

Program Update from DOE-NE: Office of Integrated Waste Management

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State Regional Group Fall Meetings
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Disclaimer

This is a technical presentation that does not take into account contractual limitations or obligations under the Standard Contract for Disposal of Spent Nuclear Fuel and/or High-Level Radioactive Waste (Standard Contract) (10 CFR Part 961). For example, under the provisions of the Standard Contract, spent nuclear fuel in multi-assembly canisters is not an acceptable waste form, absent a mutually agreed to contract amendment.

To the extent discussions or recommendations in this presentation conflict with the provisions of the Standard Contract, the Standard Contract governs the obligations of the parties, and this presentation in no manner supersedes, overrides, or amends the Standard Contract. This presentation reflects technical work which could support future decision making by DOE. No inferences should be drawn from this presentation regarding future actions by DOE, which are limited both by the terms of the Standard Contract and a lack of Congressional appropriations for completing a spent nuclear fuel repository

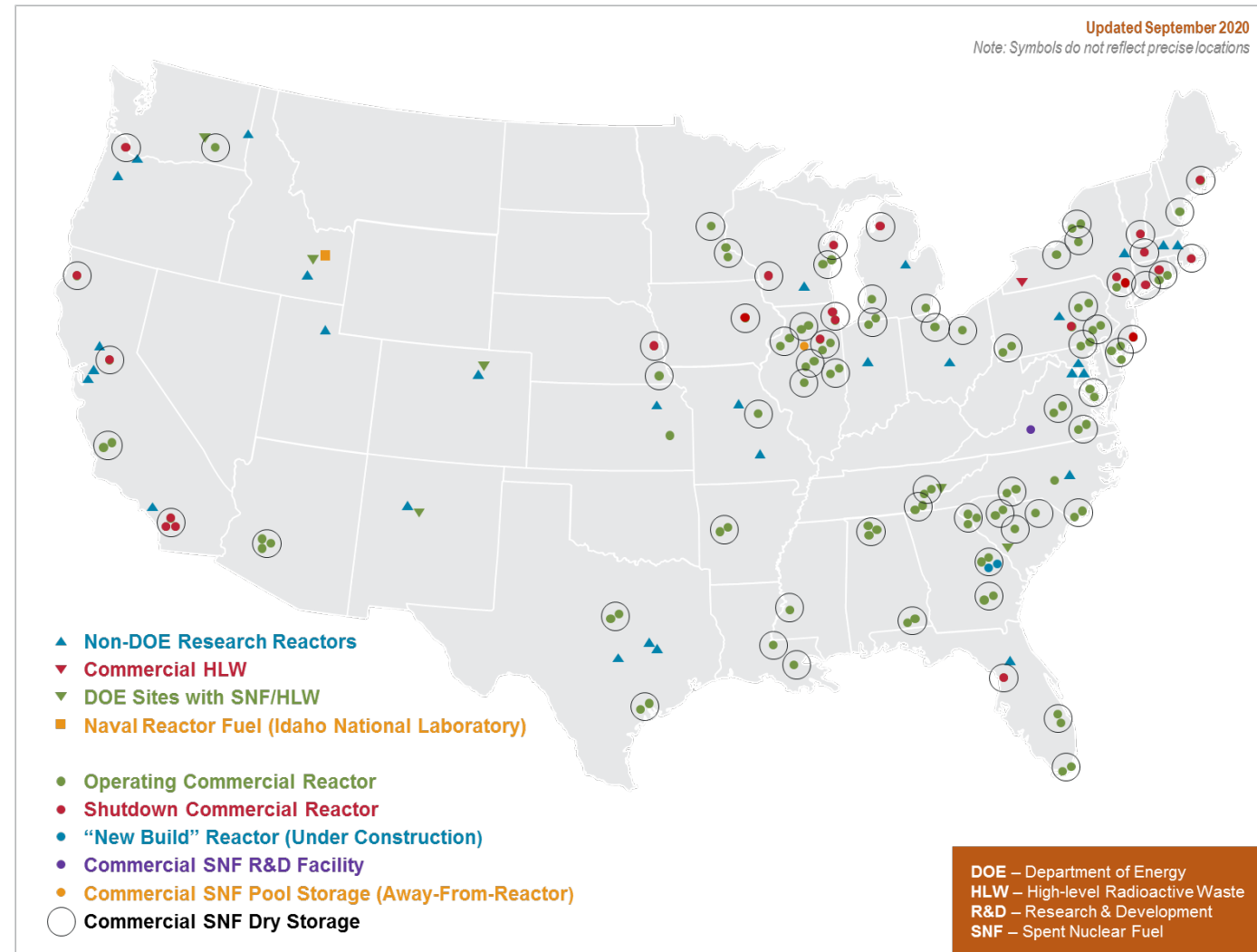
Transportation Planning Activities



- FY21 Program Plans
- Recent Work Products
- Railcar Development Updates
- START Updates
- Site Infrastructure Evaluations
- Intergovernmental Engagement

FY21 Program Plans

- ~~DOE is under a continuing resolution (CR) through Dec. 11, 2020~~
 - FY21 Appropriations were signed into law on Dec. 27th, 2020
 - Office of Integrated Waste Management (IWM) received \$18M (a \$7M reduction from FY20)
 - Congress appropriated \$27.5M for “Nuclear Waste Disposal”
- IWM will continue working on transportation projects from FY20 until new direction is received.



Recent IWM Work Products

- **Spent Nuclear Fuel and Reprocessing Waste Inventory**, rev. 7 released in Sept. 2020
 - Annual update on commercial and government spent nuclear fuel (SNF) and high-level radioactive waste (HLW) inventories
 - OSTI link – https://sti.srs.gov/fulltext/FCRD-NFST-2013-000263_R7.pdf
- **Nuclear Power Plant Infrastructure Evaluations for Removal of Spent Nuclear Fuel**, ~~Fall 2020~~ Winter 2021
 - New title for report formerly titled as, “Preliminary Evaluation of Removing Used Nuclear Fuel from Shutdown Sites”
 - Includes site visit information for Oyster Creek (NJ) and Pilgrim (MA)

Railcar Development - Atlas

- DOE is developing railcars to comply with the Association of American Railroads' (AAR) Standard S-2043
- 12-Axle Atlas Railcar Testing:
 - Atlas testing is 70% complete. Not all tests were passed on the first try, and some adjustments were made to the railcar equipment (e.g. stiffer suspension pads)
 - Buffer car testing is 100% complete.
 - When single car testing is complete, DOE will submit testing reports for the Atlas and buffer railcars to the AAR for “conditional approval.”
 - The Navy is conducting the single-car testing on their rail escort vehicle (REV) and they will submit a similar report to AAR.
- The DOE's REV is being fabricated in Oregon.
- Single car testing for Atlas, the buffer car, the Navy's REV, and delivery of DOE's REV is expected by March 2021. Then multi-car testing will begin.
- Multi-car testing is expected to take about 2 years including: on-site testing at TTCL in Pueblo, CO; off-site testing; the demonstration run; another testing report; and another conditional approval from the AAR.



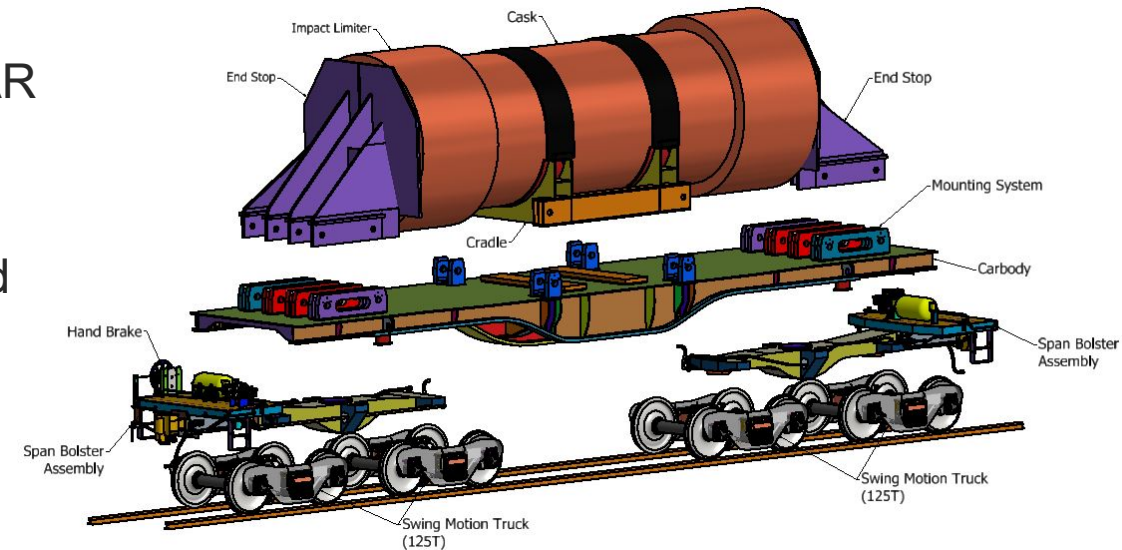
Photo: Atlas railcar with test weight



Photo: Navy REV

Railcar Development – Fortis

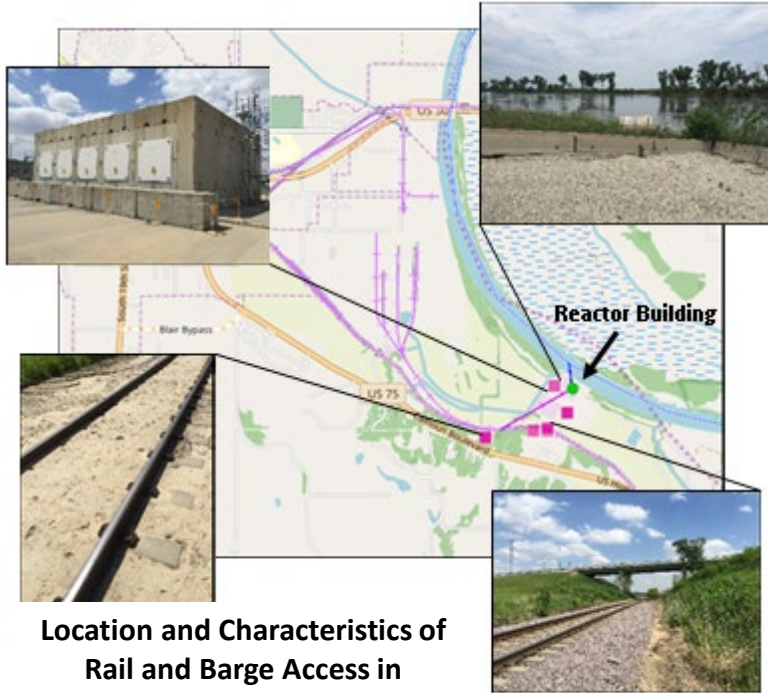
- 8-Axle Fortis Railcar:
 - Contract with Sharma and Associates, Inc. to design AAR S-2043 compliant railcar with 8-axes
 - Flatcar supported on two span bolsters
 - On four (4), 125-Ton Swing Motion® trucks from Amsted Rail
 - Axle load: 78,750 lb. (GRL: 630,000 lb.)
 - 38" Wheels
 - Design awaiting approval from AAR's Engineering and Equipment Committee
 - Next steps are fabrication of a prototype railcar and testing
 - Request for Information (RFI) published on Dec. 17th, 2020



Lading Weight

Component	Weight, lb.
Loaded Cask	420,000
Cradle	15,000
2 End Stops	44,000
Total	479,000

Systems Analysis Tools - START



Location and Characteristics of
Rail and Barge Access in
Proximity to Fort Calhoun Site

Image Credits: US DOE



- In spring 2020 IWM staff began the process of migrating START to a DOE-HQ cloud-based server
- A cloud-based server will provide:
 - More flexibility for keeping START's data and features up to date
 - Enable prompt fixes for software bugs
 - Support virtual START trainings by allowing scheduled bandwidth increases to support more simultaneous users
- START appears to be the first software tool of its kind to go through the DOE-HQ cloud migration process – taking longer than initially expected.
 - IWM staff will be sure to let TRMTC and SRG committees know when the new hosted version of START comes online.
- Separately, PNNL has been conducting a Verification and Validation (V&V) analysis of START, to be followed by a Quality Assurance (QA) assessment.
 - The V&V and QA are being done to ensure START meets accepted standards for software used to support environmental assessments and/or Environmental Impact Statement analyses.
- START came back online December 23, 2020 after an unplanned outage on the INL server.

Nuclear Power Plant Site Infrastructure Evaluations

- The purpose of site evaluations is to support planning for DOE removal of spent nuclear fuel (SNF) from nuclear power plant sites
 - Site SNF inventory
 - Site conditions
 - Near-site transportation infrastructure and experience
- IWM planned to conduct 4 in-person site visits in 2020 to Dresden and Morris in IL, and Ginna and Nine-Mile Point in NY
 - Due to COVID-19 related travel restrictions, in-person site visits have not occurred.
 - A virtual site visit to Morris was conducted in June 2020, facilitated by CSG Midwest
- If travel is possible, IWM is planning an in-person site visit to Dresden in Spring 2021

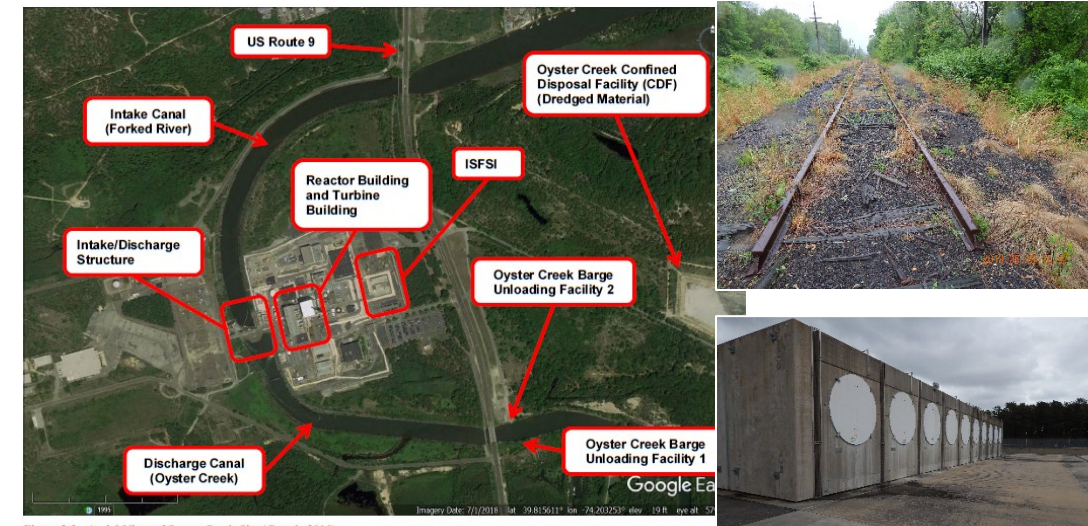


Figure 2-3. Aerial View of Oyster Creek Site (Google 2019)



Figure 3-3. Aerial View of Pilgrim Site (Google 2019)

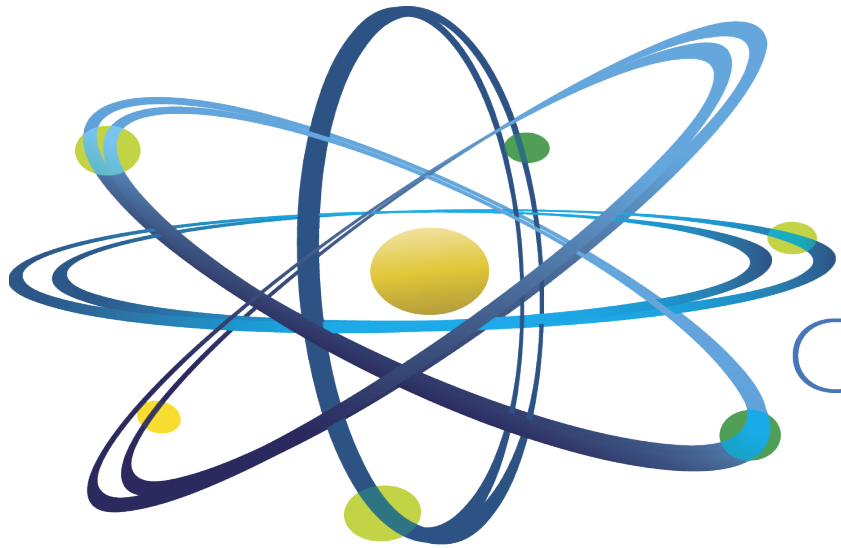
Intergovernmental Engagement

- Cooperative Agreements: In the last year of current 5-year funding agreements for SRGs and TRMTC
 - IWM expects to set up a new 5-year cycle to start Oct. 2021
- “Transportation Core Group”
 - Update call in Aug. 2020; held a call in Dec. 2020; next call planned for March/April 2021
- NTSF
 - Continued participation in the Planning Committee
 - SNF Rail/Routing AHWG
 - Developing a railcar safety inspection protocol
 - Engaging with representatives from the Association of State Rail Safety Managers and AAR
 - Expecting to review a revised Safety Compliance Oversight Plan (SCOP) from FRA during fall 2020
- Critical Infrastructure Partnership Advisory Council (CIPAC) – Working group on private SNF transport
 - DHS, NRC, and FRA leading the working group
 - IWM staff participating as an “observer”



National Transportation Stakeholders Forum

Questions?



Clean. **Reliable. Nuclear.**