Used Fuel Management: Mitigating the Liability

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Taxpayers Paying Billions For Federal Government's Failure to Accept Used Nuclear Fuel

- \$4.5 Billion paid from taxpayer-funded Judgment Fund as of September 2014 for damages incurred because DOE did not begin accepting used nuclear fuel in 1998
- Liabilities will continue to grow after DOE begins accepting used fuel until backlog eliminated (decades)
- DOE estimates the total taxpayer liability at \$27.1 Billion if it begins accepting used fuel in 2021
- Every year of delay in opening a facility will cost the taxpayer an additional \$500 million (estimated)
- Consolidated interim storage facilities can likely be opened before Yucca Mountain (see next slides for timelines on Yucca and CIS)
- Taxpayer liabilities are not paid out of the Nuclear Waste Fund



Yucca Mountain and Consolidated Interim Storage (CIS) Can Mitigate Taxpayer-Funded Liability

2014: \$4.5

Billion* in
damages already
paid from
Judgment Fund

Estimate of total damage awards that will eventually be paid from taxpayer-funded Judgment Fund if acceptance of used fuel begins on this date (billions)

 2021:
 2022:
 2025:
 2028:
 2038:
 2042:

 \$27.1*
 \$27.6
 \$29.1
 \$30.6
 \$35.6
 \$37.6

2014 2015 2022 2025 2028 2038 2042

2015: Yucca Mountain licensing resumes and a consolidated interim storage (CIS) facility project begins

2022: generic **CIS facility** opens – assumes that a site was available at the start of the project

2028: Yucca
Mountain opens assumes annual
average funding of
\$1.4 billion**

Funding Options

2038: **Yucca Mountain** opens – assumes a max of \$750 million/year funding***

Siting Options

2025: generic **CIS facility** opens — assumes three year siting process

2042: **Yucca Mountain** opens – assumes a max of \$600 million/year funding***



* Taken from 2014 DOE Audit Report of Nuclear Waste Fund OAS-FS-15-03 – out years estimated assuming \$500 million per year increase based on Blue Ribbon Commission Final Report

**These dates assume that the land and water rights have been obtained by the time NRC completes its review. Construction will not be permitted to begin until land and water rights are secured.

*** Historical maximum appropriation was \$576 million

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2018 or later: Construction begins, NRC will not permit construction to begin until land and water rights are secured – congressional action necessary for land rights

2018

2022 and 2025: Consolidated interim storage potential opening dates depending – see Consolidated Interim Storage timeline

2022

Yucca Mountain Project

2028

2015 > 2016

2016: Restart NRC licensing and begin ASLB proceedings

2015: Reconstitute DOE and NRC programs 2018: NRC construction authorization received – Yucca cannot receive used fuel until after construction complete

Cost: Restart/relicensing \$500 million Construction \$13.7 billion Operation \$1.5 billion annually**

(a) 2028 Construction completed and operations begin – assumes construction starts in 2018 (average annual funding \$1.4 billion – peak funding \$2 billion)

(b) 2038 Construction completed and operations begin – assumes construction starts in 2018 (maximum of \$750 million/year funding – historic max appropriation was \$576 million)

Estimate of total damage awards from taxpayer-funded Judgment Fund if acceptance of used fuel begins on this date (billions)

2025

The potential for delays due to additional NRC or Court proceedings was not considered

 2021:
 2025:
 2028:

 \$27.1
 \$29.1
 \$30.6

**Restart cost based on industry judgment. Construction and operation estimates based on DOE/RW-0591 "Analysis of the Total System Life Cycle Cost of the Civilian Radioactive Waste Management Program, Fiscal Year 2007" (July 2008) and actual appropriations for 2007 through 2009. Costs escalated to 2012 dollars.

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2038:

\$35.6

203

Consolidated Interim Storage Project

Since the facility will be developed in a willing host community and state, the potential for NRC and Court delays due to significant opposition was not considered.

(generic timelines)

Cost: Pre-operation Siting Path 1: Site not yet identified \$525 million 2015: Begin Operation \$115 2023: NRC search for site 2020: NRC million annually* license issued in willing host 2018: Siting license 2025: Operations and construction community application complete and begins begin and state submitted design begins 2015 2017 > 2018 2020 2022 >2023 2025 2028 2038 2028 and 2038: Yucca 2015: Design 2017: NRC 2020: NRC 2022: Operations Mountain potential opening license issued begins license begin dates depending on funding and construction application and legislative action - see submitted begins Yucca timeline

Siting Path 2: Willing host community and state already identified

Estimate of total damage awards from taxpayer-funded Judgment Fund if acceptance of used fuel begins on this date (billions)

 2021:
 2025:
 2028:
 2038:

 \$27.1
 \$29.1
 \$30.6
 \$35.6



^{*} Based on EPRI report 1018722 "Cost Estimate for an Away-From-Reactor Generic Interim Storage Facility (GSIF) for Spent Nuclear Fuel." Costs escalated to 2012 dollars.

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