Update on WCS' Plans for Consolidated Interim Storage of Used Nuclear Fuel

J. Scott Kirk, CHP
Vice President of Licensing & Regulatory Affairs
19 November 2015, Rockville, MD
Project Scope

- Environmental impacts will be analyzed with storage of 40,000 MTHM for 40 years
  - 8 separate phases; storage of up to 5,000 MTHM in each phase
- Initial SAR will include selected AREVA NUHOMS® and NAC International storage systems which will prioritize shutdown sites
  - Additional systems and sites to be added in future License Amendments
  - Storage of used fuel from over 10 shutdown/decommissioned nuclear power plants will fit in Phase 1
- Allows flexibility to transition beyond storage of fuel from currently decommissioned reactors
- License for 40 years with multiple renewals of up to 20 years each
- Ongoing discussions with DOE and the U.S. Congress on how to integrate the availability of an interim storage facility into the national strategy for used nuclear fuel management
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<td>NRC Pre-App Meeting (SAR Tech. Issues) – 10/7/2015</td>
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<td>Preparation of 1st License Amendment Request</td>
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<td><strong>License Application Approved – June 2019</strong></td>
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**Project on Track for License Application Submittal by April 2016**
- WCS has the lead role in preparing the license application, with support from AREVA and NAC
- License application for Private Fuel Storage (PFS) that was approved by the NRC provides a template
- A Safety Analysis Report for the DOE following the NRC Standard Review Plan (NUREG-1567) for a generic CISF has already been prepared by AREVA
- SAR will be prepared for selected AREVA NUHOMS® and NAC systems
- To ensure lowest cost/risk/schedule duration in the licensing process, the initial SAR will only include systems that:
  - Are currently licensed and in service
  - Are deployed or will be deployed at shutdown reactor sites
- Additional systems to be added in future license amendments
Priority on currently licensed systems for shutdown sites:

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

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

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

* Fuel Burned less than 45 GWD/MTU

Initial License Application will cover ~80% of UNF and GTCC at BRC “Stranded” Site
Proposed CISF Site Overview
Expansion of an Existing Radioactive Waste Facility – Not a “Greenfield” Site

Aerial Photo of LLRW Facilities

- Site includes ~14,000 acres (~23 square miles)
  - Includes Compact LLW, Federal LLW, and RCRA Landfills and Storage and Processing Facility for LLW
- Licensed by Texas as an Agreement State
- Rail access, irradiated hardware, large components, and large scale D&D project services currently provided
Location of CISF

CISF will occupy ~320 acres or only 2.2% of the 14,000+ acre site

Potential Site of Consolidated Interim Storage Facility (CIST)

1. Treatment & Storage
2. Hazardous Waste Landfill
3. Byproduct Disposal Facility
4. Low Level Storage Pad
5. Federal Waste Facility
6. Compact Waste Facility

Project Scope: Store 40,000 metric tons heavy metal (MTHM) for 40 years or longer. There will be 8 separate phases of up to 5,000 MTHM in each phase.

Conceptual Drawing
Pad Layout for CISF

Conceptual Drawing
View of Deployed Systems for Phase 1 Pad

Conceptual Drawing
WCS has Proven Programs and Infrastructure for Managing Radioactive Materials

- WCS currently operates the most robust LLW disposal facility in the U.S.
- LLW is put into Modular Concrete Canisters, grouted and then placed into the landfill
- Operations include irradiated hardware with receipts as high as 20,000 rem/hr on contact, but a collective dose of only 50 mrem for disposal
- Radiation safety, environmental monitoring, security and other functions are ongoing
Thorough Environmental Characterization

- Environmental Impacts have been extensively analyzed in the region
  - NRC prepared an EIS for URENCO USA
  - TCEQ conducted ER supporting issuance of LLW and Storage licenses
- WCS approach allows addition of new storage systems as amendments, but ensures cumulative environmental impacts are analyzed
• WCS initiated discussions with Andrews County, Texas for support to site the CISF
• WCS underscored it would proceed only with the support of the local community
• Andrews County resolution endorsing the project passed unanimously on January 20, 2015
• Texas Radiation Advisory Board issued a Sept. 2014 position paper strongly recommending Texas position to itself to host the first CISF in the U.S.
• Enthusiastic support from Texas’ U.S. House and Senate delegation and the Governor’s office

PFS showed that broad consent (i.e., state level and not just local level support) is critical for project success
Drives Progress Toward a Permanent Repository Solution

- The WCS CISF does not compete against a permanent repository
  - Over 70,000 MTHM generated to date
  - WCS CISF only licensing 40,000 MTHM
  - Still need a permanent solution for the industry
- Allows transportation system to be developed and demonstrated
- Easier to prepare fuel for final repository disposal at an active CISF instead of at a shutdown reactor site

*CIS is a Complement to rather than a Competitor against Permanent Geological Disposal*
Summary

- WCS project is consistent with the BRC's recommendations regarding need for consolidated interim storage and consent-based licensing
- WCS, AREVA, and NAC have the qualifications and capabilities to license, construct, and operate the facility
- License Application to be submitted by April 2016 will cover ~80% of UNF and GTCC at BRC "Stranded" Sites
- Site is environmentally well-characterized, enjoys broad local, state level and congressional support, and already has robust infrastructure that supports operating LLW facilities
- A complement to and not a competitor against a permanent geological repository
- See the website www.WCSstorage.com for updates