



STRATEGIC PLAN FOR THE RELOCATION OF SONGS SPENT NUCLEAR FUEL TO AN OFFSITE STORAGE FACILITY OR REPOSITORY

SONGS Community Engagement Panel

November 19, 2020

Outline

1. Context and “how did we get here?”
2. Why develop a Strategic Plan?
3. Team and process
4. Off-site alternatives and ongoing assessment
5. Preliminary path forward
6. Legislative agenda
7. Next steps and timing

Historical Context: How Did We Get Here?

Congress focused U.S. spent nuclear fuel (SNF) disposal on Yucca Mountain

Utilities paid for disposal, \$989M from SCE customers; NWF holds \$41B

DOE failed to start disposal of SNF in 1998 as required by contract

Yucca Mountain project halted since 2010 and dismantled

DOE disposal organization has been defunded and disbanded

Leaders of both parties have pledged not to further pursue Yucca Mountain

Instead, utilities are reimbursed for on-site storage through Judgment Fund

Currently, no off-site facility can accept SONGS SNF



Status of Legislation and Appropriations

Nuclear Waste Administration Act of 2019 (S. 1234)

Sponsored by Senator Murkowski (R-AK) and co-sponsored by Alexander (R-TN) and Feinstein (D-CA), to establish a new organization to manage nuclear waste, provide a consensual process for siting nuclear waste facilities, and ensure adequate funding for managing nuclear waste

Nuclear Waste Policy Act Amendments of 2019 (H.R. 2699)

Sponsored by Rep. McNerney (D-CA), it mandates resumption of licensing for Yucca Mountain and authorizes a CIS program linked to Yucca Mountain milestones. Companion bill, S. 2917, introduced by Senator Barrasso (R-WY)

Clean Economy Jobs and Innovation Act (H.R. 4447)

Includes a 5-year \$508M authorization for research, development, demonstration and commercial application of a variety of options for SNF storage, use and disposal; Incorporates bills introduced by Rep. Levin (D-CA), H.R. 8258; and by Reps. Lamb (D-PA) and Newhouse (R-WA), H.R. 6097

Multi-agency Appropriations Act for FY 2021 (H.R. 7617)

Includes \$20M in appropriations from the Nuclear Waste Fund for CIS, directs DOE “...to move forward under existing authority to identify a site for a federal interim storage facility...” using a “...consent-based approach...” Accompanying House Report encourages “...planning for the removal of spent nuclear fuel from sites located near cities...” and “...site preparation activities at stranded sites...”



Recent Federal, State, and International Developments

- ✓ On February 6, 2020 President Trump committed to respect Nevada's opposition to Yucca Mountain and instead explore "innovative approaches"
- ✓ Both the New Mexico and Texas governors have written letters opposing the consolidated interim storage facilities in their states
 - States cannot block NRC licensing but can pose impediments
 - In similar situations, circumstances have changed over time
- ✓ International progress
 - Sweden and Finland
 - Structure of siting organization and siting process



Case Study and Insights

Waste Isolation Pilot Plant (WIPP)

A federal underground disposal facility in NM for transuranic waste (TRU); development took 30+ years, required navigating windows of opportunity

Summarized Sequence of Events

- ✓ Mining economy in Carlsbad, NM went bust
- ✓ Local political and influence leaders initiated an interest in a repository
- ✓ Initially intense opposition at state level, some NGOs, and some at the local level
- ✓ Over time, a win-win-win was fashioned through trust-building and compromises:
 - A TRU¹ repository was approved
 - The Environmental Evaluation Group (EEG), set up with federal funds, conducted independent technical evaluations of the Waste Isolation Pilot Plant (WIPP) and published their findings
 - DOE agreed that SNF could not be brought to WIPP
 - A by-pass was built around Santa Fe among other commitments
- ✓ Local community generally supports WIPP and some want its mission expanded

¹Material contaminated with transuranic elements—artificially made, radioactive elements, such as neptunium, plutonium, americium, and others—that have atomic numbers higher than uranium in the periodic table of elements. In the U.S., TRU is produced by using plutonium to fabricate nuclear weapons

Why Develop a Strategic Plan for SONGS SNF?

A requirement and an opportunity

*A **requirement** of a settlement agreement regarding implementation of interim on-site SNF storage...*

*And an **opportunity** to –*

- Find a commercially reasonable pathway to more promptly relocate SNF offsite
- Consider the restart a national program for interim storage and timely permanent disposal of SNF to meet national needs and commitments
- Provide new and unique insights on SNF disposition issues from a utility and a customer perspective – informed by local stakeholder input
- Establish an SNF disposition framework that readies the utility to act as circumstances warrant



The Strategic Plan Team and Process

In order to develop an analytically-grounded Strategic Plan, SCE assembled a team of nationally recognized experts

- ✓ An “Experts Team” comprised of six nationally recognized experts provided independent review and advice to SCE on Strategic Plan development
- ✓ North Wind, a leading DOE nuclear waste management company, organized a team of subject matter experts to conduct the analysis, identify and assess alternative pathways for offsite disposition of SONGS SNF
- ✓ A stakeholder interview component was built into the Plan development to feed input into the analysis
- ✓ An internal SCE team is reviewing the ongoing North Wind analysis, and with input from the Experts Team, is formulating a Spent Fuel Action Plan

The Strategic Plan Framework

Goal:

Safe, commercially reasonable relocation of SONGS spent nuclear fuel (SNF) to another facility, restore the site, and return the land to the Navy

- ✓ Timely off-site disposition of SNF
- ✓ Satisfy current DOE contractual requirements
- ✓ Prevent incremental costs due to continued inaction given that nuclear utility customers have pre-paid for SNF disposal
- ✓ Avoid unrecoverable costs to SCE customers
- ✓ Protect SCE customers from residual liability risk once SNF leaves SONGS



Cast a Wide Net for Alternatives

Representative pathways for permanent disposal and interim storage were identified for assessment; each pathway may contain multiple variations

Federal Permanent Geologic Repository

- Yucca Mountain or new site

Consolidated Interim Storage Facility (CISF)

- Federal CISF
- Federally-supported non-federal CISF
- Various forms of public/private arrangements
- Non-federal CISF

Other Alternatives Identified by Stakeholders

- Multi-utility storage (e.g. moving SONGS SNF to Palo Verde)
- Moving the current SONGS ISFSI (e.g. elsewhere on Camp Pendleton)

Reconnaissance of other concepts beyond current policy and regulatory framework

- Deep borehole disposal, for example



Assessment Factors Guiding the Analysis

A comprehensive set of assessment factors were developed to analyze representative alternative pathways.

- ✓ **Technical, Safety, and Regulatory Feasibility**
- ✓ **Commercial Reasonableness**
- ✓ **Timeliness of Offsite Disposition**
- ✓ **Implementation Feasibility**



Assessment Factors Guiding the Analysis

Technical, Safety and Regulatory Feasibility

Key Questions:

- ✓ Has the disposition alternative been technically proven? What are the residual technical risks?
- ✓ Is the necessary NRC regulatory framework in place to enable the disposition alternative to obtain necessary approvals?
- ✓ What is the level of regulatory preparation required to obtain necessary approvals?

Examples Emerging from Current Analysis:

- The private CISF projects in New Mexico and Texas have been in regulatory development for years and are well positioned to obtain NRC licenses
- Moving the current SONGS ISFSI to any new site will take many years of technical planning and regulatory review
- Deep borehole disposition, while an interesting innovative concept, poses technical issues that do not match up well with current licensing criteria



Assessment Factors Guiding the Analysis

Schedule Considerations for Offsite Disposition

Key Questions:

- ✓ What are the major factors affecting implementation schedule? What is the degree of uncertainty in those factors?
- ✓ How soon can the alternative be implemented?
- ✓ To what extent is implementation governed by the timeline for Congressional action on new federal legislation?
- ✓ What steps are needed to prepare the SONGS site for SNF transportation readiness?

Examples Emerging from Current Analysis:

- While needed, the path forward for the development of a permanent geological repository will be much longer and more highly uncertain than other alternatives
- Notwithstanding current socio-political issues, past experience and current plans suggest offsite consolidated interim storage alternatives can be implemented sooner
- Current federal policy regarding the prioritization of shipments of SNF could stretch out the offsite shipments of SONGS SNF over several decades



Assessment Factors Guiding the Analysis

Commercial Reasonableness

Key Questions

- ✓ What are the likely costs? What are the major cost uncertainties?
- ✓ Will the Federal Government fund the costs through the Nuclear Waste Fund? What is the likelihood of appropriations?
- ✓ Can the costs be reimbursed from the Judgment Fund?
- ✓ Would it be prudent to use Decommissioning Trust Funds to pay for certain costs?

Examples Emerging from Current Analysis:

- Requiring the federal government to perform its statutory and contractual responsibility to take title and possession of SONGS SNF at the fence line will avoid additional costs to utility customers
- Private CISF providers will charge fees for storing SONGS SNF, but the full costs of transport and storage may not be fully reimbursable from the Judgment Fund, and more importantly, utility customers may not be fully shielded from liability for SONGS SNF at private storage facilities absent federal government intervention



Assessment Factors Guiding the Analysis

Implementation Feasibility

Key Questions

- ✓ Are changes in federal law required? What are current prospects?
- ✓ What socio-economic-political factors might impact successful implementation?
- ✓ What can SCE do to improve prospects for successful implementation?

Examples Emerging from Current Analysis:

- Federal reimbursement from the Judgment Fund for some or all costs of relocating SONGS SNF to a private CISF will require new federal policy guidance that ultimately may need to be incorporated into settlement agreements
- Assumption of liability by the federal government for SONGS SNF stored at a private CISF liability will require new federal legislation
- Resolution of these issues likely will have to be industry-wide, requiring collective support across the nuclear industry and broad coalition support for federal action



Preliminary Path Forward

Federal action is needed, but the prospects and timing are uncertain; SCE will need to maintain optionality and flexibility to take advantage of opportunities as they arise

✓ **Re-establish federal leadership**

- Re-start the national program and secure funding
- Leverage approaches advanced by members of the CA Congressional delegation to pursue a clear consensus approach
- Build alliances with other stakeholders to amplify advocacy efforts

✓ **Maintain optionality and flexibility**

- Monitor potential off-site CISF alternatives, be prepared as situation warrants

✓ **Continue to implement the current Decommissioning Plan safely and effectively**

- Safely store SNF via inspection and maintenance and other programs
- Pursue readiness actions to be prepared once a destination becomes available



National Legislative Agenda

Establish aspirational policy and legislative objectives, building from nuclear industry-wide principles

Strategic Programmatic Objectives:

1. Appropriations to restart the national program
2. A national consolidated interim storage program – either as a federal program or in cooperation with non-federal entities
3. Re-establish a program for a permanent geologic repository, including stakeholder engagement and consent of state, local and tribal governments
4. Streamline and prioritize SNF transportation scheduling, improving schedule efficiency and cost effectiveness while cognizant of the problem of stranded SNF

Final Plan will be Three Documents

Strategic Plan for Disposition of SONGS SNF

- Addresses alternative pathways and offers findings regarding the offsite relocation of SONGS SNF

SONGS SNF Conceptual Transportation Plan

- Identifies on-site preparations needed to prepare SONGS SNF for transport

SCE Action Plan

- Outlines follow-up steps by SCE to catalyze action based on findings in the Strategic and Conceptual Transportation Plans

Completion of Strategic Plan

Current Status

Alternatives analysis is being completed, stakeholder input is being integrated, and drafting is underway

Next Steps

- Complete Strategic Plan, Conceptual Transportation Plan, and Spent Fuel Action Plan in 1Q 2021
- Publish documents in February/March 2021
- Pursue actions identified in the Action Plan