptance obligations	1,421,685	3,290,256
Net Cost of Operations	\$ 1,421,685	\$ 3,290,256

The accompanying notes are an integral part of these statements.

UNITED STATES DEPARTMENT OF ENERGY
 NUCLEAR WASTE FUND
 Statements of Changes in Net Position
 For the Years Ended September 30, 2018 and 2017
 (Dollars in thousands)

	FY 2018	FY 2017
CUMULATIVE RESULTS OF OPERATIONS		
Beginning Balance	\$ (27,247,874)	\$ (24,689,260)
Other Financing Sources (Non-Exchange):		
Imputed Financing from Costs Absorbed by Others	558,556	731,642
Total Other Financing Sources	558,556	731,642
Net Cost of Operations	(1,421,685)	(3,290,256)
Net Change	(863,129)	(2,558,614)
Ending Balance - Cumulative Results of Operations	\$ (28,111,003)	\$ (27,247,874)
UNEXPENDED APPROPRIATIONS		
Beginning Balance	\$ 11,818	\$ 14,151
Budgetary Financing Sources Related to Appropriations:		
Appropriations Used	(4,404)	(2,333)
Total Budgetary Financing Sources Related to Appropriations	(4,404)	(2,333)
Ending Balance - Unexpended Appropriations	7,414	11,818
Total Net Position	\$ (28,103,589)	\$ (27,236,056)

The accompanying notes are an integral part of these statements.

UNITED STATES DEPARTMENT OF ENERGY
 NUCLEAR WASTE FUND
 Statements of Budgetary Resources
 For the Years Ended September 30, 2018 and 2017
 (Dollars in thousands)

	FY 2018	FY 2017
BUDGETARY RESOURCES		
Unobligated Balance from Prior Year Budget Authority, Net	\$ 11,111	\$ 19,899
Appropriations ^(Note 2)	<u>-</u>	<u>-</u>
Total Budgetary Resources	<u>\$ 11,111</u>	<u>\$ 19,899</u>
 Memorandum (non-add) Entries:		
Net adjustments to unobligated balance brought forward, Oct 1	\$ 1,319	\$ 1,395
 STATUS OF BUDGETARY RESOURCES		
New Obligations and Upward Adjustments (Total) ^(Note 12)	\$ 2,950	\$ 10,107
Unobligated Balance, End of Year:		
Apportioned, Unexpired Accounts	1,643	1,206
Exempt from Apportionment, Unexpired Accounts	<u>6,518</u>	<u>8,586</u>
Unobligated Balance, End of Year	<u>8,161</u>	<u>9,792</u>
Total Budgetary Resources	<u>\$ 11,111</u>	<u>\$ 19,899</u>
 OUTLAYS, NET		
Outlays, Net	\$ 7,933	\$ 3,935
Distributed Offsetting Receipts	<u>(1,538,926)</u>	<u>(1,664,724)</u>
Nuclear Waste Fund Outlays, Net	<u>\$ (1,530,993)</u>	<u>\$ (1,660,789)</u>

The accompanying notes are an integral part of these statements.

UNITED STATES DEPARTMENT OF ENERGY NUCLEAR WASTE FUND

Notes to Financial Statements
September 30, 2018 and September 30, 2017

(Dollars in thousands unless otherwise noted)

(1) Legislative Background

The Nuclear Waste Policy Act of 1982 (NWSA) was signed into law on January 7, 1983. The NWSA establishes a framework for the financing, siting, licensing, operating and decommissioning of one or more mined geologic repositories for the Nation's spent nuclear fuel (SNF) and high-level radioactive waste (HLW) which is to be carried out by the Department of Energy (Department or DOE). In addition, the NWSA contains other provisions including:

- Assigning responsibility for the payment of disposal costs to the owners and generators of SNF and HLW and creating a special Nuclear Waste Fund (NWF) within the Department of Treasury of the United States for the collection of fees to cover such costs;
- Providing for contracts between the Department and the owners and generators of SNF and HLW pursuant to which the Department is to take title to the SNF or HLW as expeditiously as possible, following commencement of repository operations and, in return for payment of fees established by the NWSA, to begin disposal of the SNF or HLW not later than January 31, 1998; and
- Requiring evaluation of the use of civilian disposal capacity for the disposal of HLW resulting from atomic energy defense activities (Defense HLW). In April 1985, the President notified the Department of his determination that a separate defense waste repository was not necessary and directed the Department to proceed with arrangements for disposal of such waste. Fees, equivalent to those paid by commercial owners, must be paid for this service by the Federal Government.

On December 22, 1987, the President signed into law the Budget Reconciliation Act, Subtitle A Title V, of which contained amendments to the NWSA. The legislation directed the Department to characterize only the Yucca Mountain site in Nevada as a candidate site for the first repository. The legislation also provided for the termination of site-specific activities at all candidate sites other than the Yucca Mountain site, within 90 days of enactment, and for phasing out, not later than six months after enactment, all research programs in existence that were designed to evaluate the suitability of crystalline rock as a potential repository host medium.

In fiscal year (FY) 2009, the President and the Department's Secretary announced that a repository at Yucca Mountain was not a workable option and that the repository program would be terminated. At that time, they also announced that a Blue Ribbon Commission would be established to evaluate disposal alternatives. Accordingly, on January 29, 2010, the Department's Secretary announced the formation of a Blue Ribbon Commission on America's Nuclear Future to provide recommendations for developing a safe, long-term solution to managing the Nation's SNF and HLW. The Blue Ribbon Commission submitted a final report in January 2012 with their recommendations on these issues for consideration by the Administration and Congress, as well as interested state, tribal and local governments, other stakeholders, and the public. On February 1, 2010, the President issued the FY 2011 Budget Request with a zero budget request for the Nuclear Waste Fund Appropriation and the Defense Nuclear Waste Disposal Appropriation (formerly known as and reported under the Office of Civilian Radioactive Waste Management (OCRWM) prior to FY 2011). Consequently, the Department closed OCRWM on September 30, 2010, and, on October 1, 2010, the Department reassigned prior responsibilities for the operations of OCRWM and its assets and liabilities within the Department, herein referred to as the NWF. In March 2017, the Administration submitted *America First – A Budget Blueprint to Make America Great Again* to Congress that included the restart of licensing activities for the Yucca Mountain nuclear waste repository, which was subsequently reflected in the Administration's FY 2018 Budget Request in May 2017. In February 2018, the Administration's FY 2019 Budget Request again included the restart of licensing activities for the Yucca Mountain nuclear waste repository. However, no funding was provided related to the Yucca Mountain repository in the Consolidated Appropriations Act for FY 2018 passed in March 2018 or the Energy and Water, Legislative Branch, and Military Construction and Veterans Affairs Appropriations Act, 2019, passed in September 2018.

UNITED STATES DEPARTMENT OF ENERGY NUCLEAR WASTE FUND

Notes to Financial Statements
September 30, 2018 and September 30, 2017

(Dollars in thousands unless otherwise noted)

(2) Significant Accounting Policies

Basis of Presentation – These financial statements have been prepared to report the financial position and results of operations of the NWF and include all activity related to the Nuclear Waste Fund Appropriation and the Defense Nuclear Waste Disposal Appropriation, used for the disposal of SNF and HLW (formerly reported under the Office of Civilian Radioactive Waste Management). The financial statements have been prepared from the books and records of the Department for the NWF in accordance with accounting principles generally accepted in the United States of America as applicable to Federal entities and presentation guidelines in Office of Management and Budget (OMB) Circular A-136, Financial Reporting Requirements.

Basis of Accounting – The NWF's financial statements are prepared using the accrual method of accounting. Under the accrual method, revenues are recognized when earned, and expenses are recognized when a liability is incurred without regard to receipt or payment of cash. The NWF also uses budgetary accounting to facilitate compliance with legal constraints and to monitor its budget authority. On the Balance Sheets, assets and liabilities have been classified according to the type of entity with which the transactions were made. Intragovernmental assets and liabilities are those from or to other federal entities.

Revenue Recognition – Fees, related accrued interest, and investment income are recognized as exchange (earned) revenue to the extent of expenses incurred, subject to Congressional authorization as discussed below. Fees billed, related accrued interest, and investment income in excess of current expenses are deferred.

The NWPA requires the civilian owners and generators of nuclear waste to pay their share of the full cost of the NWF and, to that end, establishes a fee for electricity generated and sold by civilian nuclear power reactors which the Department must collect and annually assess to determine its adequacy. A one-time fee (see Note 5) was recorded by the NWF as of April 7, 1983, related to the disposal of SNF generated prior to that date. Fees recognized by the NWF are based upon kilowatt (kWh) of electricity generated and sold by civilian nuclear reactors on and after April 7, 1983. The Department set the per kWh portion of the fee to zero in 2014.

Fees associated with the disposal of the Department's SNF and HLW are also recognized as the related costs are incurred and allocated. The methodology for allocating costs between SNF and HLW owned and managed by the Government (defense) and commercial (civilian) was developed by public rulemaking and published in the Federal Register in August 1987. This rule provides guidance for calculating the defense and civilian shares of total costs. The annual *Analysis of the Total System Life Cycle Cost of the Civilian Radioactive Waste Management Program* (TSLCC) calculated the defense and civilian shares of program costs using this methodology. The most recent TSLCC was published in 2008.

Appropriations – Expenditure authority for the NWF has historically been provided by two separate appropriations. For fiscal years 2018 and 2017, Congress appropriated \$0 from the Defense Nuclear Waste Disposal Appropriation and the Nuclear Waste Disposal Appropriation to be used for nuclear waste disposal activities.

Fee payments and investment income are deposited into the NWF account and are made available to the Department through the annual expenditure authority provided by Congress. Investments are made in United States (U.S.) Treasury securities from funds in excess of current needs. If, at any time, monies available in the NWF are insufficient to discharge responsibilities under the NWPA, borrowings may be made from the U.S. Treasury. The NWPA limits the NWF from incurring expenditures, entering into contracts, and obligating amounts to be expended except as provided in advance by appropriation acts. Appropriated dedicated collections such as these are excluded from appropriations received on the Statements of Changes in Net Position.

**UNITED STATES DEPARTMENT OF ENERGY
NUCLEAR WASTE FUND**

Notes to Financial Statements
September 30, 2018 and September 30, 2017

(Dollars in thousands unless otherwise noted)

(2) Significant Accounting Policies (continued)

Imputed Financing Sources – In certain instances, costs of the NWF are paid out of funds appropriated to other federal agencies. For example, payments under the terms of settlements and judgments are paid by the U.S. Treasury Judgment Fund (Judgment Fund). When costs directly attributable to NWF's operations are paid by other agencies, NWF recognizes these amounts in the *Statements of Net Cost*. In addition, these amounts are recognized as imputed financing sources in the *Statements of Changes in Net Position*.

Funds from Dedicated Collections – NWF follows Statement of Federal Financial Accounting Standards (SFFAS) No. 43, *Funds from Dedicated Collections*, which requires separate identification of funds from dedicated collections on the Balance Sheets, Statements of Changes in Net Position, and other selected footnotes.

Funds from dedicated collections are financed by specifically identified revenues, often supplemented by other financing sources, which remain available over time. These specifically identified revenues and other financing sources are required by statute to be used for designated activities, benefits or purposes, and must be accounted for separately from the Government's general revenues (see Note 11).

Investments – Investments are in U.S. Treasury securities and are stated at cost net of amortized premiums and discounts as it is the Department's intent to hold the investments to maturity. Premiums and discounts are amortized using the effective interest yield method. Investment interest is accrued on the outstanding investment balance using the applicable interest rate for the investments (see Note 4).

General Property, Plant, and Equipment – Purchases of general property, plant, and equipment (PP&E) exceeding \$50 are capitalized if they have a useful life greater than two years. PP&E is depreciated on a straight-line basis over the estimated useful lives of the assets. Useful lives range from 5 to 30 years. Maintenance costs are borne by NWF for equipment either on loan from or shared with other programs (see Note 6).

Accounts Receivable – Payment of accounts receivable will not be complete until NWF starts accepting waste. Interest is accrued quarterly on the outstanding amount receivable including accrued interest. The interest rate used is the 13-week U.S. Treasury bill rate. An allowance for doubtful accounts related to one-time spent fuel fees has not been recorded as of September 30, 2018 and 2017 (see Note 5).

Liabilities – Liabilities represent the amount of monies or other resources that are likely to be paid by NWF as the result of a transaction or event that has already occurred. However, no liability can be paid by NWF absent an appropriation. Liabilities for which an appropriation has not been enacted are therefore classified in these notes as liabilities not covered by budgetary resources and there is no certainty that the appropriation will be enacted. Also, liabilities other than contracts can be abrogated by the Government acting in its sovereign capacity.

Tax Status – NWF, as a part of the Department of Energy, which is a Federal agency, is not subject to federal, state, or local income taxes.

First Repository Costs – For the fiscal years ended September 30, 2018 and 2017, first repository costs consist primarily of Yucca Mountain shutdown costs. Historically, the general goals have been that of licensing and construction of a permanent repository for nuclear waste at Yucca Mountain and to be ready for acceptance of waste at the facility.

**UNITED STATES DEPARTMENT OF ENERGY
NUCLEAR WASTE FUND**

Notes to Financial Statements
September 30, 2018 and September 30, 2017

(Dollars in thousands unless otherwise noted)

(2) Significant Accounting Policies (continued)

Use of Estimates – The preparation of financial statements requires management to make estimates and assumptions that affect the amounts reported in the financial statements and accompanying notes. Significant items subject to such estimates and assumptions include primarily commitments and contingencies.

(3) Fund Balance with Treasury

Summaries of the status of fund balances with the U.S. Treasury for appropriated and special funds as of September 30, 2018 and 2017 are as follows:

As of September 30, 2018	Appropriated Funds	Special Funds	Total
Unobligated budgetary resources			
Available	\$ 1,643	\$ 6,518	\$ 8,161
Obligated balance not yet disbursed			
Undelivered orders	5,772	5,449	11,221
Accounts payable and other liabilities	303	473	776
Budgetary resources invested in Treasury securities	-	(9,440)	(9,440)
Total FY 2018 Fund Balance with Treasury	\$ 7,718	\$ 3,000	\$ 10,718

As of September 30, 2017	Appropriated Funds	Special Funds	Total
Unobligated budgetary resources			
Available	\$ 1,206	\$ 8,586	\$ 9,792
Obligated balance not yet disbursed			
Undelivered orders	10,612	5,612	16,224
Accounts payable and other liabilities	883	1,194	2,077
Budgetary resources invested in Treasury securities	-	(12,396)	(12,396)
Total FY 2017 Fund Balance with Treasury	\$ 12,701	\$ 2,996	\$ 15,697

**UNITED STATES DEPARTMENT OF ENERGY
NUCLEAR WASTE FUND**

Notes to Financial Statements
September 30, 2018 and September 30, 2017

(Dollars in thousands unless otherwise noted)

(4) Investments and Related Interest, Net

For the fiscal years ended September 30, 2018 and 2017, the NWF received proceeds from the maturity of securities of \$2,870,834 and \$1,320,072, respectively.

Investments in U.S. Treasury securities held as of September 30 of each year consisted of the following:

	FY 2018	FY 2017
Intragovernmental Non-Marketable Market Based:		
Face Value	\$ 53,449,211	\$ 53,012,627
Unamortized discount, net	(14,375,049)	(15,443,938)
Interest receivable	121,452	102,297
Investments and related interest, net	39,195,614	37,670,986
Unrealized market gains, net	4,247,151	6,819,627
Investments at fair value	<u>\$ 43,442,765</u>	<u>\$ 44,490,613</u>

Pursuant to statutory authorization, fees collected from owners and generators of SNF that are in excess of those needed to pay current program costs are invested in Treasury securities. The federal government does not set aside assets to pay for expenditures associated with the funds for which the Department holds Treasury securities. These Treasury securities are an asset to the Department and a liability to Treasury. Because the Department and Treasury are both parts of the federal government, these assets and liabilities offset each other from the standpoint of the federal government as a whole. For this reason, they do not represent an asset or a liability in the U.S. Government-wide financial statements. Treasury securities provide the Department with authority to draw upon the U.S. Treasury to make expenditures, subject to available appropriations and Office of Management and Budget (OMB) apportionments. When the Department requires redemption of these securities, the federal government finances those expenditures out of accumulated cash balances by raising taxes or other receipts, by borrowing from the public, repaying less debt, or by curtailing other expenditures. This is the same way the federal government finances all other expenditures.

(5) Receivables Due from Utilities

Owners and generators of civilian SNF have entered into contracts with the Department for disposal services and for payment of fees to the NWF.

The NWPA specifies two types of fees to be paid to the NWF for disposal services: (a) a one-time charge per kilogram of heavy metal in solidified SNF existing prior to April 7, 1983; and (b) a one mil per kWh fee on all net electricity generated and sold by civilian nuclear power reactors on and after April 7, 1983. The kWh fees are due when billed. The contracts between the Department and the owners and generators of the waste provide three options for payment of the one-time spent fuel fee, one of which must have been selected by June 30, 1985, or within two years of contract execution. The options were:

1. Payment of the amount due, plus interest earned from April 7, 1983, in 40 quarterly installments with the final payment due on or before the first scheduled delivery of SNF to the Department;
2. Payment of the amount due, plus interest from April 7, 1983, in a single payment any time prior to the first delivery of SNF to the Department; or

**UNITED STATES DEPARTMENT OF ENERGY
NUCLEAR WASTE FUND**

Notes to Financial Statements
September 30, 2018 and September 30, 2017

(Dollars in thousands unless otherwise noted)

(5) Receivables Due from Utilities (continued)

3. Payment of the amount due any time prior to June 30, 1985, or two years after contract execution, in the form of a single payment, with no interest due.

Under options (1) and (2), interest accrues from April 7, 1983 to the date of first payment at the 13-week U.S. Treasury bill rate compounded quarterly. Under option (1), beginning with the first payment, interest is calculated at the 10-year Treasury note rate in effect at the time.

In fiscal year 2018, no payments of one-time accrued spent fuel fees or accrued interest were received from owners and generators of civilian SNF. In fiscal year 2017, payments of \$50,394 of one-time accrued spent fuel fees and \$136,018 of accrued interest were received.

Per the NWPA, the Secretary of Energy shall annually review the adequacy of the fees established. In the event the Secretary of Energy determines either insufficient or excess revenue is being collected, the Secretary of Energy shall propose an adjustment to the fee to ensure full cost recovery. Because the U.S. Court of Appeals for the District of Columbia Circuit found the Department did not have a legitimate basis to evaluate or assess the ongoing kWh fee, the court directed the Department to propose to Congress a reduction of the ongoing kWh fee to zero. Such proposal became effective on May 16, 2014. In August 2014, the Department collected the remaining ongoing fee receivable balances. The circumstances have remained unchanged for FY 2018 and FY 2017 and no ongoing kWh fees were assessed or collected.

Accounts receivable from utilities at September 30 of each year were as follows:

	FY 2018	FY 2017
Accounts receivable:		
One-time spent nuclear fuel fees:		
Accounts receivable - one-time spent nuclear fuel fees		
Option (1)	\$ 144,273	\$ 144,273
Option (2)	560,170	560,170
Total accounts receivable one-time spent nuclear fuel fees	<u>704,443</u>	<u>704,443</u>
Accrued interest on one-time spent nuclear fuel fees:		
Option (1)	399,186	390,743
Option (2)	1,556,972	1,524,339
Total accrued interest on one-time spent nuclear fuel fees	<u>1,956,158</u>	<u>1,915,082</u>
Total accounts receivable	<u>\$ 2,660,601</u>	<u>\$ 2,619,525</u>

**UNITED STATES DEPARTMENT OF ENERGY
NUCLEAR WASTE FUND**

Notes to Financial Statements
September 30, 2018 and September 30, 2017

(Dollars in thousands unless otherwise noted)

(6) General Property, Plant, and Equipment, Net

General property, plant, and equipment and related accumulated depreciation consisted of the following as of September 30, 2018 and 2017:

	FY 2018	FY 2017
General property, plant, and equipment	\$ 7,134	\$ 7,233
Less accumulated depreciation	(7,014)	(7,111)
General property, plant, and equipment, net	<u>\$ 120</u>	<u>\$ 122</u>

(7) Transactions with the Department and Other Federal Government Agencies

The NWPA authorized the Secretary of Energy to carry out the provisions of the NWPA and created the Nuclear Waste Fund in the U.S. Treasury. The investment and borrowing powers of the NWF are limited to transactions with the U.S. Treasury. In discharging its obligations under the NWPA, the Department contracts for services with numerous contractors including other Federal Government agencies. Further, significant administrative services are provided by the Department.

As of September 30, 2018 and 2017, NWF owed other Federal Government agencies \$127 and \$16, respectively. For the fiscal years ended September 30, 2018 and 2017, NWF incurred costs of \$390 and \$130, respectively, for services and goods provided by other Federal Government agencies. In addition to these incurred costs, NWF made Congressional authorized transfers from the NWF to the Nuclear Waste Technical Review Board in the amount of \$3,600 for fiscal years 2018 and 2017.

NWF has entered into Memoranda of Agreement (MOA) with the Department's Office of Environmental Management and the Department's Office of Naval Nuclear Propulsion. The MOA established the terms and conditions for acceptance of Department-owned SNF and HLW (Defense Waste) for disposal. The estimated liabilities are included in the 2008 TSLCC that is used to calculate the estimate of the Department's share of total current and future program costs for Defense Waste. The Department has paid amounts in excess of its estimated share of costs and as a result has no liability to NWF as of September 30, 2018 and 2017.

As of September 30, 2018, the total cumulative share of costs for the Department's Defense Waste is estimated to be \$2,452,242 based on the methodology published in the Federal Register in August 1987 and interest owed is estimated to amount to \$672,737. As of September 30, 2018 and 2017, \$636,627 and \$634,424, respectively, was included in intragovernmental deferred revenue representing the Department's Defense HLW fees in the NWF in excess of the Department's cost share to-date.

**UNITED STATES DEPARTMENT OF ENERGY
NUCLEAR WASTE FUND**

Notes to Financial Statements
September 30, 2018 and September 30, 2017

(Dollars in thousands unless otherwise noted)

(8) Liabilities Not Covered by Budgetary Resources

A summary of liabilities covered and not covered by budgetary resources as of September 30, 2018 and 2017 is as follows:

	FY 2018	FY 2017
Liabilities not covered by budgetary resources:		
Intragovernmental		
Deferred revenue (Note 10)	\$ 636,627	\$ 634,424
Non-Intragovernmental		
Deferred revenue (Note 10)	41,222,235	39,658,012
Commitments and contingencies (Note 9)	28,111,003	27,247,874
Total liabilities not covered by budgetary resources	69,969,865	67,540,310
Liabilities covered by budgetary resources:		
Intragovernmental		
Accounts payable	127	16
Other liabilities	197	197
Non-Intragovernmental		
Accounts payable and other liabilities	453	1,863
Total liabilities covered by budgetary resources	777	2,076
Total Liabilities	\$ 69,970,642	\$ 67,542,386

(9) Commitments and Contingencies

Spent Nuclear Fuel Litigation

In accordance with the NWPA, the Department entered into more than 68 Standard Contracts with utilities in which, in return for payment of fees into the NWF, the Department agreed to begin disposal of SNF by January 31, 1998. Because the Department has no facility available to receive SNF under the NWPA, it has been unable to begin disposal of the utilities' SNF as required by the contracts. Significant litigation claiming damages for partial breach of contract has ensued as a result of this delay.

To date, 40 suits have been settled involving utilities that collectively produce about 84 percent of the nuclear-generated electricity in the United States. Under the terms of the settlements, the Judgment Fund, 31 U.S.C. 1304, paid \$5.3 billion as of September 30, 2018 to the settling utilities for delay damages they have incurred through September 30, 2018. In addition, 57 cases have been resolved by 49 final unappealable judgments and eight voluntary withdrawals with no damages. Eight of the unappealable judgments resulted in an award of no damages by the trial court and the 41 remaining cases resulted in a total of \$2.1 billion in damages that have been paid by the Judgment Fund as of September 30, 2018.

The Department's SNF litigation liability is updated to include the effects of final judgments and settlements as well as payments to date from the Judgment Fund. Additional payments under these settled and adjudicated cases may be made if the utilities incur additional costs resulting from the Department's delay in acceptance of SNF. The Department believes its assumptions and methodology provide a reasonable basis for the contingent liability estimate.

**UNITED STATES DEPARTMENT OF ENERGY
NUCLEAR WASTE FUND**

Notes to Financial Statements
September 30, 2018 and September 30, 2017

(Dollars in thousands unless otherwise noted)

(9) Commitments and Contingencies (continued)

An additional 15 cases remain pending the Court of Federal Claims. Liability is probable in these cases, and in many of these cases orders have already been entered establishing the Government's liability and the only outstanding issue to be litigated is the amount of damages to be awarded. Some years ago, the industry was reported to estimate that damages for all utilities with which the Department has contracts ultimately would be at least \$50 billion. The Department believes that the industry's estimate was highly inflated and that the disposition of the 89 cases that have either been settled or subject to a judgment in the trial court suggests that the Government's ultimate liability is likely to be significantly less than that estimate. Accordingly, based on these settlement estimates, the total liability estimate as of September 30, 2018 was \$35.5 billion. After deducting the cumulative amount paid of \$7.4 billion as of September 30, 2018 under these settlements and as a result of final judgments, the remaining liability is estimated to be approximately \$28.1 billion. Under current law, any damages or settlements in this litigation will be paid out of the Judgment Fund. The Department's contingent liability estimate for SNF litigation is reported net of amounts paid to date from the Judgment Fund.

The Department previously reported several developments that made it difficult to reasonably predict the amount of the Government's likely liability. In March 2017, the current Administration submitted *America First – A Budget Blueprint to Make America Great Again* to Congress that included the restart of licensing activities for the Yucca Mountain nuclear waste repository, which was subsequently reflected in the Administration's FY 2018 Budget Request in May 2017. In February 2018, the Administration's FY 2019 Budget Request again included the restart of licensing activities for the Yucca Mountain nuclear waste repository. However, no funding was provided related to the Yucca Mountain repository in the Consolidated Appropriations Act for FY 2018 passed in March 2018 or the Energy and Water, Legislative Branch, and Military Construction and Veterans Affairs Appropriations Act, 2019, passed in September 2018. The liability estimate assumes a FY 2020 restart of licensing activities, and uses timeframes contained in the NWPA and the Yucca Mountain License Application.

**UNITED STATES DEPARTMENT OF ENERGY
NUCLEAR WASTE FUND**

Notes to Financial Statements
September 30, 2018 and September 30, 2017

(Dollars in thousands unless otherwise noted)

(10) Deferred Revenue

As described in Note 2, all fees, both kWh fees and Defense high-level radioactive waste fees, as well as the related interest and investment income, are recognized as revenue to the extent of expenses incurred. Amounts in excess of current expenses are deferred. Deferred revenue as of September 30, 2018 and 2017 was as follows:

	FY 2018	FY 2017
Intragovernmental		
Fees billed:		
Defense high-level waste fees	\$ 4,404	\$ 2,333
Interest:		
Income on investments	1,531,179	1,464,835
Non-intragovernmental		
Interest:		
One-time spent nuclear fuel fees	41,076	17,344
Other billings	3	26
Total billings and interest	1,576,662	1,484,538
Less earned revenue	(10,236)	(8,629)
Change in deferred revenue	1,566,426	1,475,909
Deferred revenue - beginning balance	40,292,436	38,816,527
Deferred revenue - ending balance	<u>\$ 41,858,862</u>	<u>\$ 40,292,436</u>

UNITED STATES DEPARTMENT OF ENERGY NUCLEAR WASTE FUND

Notes to Financial Statements
September 30, 2018 and September 30, 2017

(Dollars in thousands unless otherwise noted)

(11) Dedicated Collections

	Dedicated Collections	All Other Funds	FY 2018	Dedicated Collections	All Other Funds	FY 2017
Balance Sheet						
Assets						
Fund Balance with Treasury	\$ 3,000	\$ 7,718	\$ 10,718	\$ 2,996	\$ 12,701	\$ 15,697
Investments, Net	39,195,614	-	39,195,614	37,670,986	-	37,670,986
Accounts Receivable	2,660,601	-	2,660,601	2,619,525	-	2,619,525
General Property, Plant, and Equipment, Net	98	22	120	99	23	122
Total Assets	\$ 41,859,313	\$ 7,740	\$ 41,867,053	\$ 40,293,606	\$ 12,724	\$ 40,306,330
Liabilities and Net Position						
Accounts Payable and Other Liabilities	\$ 473	\$ 304	\$ 777	\$ 1,193	\$ 883	\$ 2,076
Deferred Revenue	41,858,840	22	41,858,862	40,292,413	23	40,292,436
Commitments and Contingencies	-	28,111,003	28,111,003	-	27,247,874	27,247,874
Unexpended Appropriations	-	7,414	7,414	-	11,818	11,818
Cumulative Results of Operations	-	(28,111,003)	(28,111,003)	-	(27,247,874)	(27,247,874)
Total Liabilities and Net Position	\$ 41,859,313	\$ 7,740	\$ 41,867,053	\$ 40,293,606	\$ 12,724	\$ 40,306,330
Statement of Net Costs						
Total First Repository and Other Program Costs	\$ 5,832	\$ 4,404	\$ 10,236	\$ 6,287	\$ 2,342	\$ 8,629
Less Earned Revenues	(5,832)	(4,404)	(10,236)	(6,287)	(2,342)	(8,629)
Net First Repository Costs	-	-	-	-	-	-
Estimated liability for waste acceptance obligations	-	1,421,685	1,421,685	-	3,290,256	3,290,256
Net cost of operations	\$ -	\$ 1,421,685	\$ 1,421,685	\$ -	\$ 3,290,256	\$ 3,290,256
Statement of Changes in Net Position						
Beginning Balance - Cumulative Results of Operations	\$ -	\$ (27,247,874)	\$ (27,247,874)	\$ -	\$ (24,689,260)	\$ (24,689,260)
Imputed Financing from Costs Absorbed by Others	-	558,556	558,556	-	731,642	731,642
Net Cost of Operations	-	(1,421,685)	(1,421,685)	-	(3,290,256)	(3,290,256)
Ending Balance - Cumulative Results of Operations	\$ -	\$ (28,111,003)	\$ (28,111,003)	\$ -	\$ (27,247,874)	\$ (27,247,874)
Beginning Balance - Unexpended Appropriations						
Appropriations Used	-	(4,404)	(4,404)	-	(2,333)	(2,333)
Ending Balance - Unexpended Appropriations	-	7,414	7,414	-	11,818	11,818
Total Net Position	\$ -	\$ (28,103,589)	\$ (28,103,589)	\$ -	\$ (27,236,056)	\$ (27,236,056)

The NWPA requires the owners and generators of nuclear waste to pay their share of disposal costs into the NWF and, to that end, established a fee for electricity generated and sold by civilian nuclear power reactors which the Department must collect and annually assess to determine its adequacy. A special fund within Treasury was created to account for the collection of those fees. Fees collected in excess of expenses incurred are invested in Treasury securities and any interest earned is available to pay expenditures related to radioactive waste disposal activities covered by the NWF as appropriated by Congress and allotted by OMB.

(12) Explanation of Differences between the Statement of Budgetary Resources and the Budget of the United States Government

The President's Budget containing actual FY 2018 balances is expected to be published and available on the OMB website in February 2019. The NWF FY 2017 *Statements of Budgetary Resources* reconciled to the Budget of the United States by combining both of the budgets for Defense Nuclear Waste Disposal (89-X-0244) and Nuclear Waste Disposal (89-X-5227). Budgetary resources and obligations incurred are reconciled to the Departmental balances as published in the Appendix to the Budget; distributed offsetting receipts and net outlays are reconciled to the Departmental Balances in the Federal Program by Agency and Account section of the Analytical Perspectives Volume of the President's Budget.

**UNITED STATES DEPARTMENT OF ENERGY
NUCLEAR WASTE FUND**

Notes to Financial Statements
September 30, 2018 and September 30, 2017

(Dollars in thousands unless otherwise noted)

(13) Reconciliation of Net Cost of Operations to Budget

The objective of this information is to provide an explanation of the differences between budgetary and financial (proprietary) accounting. This is accomplished by means of a reconciliation of budgetary obligations and non-budgetary resources available to the reporting entity with its net cost of operations.

	FY 2018	FY 2017
RESOURCES USED TO FINANCE ACTIVITIES:		
Budgetary Resources Obligated:		
Obligations Incurred	\$ 2,950	\$ 10,107
Less: Spending Authority from Offsetting Collections and Recoveries	(1,319)	(1,395)
Obligations, Net of Offsetting Collections and Recoveries	1,631	8,712
Offsetting Receipts:		
Fees for Disposal of Spent Nuclear Fuel	-	(50,394)
Earnings on Investments	(1,538,922)	(1,614,304)
Total Offsetting Receipts	(1,538,922)	(1,664,698)
Net Obligations	(1,537,291)	(1,655,986)
Other Resources:		
Imputed Financing from Costs Absorbed by Others	558,556	731,642
Other:		
Offsetting Receipts, Deferred	1,828,188	2,431,572
Adjustment for Department of Energy Appropriation	(4,404)	(2,333)
Total Other	1,823,784	2,429,239
Net Other Resources Used to Finance Activities	2,382,340	3,160,881
Total Resources Used to Finance Activities	\$ 845,049	\$ 1,504,895
RESOURCES USED TO FINANCE ITEMS NOT PART OF THE NET COST OF OPERATIONS:		
Change in Resources Obligated for Goods/Services/Benefits Ordered But Not Yet Provided	\$ 5,003	\$ (3,693)
Total Resources Used to Finance Items Not Part of the Net Cost of Operations	5,003	(3,693)
Total Resources Used to Finance the Net Cost of Operations	\$ 850,052	\$ 1,501,202
NET COST ITEMS THAT DO NOT REQUIRE OR GENERATE RESOURCES IN CURRENT PERIOD:		
Increases in Unfunded Liability Estimates	\$ 863,129	\$ 2,558,615
Components Not Requiring or Generating Resources:		
Depreciation and Amortization of Investment Premiums and Discounts	(291,492)	(769,535)
Revaluation of Assets and Liabilities	(4)	(26)
Total Components Not Requiring or Generating Resources	(291,496)	(769,561)
Total Net Cost Items That Do Not Require or Generate Resources in Current Period	571,633	1,789,054
NET COST OF OPERATIONS	\$ 1,421,685	\$ 3,290,256

**UNITED STATES DEPARTMENT OF ENERGY
NUCLEAR WASTE FUND**

Other Information - Schedule I
Schedule of Cumulative Net First and Second Repository Costs for the
Thirty Six Years Ended September 30, 2018 – **(Unaudited)**

(Dollars in thousands unless otherwise noted)

First Repository Costs	<u>\$ 7,520,595</u>
All Other Program Costs:	
Program Support	2,180,382
Transfers of Appropriations	677,897
Waste Acceptance, Storage and Transportation	777,217
Imputed and Other Costs	<u>152,506</u>
Total All Other Program Costs	<u>3,788,002</u>
Second Repository Costs	<u>108,896</u>
Total First and Second Repository Costs and Other Program Costs	11,417,493
Less Earned Revenue	<u>(11,398,957)</u>
Cumulative Net First and Second Repository Costs	<u><u>\$ 18,536</u></u>

**UNITED STATES DEPARTMENT OF ENERGY
NUCLEAR WASTE FUND**

Other Information - Schedule II
Schedule of Cumulative Billings and Interest and Deferred Revenue as of and for the
Thirty Six Years Ended September 30, 2018 – **(Unaudited)**

(Dollars in thousands unless otherwise noted)

Intragovernmental:

Fees billed:	
kWh fees	\$ 996,143
One-time spent nuclear fuel fees	174,598
Defense high-level waste fees	3,761,663

Interest:	
Income on investments	24,674,331

Non-intragovernmental:

Fees billed:	
kWh fees:	18,308,083
One-time spent nuclear fuel fees	2,174,802

Interest:	
One-time spent nuclear fuel fees	2,460,614

Other billings	707,585
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Total billings and interest	53,257,819
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Less earned revenue	(11,398,957)
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Deferred revenue	<u>\$ 41,858,862</u>
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FEEDBACK

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Estimated Taxpayer Liability Exceeds \$35 Billion

Date of Audit Report	Amount Paid from Taxpayer Funded Judgment Fund	DOE's Estimate* of Liability Including Amount Paid
9/30/2018	\$ 7.4 Billion	\$ 35.5 Billion
9/30/2017	\$ 6.9 Billion	\$ 34.1 Billion
9/30/2016	\$ 6.1 Billion	\$ 30.8 Billion
9/30/2015	\$ 5.3 Billion	\$ 29.0 Billion
9/30/2014	\$ 4.5 Billion	\$ 27.1 Billion
9/30/2013	\$ 3.7 Billion	\$ 25.1 Billion
9/30/2012	\$ 2.6 Billion	\$ 22.3 Billion
9/30/2011	\$ 1.6 Billion	\$ 20.7 Billion

***Over time, these estimates have been based on varying assumptions as to when DOE would begin removing fuel from reactor sites, ranging from 2021 in the 9/30/2013 estimate to 2029 in the 9/30/2018 estimates. Any further slippage in the schedule will cause actual liabilities to be higher than estimated.**

Source: DOE Annual Nuclear Waste Fund Audit Reports

Testimony of Prof. David G. Victor, Chairman of the San Onofre Community Engagement Panel, before the House Oversight and Government Reform Subcommittee on Interior, Energy and Environment

Subcommittee Chairman Farenthold, Ranking Member Plaskett, and members of the subcommittee, including Representative Issa and Representative Gomez, thank you for the invitation to testify today about the national problem of storage and disposal of spent nuclear fuel. About 35 years ago Congress laid out a plan for long-term disposal of spent fuel from the country's nuclear reactors: the Nuclear Waste Policy Act (NWPA) of 1982. Since passage of that law, the government has consistently failed to meet key deadlines to remove spent fuel from the 99 operating commercial reactors at 59 sites around the country.¹ Worse, there are now 17 reactors at 14 sites in 11 states that are no longer operating—reactors, such as at San Onofre in Southern California where the spent fuel will remain stuck onsite long after the rest of the site has been shut down and removed.²

The Department of Energy has collected upwards of \$750 million annually from customers into a fund that amassed \$46 billion dollars by late 2016, the most recent audit.³ These funds were intended to defray the cost of removal and long-term disposal of spent fuel. Instead, the funds sit essentially idle. A series of lawsuits has halted those payments for many utilities, and some utilities are now being paid damages from taxpayer funds to recover the cost of continued storage of their spent fuel beyond the time when it was supposed to be accepted by the government.

For many years, this persistent failure to perform was, outside the nuclear utility industry, largely unnoticed. Nearly all reactors that were built kept operating. Unable to ship spent fuel to a permanent repository they left it on site—in pools and in dry cask storage.

The situation today is completely different. While most of the US nuclear fleet continues to operate, a growing number of reactors are in the midst of decommissioning. For these sites, the inability to remove spent fuel is particularly deplorable. Local communities have seen most of the jobs associated with these reactors, along with many other benefits, disappear. They are watching massive deconstruction projects remove reactors domes, buildings and other facilities. Yet they are still left with the spent nuclear fuel onsite, without a proper home and without any indications as to when it will eventually be removed. Some solutions to this problem are coming into focus, but they require changes to federal law as well as new investments where Congress and the Administration must work together.

¹ Kim Cawley, "Testimony: The Federal Government's Responsibilities and Liabilities Under the Nuclear Waste Policy Act," Before the Subcommittee on Environment and the Economy, Committee on Energy and Commerce, U.S. House of Representatives (3 December 2015).

² For detail see generally NUREG 1350. <https://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1350/>

³ Office of the Inspector General, DOE, "Audit Report," OAI-FS-17-04 (December 2016).

I testify today as Chairman of the San Onofre Nuclear Generating Station (SONGS) Community Engagement Panel (CEP). SONGS Units 2 and 3 are the largest commercial reactors slated for decommissioning in the country, and the political environment around the plant is more intense than almost anywhere in the country. I serve in that role as a volunteer. I am also a Professor at the School of Global Policy and Strategy (GPS) at UC San Diego where I am also an adjunct professor in Climate, Atmospheric Sciences and Physical Oceanography at the Scripps Institution of Oceanography.

Back in 2013 when the operator of the plant, Southern California Edison (SCE) decided to decommission the facility it also set up this panel to open a two-way conduit between SCE (and its co-owners, San Diego Gas and Electric, the City of Anaheim and the City of Riverside) and the communities that would be affected by the decommissioning process. Over the last three years the CEP has provided exactly that function. It has offered ways for SCE to learn about the concerns of the communities—for example; the impact of shrinking the SONGS emergency planning systems, now that the plant poses a lower hazard to the community, on the budgets of first responders, hospitals and other essential public services. It also offers a way for SCE to help inform the communities about how decommissioning will unfold; the economic and environmental impacts, and the various strategies being adopted to mitigate adverse impacts. We meet quarterly and have 17 members (with one vacancy)—all volunteers, drawn from the local communities and a blend of public officials, representatives from environmental NGOs, business, labor, and other stakeholders. We are not a formal decision-making body nor do we have official oversight functions—there are plenty of other bodies with those powers and responsibilities.⁴ I speak today as a private citizen who happens to be Chairman of the CEP, and I reflect on what we have learned over the three years of CEP operation.

Without a doubt, one topic has attracted the most attention at our CEP meetings and in the local communities: spent fuel. As in any community, there are many different views about a technology like nuclear power. With the closure of SONGS, I thought, that many of those diverging viewpoints would become moot and the communities could come together and focus on the best plan for decommissioning. Instead, many people have been shocked to learn that decommissioning of the plant does not mean removal of everything—the spent fuel remains because there is no place to send it. By not offering a practical place and method to ship spent fuel the Federal government has, through inaction, created a whole new array of acrimonious debates and controversy within local communities about how best to steward the spent fuel. I have observed and been in the middle of those debates for three years and the rest of my testimony outlines what I have seen and learned.

⁴ For more, including documents and video from every meeting, see www.songscommunity.com

The importance of moving the fuel out of local communities at decommissioned sites.

First, I can't emphasize enough the importance of offering practical ways for decommissioned sites to move spent fuel out of their communities to other, more appropriate locations. Offering a practical route to that outcome would be enormously valuable to our communities. That route could involve finishing Yucca Mountain and allowing consolidated interim storage (CIS), also known as interim storage facilities (ISF), and I'll talk about that next. But people are most looking for is a viable plan that addresses an urgent problem—a problem that is not so pressing in communities with operating reactors but is vitally important to those where reactors are undergoing decommissioning and will have stranded spent nuclear fuel left with reduced security at the decommissioning site.

We are particularly concerned that the current arrangements at the Department of Energy (DOE) are opaque about which spent fuels will ship first. This problem has not been important to solve over the last few decades because there was no place to ship. Today that might be different and I would urge Congress to help DOE develop a more coherent set of priorities. The current "standard contract" for fuel shipments, while ambiguous, suggests that the oldest fuel will ship first. That approach will create an inefficient and incoherent shipment pattern—with canisters moved across a patchwork of sites, and no site happy with the outcome. We should put the decommissioned sites first because those sites are no longer generating spent fuel, in most cases are removing reactors and support buildings, and gain much smaller economic benefit from hosting these facilities. By contrast, sites with operating reactors will always have spent fuel in their reactor cores, fuel pools and dry cask pads. For all these communities, it is important to have a viable long-term plan for spent fuel removal; for decommissioned sites the imperative is particularly compelling.

Political Realism

We in the San Onofre communities have learned that the politics of finding solutions to this problem are difficult. For years, Yucca Mountain has been a political lightning rod in ways that have made it exceptionally difficult—at times, impossible—to move forward with that site. The prospect of Consolidated Interim Storage might prove politically more tractable because, when combined with consent-based siting, it allows communities to nominate themselves to become storage sites. Following the guidance of the bipartisan Blue Ribbon Commission (BRC) report, we are encouraged that a process of informed consent has emerged and led to two communities volunteering themselves for CIS facilities. Today, my sense is that one of those sites is viable and that it enjoys healthy support from much of the local communities. The other site is owned by a company that paused its licensing process due to a planned acquisition which most likely will leave their CIS operations by the wayside. The viable site is in New Mexico where the governor of New Mexico has given approval for this CIS facility. The local entity that owns the land Eddy-Lea Energy Alliance (ELEA) wants the facility that is set to monitor at least 10,000 dry storage canisters in partnership with Holtec International. The ELEA is composed of cities of Carlsbad and Hobbs and the counties of Eddy and Lea. The community purchased the 1000 acres and has strong local support for the CIS facility. This is the model we must continue

to pursue of the government working with communities to find volunteers who want to help deal with the national crisis of stranded spent nuclear fuel around the country. Earlier this year we hosted officials from ELEA at a CEP meeting, and I was impressed by the level of planning and awareness.

In the densely populated communities around San Onofre, our interest is to advance any responsible program that moves the spent fuel out of our neighborhoods as quickly as possible. For us, that means Yucca and CIS simultaneously. Over the last three years, we have learned three important things about how to pursue this goal.

First, the nation does not benefit from monopolies. To some degree, the problems at Yucca Mountain are the result of the country having just one option. As that option has faltered the whole nation's industry, along with communities around nuclear power plants, have suffered. The original plan, way back when the NWPAs were signed into law, was to have two sites. Expedience in public sector spending and noxious politics whittled that roster down to one, and that outcome has been harmful. I am very concerned that the same will happen with CIS. Overall, the nation and the communities that are hosting spent nuclear fuel would benefit from having many options.

Second, and equally important, it is crucial that CIS be viewed as a complement to Yucca Mountain (and to other means of permanent spent fuel disposal—for example, deep borehole technology). I appreciate that over the last year that much of the newfound enthusiasm for acting on spent fuel is rooted in a desire to restart Yucca Mountain. But any realistic scenario for Yucca must deal with the reality that Yucca is still a long time coming. The site is not operational. Once operational, fuel will need repackaging so that casks with large numbers of fuel assemblies are put into smaller units with fewer assemblies and lower heat loads. All that will take time.

For the communities around San Onofre, those realistic delays in starting Yucca create the imperative for CIS. We want the spent fuel moved. For the nation as a whole, those delays offer an important logic for CIS: safety and saving money. It is much wiser to store spent fuel at a small number of large sites, far from population centers, than dozens of sites scattered around the country. Scientists at Oak Ridge National Laboratory have estimated the cost savings from a robust CIS program and found that we could avoid \$15-30b in expenditure in light of expected delays in reopening Yucca Mountain.⁵ Fiscal prudence demands that CIS be part of the overall strategy.

⁵ For an overview see J. Jarrell "Does Consolidated Interim Storage Make Sense in an Integrated Waste Management System?" Oak Ridge National Laboratory, NEI Used Fuel Management Conference, May 2017, Savannah, GA. Numbers here are undiscounted. For discounting and sensitivity analysis see: Cost Sensitivity Analysis for Consolidated Interim Storage of Spent Fuel: Evaluating the Effect of Economic Environment Parameters (Cumberland et al., FCRD-NFST-2016-000721, Rev. 1 ORNL/SR-2016/681) Available at <https://curie.ornl.gov/content/cost-sensitivity-analysis-consolidated-interim-storage-spent-fuel-evaluating-effect-economic>

Third, the political coalitions around nuclear power are in flux when it comes to spent fuel. There is a well-known debate about the role of nuclear power in the nation's future energy mix, and active industry efforts to improve performance to keep as many of the existing fleet operational. There are also well-known battle lines drawn for and against nuclear power. What has impressed me about spent fuel is that those battle lines have shifted. Many groups that have been skeptical or outright against operational nuclear plants—such as the Natural Resources Defense Council and the Union of Concerned Scientists—are aligned in favor of finding smart strategies for storing spent fuel, including CIS. It is really important that the larger, heated and probably irreconcilable differences about operational reactors not cloud the fact that many more communities are coming together to find solutions to storing spent fuel.

For Congress, these three lessons suggest that the current efforts—far advanced in the House and still developing in the Senate—to amend the NWPA are profoundly important. As those efforts proceed it is important that the Yucca mission, which has attracted more attention and political energy, not leave CIS aside.

Toward a Long-term Strategy: the Roles of Stewardship and Transportation

Compared with three years ago, there has been striking progress, especially in the House, toward new legislation that would address many of the obstacles to restarting Yucca and also authorizing a new program of consolidated storage. While that is admirable, we also need to grapple with the consequences of a long delay in arriving at this point. It is also crucial to grapple with the fact that most people outside Washington are skeptical that Washington can organize and motivate itself to make practical changes in law and back those with reasonable appropriations. What I have seen in the local communities around San Onofre is concern that Washington is so broken that reasonable bipartisan legislation, such as smart amendments to the NWPA, can't survive the legislative process.

This skepticism has three practical implications. First, while there are some actions that DOE or NRC can do to advance consolidated storage and promote smart stewardship of the nation's spent nuclear fuel, the most important actions require a change in federal law. Getting House (HR 3053) and Senate versions into conference is essential, lest Congress itself be seen as a central obstacle to progress in what has been, so far, largely an Executive Branch failure to deliver on promises made to the American people—especially the people living within the foot prints of nuclear reactors. I have testified at the NRC about their efforts to streamline the regulatory process, which are admirable.⁶ But the reality is that the NRC is already doing what it can; even without streamlining of the regulatory process for decommissioned sites those sites

⁶ 2014. David G. Victor. Decommissioning at San Onofre: The Community Engagement Experience. Testimony to the Nuclear Regulatory Committee. For more information see <https://www.nrc.gov/reading-rm/doc-collections/commission/slides/2014/20140715/victor-20140715.pdf>

are finding ways to cope with NRC procedures through exemptions. What everyone is waiting for is enabling federal law.

Second, because of these delays—and skepticism about when they will be resolved—the nation’s nuclear sites are now gearing up to monitor and manage spent nuclear fuel casks in ways that were never intended. The original plan was that spent fuel would be removed from reactor cores, cooled in pools onsite, and then put into canisters and casks for brief local storage and expeditious removal. Because that last step in the chain has never happened, the canisters and cask systems are now aging in place. At the urging of the CEP, SCE has developed an extensive program for monitoring the casks and inspecting the canisters while they are on site.⁷ Recent legal challenges and settlements have reinforced that effort.⁸ We are fortunate in that other sites built dry cask systems before SONGS and we can learn from their aging management programs. To give you a sense of just how long the delays have extended, as of today several sites have seen the original 20 year NRC license for on-site dry cask storage run its course, with each getting a 40-year renewal. At the most recent CEP meeting we devoted the entire session to this topic.⁹

Third is transportation. There is an understandable tendency in Washington to do what can be done. This tendency has generated legislation that focuses on Yucca Mountain and brings CIS along. But we must focus, now, on the reality that all of these strategies will not work unless there are viable ways to move spent fuel from reactor sites to CIS and/or permanent repositories. The US Navy safely ships defense spent nuclear fuel and related materials around the country on a regular basis—thousands of shipments—using an effective and credible government planning system and emergency training for its routes. This system must be available to the DOE as it takes authority over spent nuclear fuel transportation. The NRC has procedures ready for use in this area (NUREG 0725). Safe transportation of spent commercial reactor fuel is not a technical problem, but it is one that needs careful administrative planning and political awareness.

A serious transportation plan would have several elements:

- A program for testing and building railroad cars for moving spent fuel casks. This is a DOE responsibility, and with current appropriations DOE will test a prototype rail car (along with other support cars) over the next 2 years. That’s good news, but there are

⁷ 2014. David G. Victor. Safety of long-term storage of spent nuclear fuels at SONGS. Report of the Chairman of the Community Engagement Panel of the SONGS. For more information see https://www.songscommunity.com/docs/LongTermStorageofSpentFuel_120914.pdf

⁸ 2017. Citizens Oversight, Inc. V. Southern California Edison. For more information see https://www.songscommunity.com/doc_library_settlement.asp

⁹ 2017. 3Q Meeting of the Community Engagement Panel. Oceanside, California. For more information see <http://www.songscommunity.com/091417CEPMeetingAgenda.pdf>

no appropriations to build a fleet of these cars as will be needed to move spent fuel expeditiously. Elsewhere I have outlined the state of play and costs, which are small.¹⁰

- The states and regions must get ready. When DOE was planning to move waste from the nuclear weapons sites—such as in Colorado and Washington—state and regional officials got organized to help plan routes, safety and procedures. The states where these sites were shipping nuclear materials had an incentive to make this work because they wanted the sites cleaned up. By contrast, very little to none of the necessary spadework for local, state and regional planning of spent fuel shipments has been done. There is legislation in California that would help.¹¹ The CEP has reached out to the California Energy Commission on this topic.¹² And the Western Governors Association could easily be tapped—as could regional state associations in other parts of the country. The problem is that nobody has believed that serious solutions for spent nuclear fuel would be forthcoming. Now that they are, the transportation planning processes must gear up—with a key role for the Federal government.

All the authority needed to fix this problem does not rest with Congress but many are looking to Congress for leadership and initiative in getting the process started. A good start would be to ensure that a title on transportation is included in NWSA Amendments (inserted, presumably, in Conference), appropriations to build the needed railcar system are included in a timely way (probably starting next fiscal year), and the states are encouraged if not mandated to get organized. Under plausible yet optimistic scenarios, CIS facilities could be open in the early 2020s. Spent fuel at SONGS (and many other sites) would be ready for shipment then. It would be a pity if all the work done to open storage and permanent disposal facilities falters for lack of attention to transportation.

Final Words

In a large and diverse nation such as ours, there always seems to be a more pressing and urgent matter that captures political attention. Meanwhile, critical questions about the nuclear industry and its infrastructure remain unanswered for decades while leaving un-spent billions of dollars. Inaction has pushing these questions to future generations to answer.

These delays only succeed in creating distrust in the ability of government to find a workable solution, anger towards the plant operators and creates an impossible future for those communities that involuntarily host these sites. All we ask is that those who can act and make a difference, do so with all possible urgency.

¹⁰ David Victor, Tim Brown and Dan Stetson, “Participants in 12 June telephone call with DOE to discuss transportation of spent nuclear fuel,” 26 June 2017, see www.songscommunity.com

¹¹ 2017. Nuclear Waste Policy Amendments Act of 2017. For more information see <https://www.congress.gov/bill/115th-congress/house-bill/3053>

¹² Letter from David Victor, Tim Brown and Dan Stetson to Robert Weisenmiller, Chairman of the California Energy Commission, 12 December 2016. see www.songscommunity.com

A plan for smart removal of spent nuclear fuel from the nation's commercial reactors is now coming into focus. It will require new legislation and a new focus by the federal government, as well as the states and regional planning authorities.

I see three steps as essential. First, the political deal must be done that allows for consolidated interim storage, and that deal as far as I can tell centrally requires restarting the Yucca Mountain process. Yucca and CIS should be seen as complements to each other. Politically they are combined; economically and technically they are also combined because interim storage allows for a more rational long-term strategy that includes opening a permanent storage facility. Second, a fresh look at the priorities for removing spent fuel is needed. When options for sending the fuel become viable there will be much more fuel ready to move than the system can handle. We think decommissioned sites should be high in the queue. Third, a viable strategy for transportation is needed—a topic that has been orphaned by the lack of suitable places to send the fuel. Transportation requires some funds (small, mainly for rail cars and planning) and crucially that federal, state and other officials begin working together on strategies.

Daniel T. Stetson
Department of Energy Meeting
On Consent Based Siting Of Spent Nuclear Fuel
Sacramento, CA
April 26, 2016

I think it most poignant that we are holding this meeting on the 30th Anniversary of the Chernobyl disaster. It highlights the importance of what we are doing and the responsibilities that are on our shoulders to break through the spent nuclear fuel storage paralysis that has straight jacketed this nation since the 1950's. Good evening, my name is Dan Stetson and it is an honor for me to be here this evening. For the past two years I have served as Secretary for the Community Engagement Panel for the decommissioning of the San Onofre Nuclear Power Generating Station (SONGS).

The CEP is comprised of representatives from surrounding cities and counties, including elected officials and public servants, as well as representatives of the U.S. military, local environmental organizations, the business and labor communities, local law enforcement and local schools and academic institutions. We hold quarterly public meetings with along with workshops on pertinent topics. One of the primary goals of the CEP is to act as a liaison between the majority owner, Southern California Edison, and the general public during the decommissioning process.

While I am honored to be here in Sacramento, I along with many others are disappointed that this meeting is so far away from San Onofre, which is currently struggling with this issue. I do, however, want to thank you John Kotek and Andy Griffith for coming to our next Community Engagement Meeting on June 22nd. In fact, I invite everyone to attend that important meeting.

At our CEP meetings over the last two years I have witnessed vigorous discussions and debates around almost every element of the decommissioning process. This has included cask thickness, security, inspections, transportation, seismic activity, corrosion and more. The one point that everyone agrees upon is that everyone wants the spent nuclear fuel moved out of San Onofre to a safe storage facility as soon as possible.

Given that everyone around San Onofre wants it out, how can we - who have benefited from Carbon free electricity from SONGS for many years – impose – if that is the right word on another community the receipt of our nuclear waste. Having a spent nuclear fuel storage site in your community is viewed upon as tantamount to having a maximum security prison next door. No one wants a prison next door.

It goes without saying that the storage site must be safe for the local population and safe for the environment. The #1 responsibility of our government is the safety of its people!

Regardless of where we store the spent nuclear fuel, technology must catch up and advance beyond where it is now to the point where we have "Defense in Depth." This must include comprehensive inspections and contingency plans for every conceivable negative situation. Given human nature, we know that issues will arise and accidents may happen, just as they did at WIPP. As Mark Twain said, **"It ain't what you don't know that gets you into trouble. It's what you know for sure that just ain't so."**

It is a given that we want the spent nuclear fuel in OUT San Onofre, no matter what. However, we can't be merely dumping our problem on an unsuspecting impoverished community that is under duress that does not have the wherewithal or resources to understand what they may be getting into. There must be a very strong value proposition to the receiving community. There must be clear quantifiable benefits – economic and otherwise to the entire community now and future generations. The benefits must be significant enough where the communities would stand in line or compete to host a site. These benefits could include financial payments, local hiring preferences, community infrastructure improvements, and so forth. Somehow this value proposition must stand the test of time and new political administrations that may have other ideas. Regretfully, trust is a big issue because in the past the rules of the game have changed over time.

After potential sites (both interim and long term) have been identified, I would suggest the next step is to engage the local community on the pros and cons of local storage, and the negotiation of the value proposition. I would suggest that a variation of the Community Engagement Panel Model would be a good vehicle to accomplish this. Hopefully, you can recruit a chairman as talented as Dr. David Victor. The panel must be carefully chosen and represent all segments of the local community. We know that we will have a strong voice from the nuclear community and a strong voice from the anti-nuclear community. However, the silent majority must also be engaged. One thing that I have noticed about our panel and those who come out to our meetings is the lack of socio economic diversity. We do not have the lower socio-economic portions of the population coming to the meetings. They need to have an advocate and a voice during the process.

The entire process must be conducted with transparency, honesty and accountability. In other words, to paraphrase a former president, "Trust, but Verify."

After the engagement process is completed, the voice of the local community as communicated through their elected officials must be heard and respected. They must be willing to support or at least accept a storage facility.

Finally, getting it to the storage site is a real concern. Transportation on our rail system needs to be better. We regularly hear of train derailments and accidents. No one wants railroad cars carrying spent nuclear fuel rumbling through their neighborhood for the foreseeable future. We need to have trust and confidence in the transportation casks and rail system. With approximately 100 nuclear sites and the possibility of only a few storage sites, we are going to have a spider web of railroad tracks to these sites. We can't start planning early enough to start working with the city, county and state officials along the intended routes. We should start with the 14 plants that are no longer operating.

These are all long term goals. The Blue Ribbon Commission estimates this process will take 15 to 20 years for a deep geological site to be identified, licensed and prepared; it would take 5 to 10 years for a consolidated storage facility. SCE tells us that if a site was ready today, it would take 10 years to move all the spent fuel out of San Onofre. So the earliest we could hope for removal is 15 to 20 years. We owe it to our children and their children to break this paralysis that has existed since the 1950's.

If not us, who?

If not now, when?

December 12, 2016



Dr. Robert B. Weisenmiller
Chair
California Energy Commission
1516 Ninth Street, MS-33
Sacramento, CA 95814

Dear Chair Weisenmiller,

Thank you for your ongoing efforts to represent the interests of the State of California in favor of smart management of the state's nuclear power plants and policies. We lead the Community Engagement Panel (CEP) for the San Onofre Nuclear Generating Station (SONGS), a volunteer panel set up to help steward the process of decommissioning at SONGS. By far, the topic that has attracted the most attention at CEP meetings is how to accelerate movement of the spent nuclear fuel out of our communities into new consolidated interim storage (CIS) facilities in New Mexico, Texas, and perhaps other states. **It is in that respect that we write today and offer to work with the CEC to help sharpen a California strategy for accelerating the safe movement of spent nuclear fuel out of the state.**

We in the CEP have already benefitted enormously from the work of the CEC. We learned much when Executive Director Rob Oglesby presented at a SONGS CEP meeting in January 2015. We have also been engaged with the Department of Energy (DOE) process regarding consent for interim storage of spent fuel—a process that CEC has helped to shepherd, such as with the DOE public meeting in April 2016 in Sacramento. We think it would be useful for the CEP and the CEC to work together more closely.

Many of us in the communities around San Onofre are encouraged by the political window of opportunity that is opening for CIS. In addition to the two proposed CIS facilities that are at various stages of licensing we note that legislation was introduced in the current session of Congress to make the necessary changes in federal law, and co-sponsorship of that legislation has grown. It is quite possible that the upcoming session of Congress may see passage of that legislation as part of a larger legislative reform that would address permanent spent fuel storage (Yucca Mountain) as well as interim storage. And while the Presidential transition has created many uncertainties, DOE and the Nuclear Regulatory Commission (NRC) have been doing a lot to prepare the ground for consolidated interim storage.

It strikes us that now is the time for the State of California to accelerate planning and coordination among the appropriate state agencies in order to ensure that we are prepared to safely move the spent fuel from here—at SONGS, Diablo Canyon, Humboldt Bay, and Rancho Seco—as soon as practical. A California strategy would need to focus on how to advance our state's interests in the federal legislative and administrative processes to make CIS a reality. It would need to address questions such as how to ensure spent fuel from decommissioning nuclear sites is "first in line" when CIS becomes available, and how to ready our state, county, and local administrative bodies to work together on crucial topics such as coordination of transportation routes and safety.

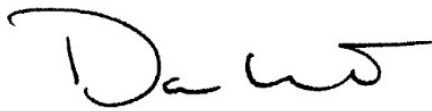
We understand that the CEC already participates in the California Nuclear Transport Working Group and, as such, coordinates with key parties such as the CHP, Cal OES, and California DPH. We appreciate that the CEC also is engaged with the Western Interstate Energy Board's High-Level Waste Committee, which offers another opportunity for the region to advance its interests. However, we are concerned that the state itself is not well enough organized to advance its interests in this debate, especially as the number of plants undergoing decommissioning in the U.S. is poised to rise—creating keen interest around the country in removing spent fuel from decommissioning sites. In the 2020s, when CIS could become available, all of the California nuclear reactors will be undergoing decommissioning—which puts our state in an almost unique position with distinct interest in making CIS a reality.

It is our hope that the CEC could help to focus and organize a statewide strategy on this important topic, and suggest ways the CEP can support such a strategy. We in the CEP have been working on many fronts—we attach a brief summary of our current strategy—but this question requires statewide and federal perspectives as well.

Those of us who serve on the San Onofre CEP would like to better understand the state-level strategy in advancing CIS while also preparing to manage the complexities of spent fuel transportation. On behalf of the CEP, we would appreciate the opportunity to discuss transportation planning with the appropriate representatives from the CEC.

We will follow-up via telephone to discuss the CEC's interest in such a discussion with the CEP or perhaps the undersigned CEP officers to start. In the meantime, thanks again for the important role you play on nuclear matters in California.

Sincerely,



David Victor
CEP Chair
Professor and Director, Laboratory on International Law & Regulation, UC San Diego



Tim Brown
CEP Vice Chair
City Council Member, San Clemente



Dan Stetson
CEP Secretary
Executive Director, Nicholas Endowment

Attachment: "San Onofre Community Engagement Panel Strategic Plan: Advocating for Federal Legislation to Enable Consolidated Interim Storage (CIS)"

cc: Members of the SONGS Community Engagement Panel
Mr. Robert P. Oglesby, California Energy Commission
Mr. Kevin Barker, Advisor, CEC
Mr. Justin Cochran, Nuclear Policy Advisor & Emergency Coordinator, CEC
Hon. Dianne Feinstein, U.S. Senator
Hon. Kamala Harris, U.S. Senator-elect
Mr. Bill Christiansen, District Director, Congressman Darrell Issa
Mr. Tom Palmisano, Vice President Decommissioning and Chief Nuclear Officer, SONGS
Mr. Manuel Camargo, Strategic Planning, SONGS
Concerned Coastal Communities Coalition

David G. Victor
Chairman, SONGS Community
Engagement Panel
David.victor@ucsd.edu

11 September 2015

Board of Supervisors
County of San Diego
1600 Pacific Highway
Room 335
San Diego, CA 92101

Re: Agenda Item for 15 September Board meeting: Advocating for the Removal and Relocation of Spent Nuclear Fuel from the San Diego Region

To the Board,

Thank you for the opportunity to comment on this agenda item. For the last 18 months I have served as Chairman of the Community Engagement Panel (CEP)—a group of 18 volunteers drawn from the many communities around the San Onofre nuclear plant. Convened by Southern California Edison, the CEP is designed to open a conduit between Edison and these communities—in part to help Edison make the local communities more aware of how the decommissioning at San Onofre will proceed and to also help Edison become better aware of the concerns and views of the communities. We are independent and advisory.

Most of the conversations at the CEP have focused on the same issue you are addressing next week. What will be done with the spent fuel? I write to share with you what we have learned about this question as it may have large implications for what the Board writes not only in the letter contemplated by this agenda item but future board actions as well.

Many people have been surprised and concerned that even as the plant is dismantled that the fuel will remain at the site within our communities for the indefinite future. The reasons for this stalemate are well explained in your agenda item. The Federal Government had planned to remove spent fuel from reactors and store it permanently at Yucca Mountain. For various reasons, the Yucca mountain option has been slow to materialize and may never become available. That strategy by the federal government never contemplated any alternatives. Without Yucca we are stuck with the spent fuel.

We in the CEP have also learned about an intriguing opportunity to get around the Yucca problem. Several private companies along with communities in other states are creating facilities for “consolidated interim storage (CIS).” The idea is to move

spent fuel from sites like San Onofre into a central location far from population centers and then store it there until a permanent repository becomes available.

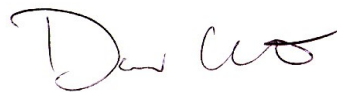
When you send your letter to the Department of Energy urging prompt relocation of the spent fuel it could be helpful to identify the need for DOE not just to focus on permanent repositories but also to offer its support to CIS. The Secretary of DOE has indicated his broad support for this option in part because DOE has large quantities of military nuclear waste that it must store. And there is an office inside DOE that is actively working in this area. But DOE would benefit from knowing about the growing local support for making CIS a reality. We have discussed this extensively at the CEP and the tenor of our conversations has been very supportive of CIS. The CEP is now canvassing a large number of other local groups to gauge their support as well.

Making CIS a reality may require changes in federal legislation to address topics such as funding—the nuclear industry has paid into a trust fund to cover the cost of storage, but there are ambiguities about how much (if any) of those funds can be used for CIS. It could be helpful to signal in your letter the need to look closely at legislative action. Frankly, Congress has not focused much on this topic and it would be helpful if California's delegation were more involved.

Finally, in the CEP we have discussed extensively the possible role for actions within the State of California. We have learned that CIS is a good idea in principle but that there are many important regulatory, political and financial details that remain to be worked out. For example, earlier efforts to create CIS facilities foundered on the lack of viable routes and strategies for transportation. Fixing that problem will require efforts not just at the federal level but also within the State and at the county level. We have learned that there could be an important role for the State of California to look at this range of topics and develop a strategy to help address them—so that CIS can become a reality. I attach a CEP memo that offers more detail on that issue, and in your letter it could be useful to indicate the need for the State to focus on this topic. Some members of the Assembly and Senate delegations from around San Onofre are aware of this issue, but across those legislative bodies awareness is still low.

I would welcome the opportunity to discuss these issues with you further and to offer any support where I or other members of the CEP can be helpful. I also look forward to working with the County as we try to make CIS a reality.

Yours Sincerely,

A handwritten signature in dark ink, appearing to read "Dan Cus". The signature is fluid and cursive, with a large initial "D" and a stylized "Cus".

Attachment: SONGS CEP Memo, 25 August