Consolidated Interim Storage
November, 2019
About the CISF

**WHY? Our values**

✓ Many Benefits including reducing the taxpayer burden for management of used fuel by providing a safe, reliable interim used fuel storage solution centered on consolidated storage.

**WHAT? An opportunity**

✓ Because safe, used fuel storage is critical to the future of the nuclear industry, which is an excellent source of clean energy.

**HOW? A vision**

✓ ISP’s CISF: offers a viable path forward that can be the 1st step to pave the way for a prudent solution for used nuclear fuel.
Consolidation Benefits

- Elimination of multiple secluded ISFSIs
- Complementary to a national repository
- Investment in safety, security and maintenance
- **Elimination of management costs** and support functions for multiple ISFSIs
- Communities at shutdown sites will be able to repurpose or monetize property
- Economic benefits to hosting CISF community
- Transportation assets can be re-used for transport to final repository
- **Minimize Taxpayer liability** for dry fuel storage

**CISF reduces both Cost and Risk**
Project Update

- Interim Storage Partners LLC, a JV between WCS and Orano, established in 2 QTR 2018.
- **NAC International and Orano TN** are the DFS Technology providers.
- Project Environmental impacts analyzed with storage of **40,000 MTHM in canisterized storage systems**.
- 8 separate phases; storage of up to 5,000 MTHM in each phase.
- **License for 40 years** with renewals of up to 40 years each.
- Initial SAR includes selected NAC International and TN NUHOMS® canisterized storage systems which prioritize shutdown sites.

Phase 1 will be populated with Fuel that is or will be ready for near term Transportation to the CISF.
License Application History

- License application **submitted on April 28, 2016**.
- Completed RSI responses July through Dec 2016
- The NRC started review of the Environmental Impact Statement (NEPA) during the review of the RSI responses.

**NRC Accepted for Review in 1 QTR 2017**
- Review Suspended in 1 QTR 2017
- Restart requested **June 8, 2018**.
- Security RAIs received in Nov 2018
- First part of RAI round 1 received Nov 2018,
- Part 2 and 3 of Round 1 RAIs received March and April, 2019
- Several public meetings held in 2019 to discuss draft RAI responses
- ASLB Oral Arguments held in Midland, Texas July 10-11 2019
- ASLB ruled to admit one contention submitted by Sierra Club

RAIs responses underway, responded to Round 1 part RAIs and submitted draft responses for part 2 and part 3. NRC Review scheduled to be complete May 2021.
License Application

Priority on currently licensed systems for shutdown sites:

**NAC International**
- Maine Yankee
- Connecticut Yankee
- Yankee Rowe
- La Crosse
- Zion

**Orano TN NUHOMS®**
- Rancho Seco
- SONGS Unit 1
- Millstone Unit 1
- Oyster Creek* (S/D scheduled 2019)

* Fuel burned less than 45 GWd/MTU

Indicates a “stranded” (ISFSI only) site identified in the 2012 Final Report of the “Blue Ribbon Commission on America’s Nuclear Future” (BRC)

Initial license application targets shut down reactors with fuel that is ready to transport today
Pad Layout for CISF

Conceptual Drawing

Security and Administration Building

New Rail Spur

Cask Handling Building
Environmental Impacts have been extensively analyzed in the region.
  • TCEQ conducted environmental reviews supporting issuance of LLW licenses.
  • NRC prepared an EIS for adjacent URENCO USA.
  • Proposed approach ensures cumulative environmental impacts are analyzed.
WCS Visitor Center Grand Opening

• Opened June 5, 2018, for community outreach in Andrews, Texas
• InterimStoragePartners.com (English and Spanish translation)
• Holding regular community tours of the WCS site with focus on ISP
• Follow us on twitter, @ISP Nuclear
CISF Cost Benefit Analysis

• The project performed a cost benefit analysis to support the USNRC requirements for a Spent Fuel Storage License. It is located in the Environmental Report and is available here; https://www.nrc.gov/waste/spent-fuel-storage/cis/wcs/wcs-app-docs.html

• In the US, eliminating shutdown reactor site ISFSIs by consolidation, will result in savings for the US Government, as in most cases, the US Government is paying the costs of interim storage.

• The cost benefit analysis is based on estimated ISFSI costs for eight shutdown reactor sites which are then extrapolated to future reactor site retirements on a generic basis over the life of the CISF facility.

• Transportation costs to the CISF are included in the analysis.
## CISF Cost Benefit Analysis – Major Assumptions

<table>
<thead>
<tr>
<th>Assumption</th>
<th>Value 2018 USD</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual Operating cost of a S/D Reactor Site ISFSI with Pool</td>
<td>$1M</td>
<td>USDOE 2016 report, Cost Implications of an Interim Storage Facility in the waste management System</td>
</tr>
<tr>
<td>Annual Operating cost of a S/D Reactor Site ISFSI without Pool</td>
<td>$10M</td>
<td>USDOE 2016 report, Cost Implications of an Interim Storage Facility in the waste management System</td>
</tr>
<tr>
<td>Inflation rate</td>
<td>2.4%</td>
<td>Congressional Budget Office forecast</td>
</tr>
<tr>
<td>Discount Rate</td>
<td>3.4%</td>
<td>December 2018 Treasury rates</td>
</tr>
<tr>
<td>Spent Fuel removal from Reactor sites</td>
<td>Year of retirement plus 10 years</td>
<td>Retirement dates of US reactor fleet – 10 year cooling time for transportation assumed.</td>
</tr>
<tr>
<td>Reception Rate of Canisters at CISF</td>
<td>Year 1 – 25 Year 2 – 100 Year 3 - 200</td>
<td>CISF License Application</td>
</tr>
<tr>
<td>Repurposed S/D Reactor Site Land</td>
<td>$27.4M</td>
<td>Average of 8 shutdown reactor sites industrial site value reduced by 50% - monetized 10 years after fuel is removed from site</td>
</tr>
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<tr>
<td>Preconstruction Licensing, construction and engineering</td>
<td>$78M</td>
<td>2009 EPRI report, Cost Estimate for an Away-From-Reactor Generic Interim Storage Facility – Adjusted for the ISP CISF design</td>
</tr>
<tr>
<td>CISF Construction and Capital Costs</td>
<td>$469M</td>
<td>2009 EPRI report, Cost Estimate for an Away-From-Reactor Generic Interim Storage Facility – Adjusted for the ISP CISF design</td>
</tr>
<tr>
<td>CISF Operating Costs</td>
<td>$53M</td>
<td>2009 EPRI report, Cost Estimate for an Away-From-Reactor Generic Interim Storage Facility – Adjusted for the ISP CISF design</td>
</tr>
<tr>
<td>Transportation Assets and Transport Costs supporting ~40,000 MTHM</td>
<td>$475M, $1,639M</td>
<td>2009 EPRI report, Cost Estimate for an Away-From-Reactor Generic Interim Storage Facility – Adjusted for transport scenario in license application</td>
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</table>
Cost benefit Results (USD)

$6.7B in savings over 40 years

9 182 360 591

2 486 597 077

No Action SNF Cost
CISF Option Cost
Complete Reference list for Cost Benefit Analysis


