Nuclear Fuels Storage and Transportation Planning Project (NFST) Program Updates and FY16 Planning

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DOE-NFST
SSEB Joint Meeting
December 9-10, 2015
New Orleans, LA
Contents

- Leadership update
- Consent-Based Siting
- FY16 Funding and Program Planning
- Action Updates
  - Railcar
  - NFST Reports
- Cooperative Agreements
On March 24, President Obama authorized the Energy Department to move forward with planning for a separate repository for high-level radioactive waste resulting from atomic energy defense activities.

- **Actions the Department will undertake**
  - Planning for a defense-only repository
  - Moving forward with planning for interim storage of commercial spent fuel
  - Moving forward with a consent-based siting process for both types of facilities
Projected Volumes of Commercial SNF, DOE-Managed SNF, and DOE-Managed HLW, in $m^3$

**Commercial and DOE-Managed HLW and SNF**
- Commercial SNF: 183,896 m$^3$, 85%
- DOE SNF and HLW: 33,424 m$^3$, 15%
- DOE SNF (includes naval SNF): 7,165 m$^3$, 3%
- DOE HLW: 25,260 m$^3$, 12%

**DOE-Managed HLW**
- Projected Hanford HLW glass: 14,089 m$^3$, 54%
- Existing SRS HLW glass: 2,969 m$^3$, 11%
- Projected SRS HLW glass: 3,988 m$^3$, 15%
- Treated sodium-bonded fuel wastes: 132 m$^3$, <1%
- WVDH HLW glass: 245 m$^3$, 1%
- Germany HLW glass: 3 m$^3$, <1%
- Vitrified Cs-Sr capsules: 453 m$^3$, 2%
- Sodium-bearing waste: 721 m$^3$, 3%

**DOE-Managed SNF**
- DOE SNF: 3,561 m$^3$, 14%
Waste Packages

Source: Assessment of Disposal Options for DOE-Managed High-Level Radioactive Waste and Spent Nuclear Fuel, October 2014
Questions from Stakeholders

- How will siting a defense only repository affect siting commercial storage and disposal?
- Will modifications to the standard contract be needed to pursue storage?
- How do proposals for private interim storage affect DOE’s plans?
## FY16 Budget Scenarios

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<tr>
<th>Subprogram</th>
<th>FY 2015 Enacted</th>
<th>FY 2016 Request</th>
<th>House Mark</th>
<th>Senate Mark</th>
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<td>197,000</td>
<td>217,760</td>
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Objective: Activities to broadly support Siting, Storage and Transportation objectives

- Continued development of systems-oriented modeling tools and analysis
  - UNF ST&DARDS database
  - Transition from legacy tools

- System Integration and standardization

- Knowledge and Document Management
Objective: Plan for SNF storage

- Generic Storage Facility Designs
  - Pilot Interim Storage Facility and topical safety analysis report (TSAR)

- Functional and Operational Requirements
  - ASME Acceptance criteria

- Environmental Considerations

- Regulatory Considerations
Objective: Prepare for large-scale transport of SNF to commence within 10 years

**Engagement with Tribes and states**
- Cooperative Agreements, Transportation Core Group, NTSF, ad hoc Working Groups
- 180(c) Policy, SNF Rail/Routing, TPF

**Transportation Operations**
- Shutdown site visits
- START web-GIS tool - [https://gis.inl.gov/START](https://gis.inl.gov/START)

**Hardware**
- S-2043 Railcar – design
DOE is developing a railcar to comply with the Association of American Railroads (AAR) S-2043

August 2015 – DOE signed a contract with AREVA Federal Services
- Subcontractors – KASGRO rail, Transportation Technology Center Inc. (TTCI)
- Navy S-2043 railcar team

Contract covers design, analysis and prototype fabrication

There will be future solicitations for prototype testing and large-scale fabrication
### Projected Railcar Timeline

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<td>Phase 3: Prototype Fabrication and Delivery</td>
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<td>Testing and Approval of Railcars</td>
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NFST Reports

- Updated Shutdown Sites Report, May 2015
- Routing Paper, July 2015
- Performance Specification for STAD, July 2015
- Rationale for the Performance Specification for STAD, July 2015
- Initial Standardized Canister System, Sep. 2015
- Generic Design Alternatives for Dry Cask Storage, Oct. 2015
- Generic Design for Small Size STAD, Oct. 2015
- Operational Requirements for STAD, Oct. 2015
Questions?

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