



UNITED STATES
NUCLEAR WASTE TECHNICAL REVIEW BOARD
2300 Clarendon Boulevard, Suite 1300
Arlington, VA 22201

AGENDA
SUMMER BOARD MEETING
WEDNESDAY, JUNE 24, 2015

DENVER MARRIOTT WEST HOTEL
1717 DENVER WEST BLVD.
GOLDEN, CO 80401
Salons A-D

8:00 a.m. Call to Order and Introductory Statement
Rod Ewing, Board Chairman

8:15 a.m. DOE-HQ Opening Remarks – Transportation of Commercial Spent Nuclear Fuel (SNF)
John Herczeg, Department of Energy, Office of Nuclear Energy

- i. What research and development (R&D) is DOE doing to support the transportation of SNF? What are the key technical issues associated with transportation, particularly in light of the need for extended storage of SNF followed by transportation of SNF to an interim storage facility, and followed again by transportation to a geologic repository?
- ii. How is DOE coordinating the R&D needed to support the transportation of commercial SNF with the R&D needed to support the transportation of DOE-owned SNF? Does DOE plan to use a transportation equipment common to both commercial SNF and DOE-owned SNF, and if so, how does that plan affect the R&D needs?
- iii. What are the research priorities for fiscal year 2016?
- iv. Would the operation of a private consolidated interim storage facility, like the one proposed in Texas, affect DOE's transportation requirements and the associated requirements for R&D? If so, what would the effect be?
- v. What actions can DOE take relative to the transportation of commercial SNF to an interim storage facility or a repository without prior approval of the U.S. Congress?

8:35 a.m. Questions/Discussion

Note: These questions have been provided to the speakers in advance of the meeting to convey the Board's primary interests in the agenda topics and to aid in focusing the presentations.

8:45 a.m.

Preparation for Transportation of SNF Stored at Commercial Nuclear Power Plants

Melissa Bates, Department of Energy, Office of Nuclear Energy

- i. For the SNF inventory stored at operating and shutdown nuclear power plant sites, explain the following:
 - a. What operational or regulatory actions will be required prior to transportation of damaged and non-standard SNF from dry-storage systems at the sites?
 - b. What types of dry-storage canisters and casks holding SNF are not currently licensed for transportation and how much SNF do they contain? How much more SNF is planned to be loaded into canisters and casks not currently licensed for transportation?
 - c. What problems or challenges exist in designing and fabricating systems and components needed for transportation of SNF? (In particular, address the new transportation cask concept, new impact limiters, and the new rail car). How will the challenges be addressed? How are you incorporating consensus standards into the design of these components?
 - d. In the design of the new railcar for the transport of commercial SNF, what features of existing rail cars are being changed or upgraded and why?
- ii. For shutdown nuclear power plant sites:
 - a. Have transportation issues or challenges been identified in the most recent site assessments that are different from the issues and challenges noted in earlier site assessments?
 - b. What are DOE's priorities related to removing SNF from the sites and how do they correspond to the scope of the integrated waste management activities planned for fiscal year 2016?
 - c. How does the new Transportation Planning Framework document differ from the National Transportation Plan that was issued in April 2014, from a technical perspective?

- d. To support the planning for transportation of SNF from the shutdown sites, what progress and improvements have been made in the development of systems oriented tools using advanced information technology to aid with decision-making and stakeholder engagement?

9:35 a.m. Questions/Discussion

9:55 a.m. Break

10:10 a.m. Transportation of SNF: Concerns of Stakeholder Groups
Jim Williams, Western Interstate Energy Board

10:40 a.m. Questions/Discussion

11:00 a.m. Standardized Transportation, Aging, and Disposal (STAD) Canister Design
Josh Jarrell, Oak Ridge National Laboratory

- i. How does the STAD canister differ from earlier standardized canister concepts/designs considered by DOE and why are the differences required? Are the new STAD canister performance specifications different from previous specifications? If so, please explain.
- ii. AREVA and EnergySolutions completed feasibility studies for DOE in 2013, and each recommended that DOE develop three STAD canister sizes until a repository site is selected. Will DOE pursue other STAD canister sizes besides the small size (4-PWR assemblies)? Please explain.
- iii. What are DOE's plans to advance the STAD canister system through licensing before a repository is ready?
- iv. What is DOE's expected schedule for designing, fabricating, and licensing the STAD canister system (for one or more STAD canister sizes), and how does the schedule support DOE's strategy to begin operations at a pilot interim storage facility by 2021?
- v. What would be the operational impacts of using small STAD canisters at the spent fuel pools at operating reactors?
- vi. What would be the implications of repackaging SNF from large dry-storage systems into STAD canisters? If repackaging is required, what repackaging facilities does DOE consider would be needed and where would they be located?

- 11:30 a.m. Questions/Discussion**
- 11:50 a.m. Public Comments**
- 12:15 p.m. Lunch Break**
- 1:15 p.m. Panel Discussion—Implications of Dry Storage Canister Degradation for Future SNF Operations and Transportation to Support Interim Storage**

Robert Einziger, NWTRB (moderator)
David Enos, Sandia National Laboratories
Joe Carter, Savannah River National Laboratory
Steve Marschman, Idaho National Laboratory
Meraj Rahimi, Nuclear Regulatory Commission
Shannon Chu, Electric Power Research Institute

- i. Brief introduction describing canister degradation issues including the potential for chloride-induced stress corrosion cracking (CISCC) in canisters - moderator
- ii. 5-minute talk by each panelist describing ongoing and planned work to address the CISCC issue.
- iii. Panel Discussion:
 - a. What is being done to address potential degradation of dry storage canisters to ensure the canisters can perform their expected functions during transportation (if needed for moderator exclusion), storage at an interim storage facility (will the canister still function as a primary containment), and then transportation again to a repository (will the canister be able to be retrieved after additional storage)?
 - b. Beyond the joint EPRI/DOE project to assess CISCC in dry storage canisters, what R&D is planned to investigate other degradation mechanisms in dry storage canisters?
Example: are structural analyses being conducted to determine what size and number of canister cracks can be tolerated? Can this size crack be detected?
 - c. Due to the proximity of storage canisters to the ocean, proximity to cooling towers, or nearby use of road salt, is CISCC a potential issue at all sites?

- 2:00 p.m. Questions/Discussion**

2:20 p.m.

NRC Perspectives on SNF Transportation Issues

Meraj Rahimi, Nuclear Regulatory Commission, Division of Spent Fuel Management

- i. Some dry-storage canisters and casks holding SNF at operating and shutdown nuclear power plant sites are not licensed for transportation:
 - a. Please explain the work to be done and the potential for licensing for transportation the SNF canisters and casks that are not now licensed for transportation.
 - b. Please explain the action the Nuclear Regulatory Commission is taking in order to reconcile differences between the requirements of storage regulations (10CFR72) and transportation regulations (10CFR71) that make it difficult or impractical to transport some SNF held in dry-storage canisters and casks.
 - c. Please explain what guidance NRC is providing regarding license renewal for dry storage canisters that takes into account the need to eventually transport the canisters and store them again at an interim storage facility.

2:50 p.m.

Questions/Discussion

3:10 p.m.

Break

3:25 p.m.

**Transportation of Commercial SNF in Switzerland:
Experience and Lessons Learned**

Tony Williams, Axpo, Switzerland

4:05 p.m.

Questions/Discussion

4:25 p.m.

Public Comments

5:00 p.m.

Adjourn Public Meeting

5:00 p.m.–

6:00 p.m.

Poster Session (Keystone/Telluride Rooms)