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

AGENDA
SUMMER BOARD MEETING
WEDNESDAY, AUGUST 24, 2016

THE WESTIN WASHINGTON, DC CITY CENTER HOTEL
1400 M STREET, NW
WASHINGTON, DC 20005
202-429-1700
[NATIONAL BALLROOM AB]

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

8:15 a.m. **Department of Energy (DOE) Opening Remarks – DOE's Integrated Program for the Management and Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste**[1]
John Kotek, DOE, Office of Nuclear Energy (DOE-NE)

i. Describe the objectives and status of DOE's Integrated Waste Management System directed by the DOE-NE Office of Fuel Cycle Research and Development.

ii. How does DOE-NE coordinate its commercial SNF activities with DOE Office of Environmental Management (DOE-EM) activities to store, process, and prepare DOE-managed spent nuclear fuel (SNF) and high-level radioactive waste (HLW) for disposal?

   a. Do the DOE SNF Working Group and the DOE Tank Waste Corporate Board consider integration issues among DOE-NE, DOE-EM, and Naval Reactors? If so, please provide examples.

iii. What are the priorities in fiscal years 2017 and 2018 for the DOE Integrated Waste Management System?

iv. Generally, how does DOE-NE address recommendations from the Board? More specifically, how has DOE-NE addressed the Board's recommendations on storing and transporting casks and canisters for commercial SNF? See the Board letters to DOE-NE dated:

   a. January 29, 2014 (re Board Meeting of Nov. 20, 2013, on DOE- NE research and development programs).

[1] Note: Questions were provided to the speakers in advance to convey the Board's primary interests in the agenda topics and to aid in focusing their presentations.

b. October 10, 2014 (re Board Meeting of Aug. 6, 2014, on DOE SNF management).
c. August 31, 2015 (re Board Meeting of Jun. 24, 2015, on commercial SNF transportation).

8:45 a.m. **Questions/Discussion**

9:00 a.m. **Containers for Commercial Spent Nuclear Fuel[2]**
("container" is used generically to mean canister, cask, or overpack)
Joseph Carter, Savannah River National Laboratory

i. The commercial nuclear power industry uses more than 25 types of dry-storage casks and canisters for commercial SNF, and the number is growing. In addition, DOE is evaluating several options for "standardized" containers that may be used for storing, transporting, or disposing of commercial SNF. The standardized containers include small, medium, and large Standardized Transportation, Aging, and Disposal (STAD) canisters. Reusable, bolted-lid transportation-only cask concepts were also recently developed (designs by AREVA and EnergySolutions). Briefly describe the in-use containers and recently proposed container concepts. Discuss the integration issues known or anticipated—in particular, focus on:

   a. Challenges presented by the physical dimensions and capacity of the containers.
   b. The scope of commercial SNF types that can be loaded.
   c. The ability to accommodate damaged SNF (in "damaged fuel cans").
   d. Challenges for licensing for storage and transportation.
   e. Limitations for the transportation casks and trailers/railcars to be used (if applicable) and the status of design and procurement of the transportation casks.

ii. Explain whether any of the SNF containers may exceed storage or transportation limits for temperature, criticality safety, radiation dose, or weight. If the limits are challenged or exceeded, how will containers be managed and what is being done to mitigate the problems in the future?

9:30 a.m. **Questions/Discussion**

[2] This and the following presentations will consider containers for nuclear waste storage and transportation, but will not include disposal overpacks that may be used when disposing of wastes in a deep geologic repository.

9:50 a.m. **System Analysis Tools used to Evaluate the Integrated Waste Management System**
Josh Jarrell, Oak Ridge National Laboratory

i. What is the status of the development and implementation of DOE's system analysis tools for evaluating options for commercial SNF management?

   a. Explain how these tools can be used to examine the pros and cons of using different types and sizes of SNF canisters at different points in the back end of the fuel cycle (*e.g.*, storage, transportation, and disposal).
   b. Has DOE-NE assessed the time, cost, dose, and radioactive waste implications of repackaging SNF at different locations? If so, what are the results of the assessment?
   c. Did DOE-NE coordinate with DOE-EM in developing START (the Stakeholder Tool for Assessing Radioactive Transportation) and use lessons learned from DOE-EM's Web-based Transportation Geographic Interface System (WebTRAGIS)?
   d. In the early application of these tools, has DOE learned anything significant about the projected integration and management of SNF storage and transportation systems?

10:15 a.m. **Questions/Discussion**

10:30 a.m. **Break**

10:45 a.m. **Nuclear Industry Perspective on Commercial SNF Management and Transportation**
Kris Cummings, Nuclear Energy Institute

i. Discuss the nuclear industry's perspective on DOE efforts to integrate commercial SNF and DOE waste management and transportation. What are the perceived impacts to the nuclear industry of integrating defense and non-defense wastes? In particular, what is the impact on the industry's ongoing efforts to package and store commercial SNF?

ii. If DOE introduces relatively small standardized canisters for commercial SNF to gain efficiencies in the waste management system, how will this action be received by industry?

iii. It may not be possible to dispose of SNF in the large canisters being used by utilities today and DOE has developed the initial concepts for a range of smaller canister designs. What could be done to minimize or offset the impact of loading smaller canisters at nuclear power plant sites to avoid the need for repackaging later?

11:15 a.m. **Questions/Discussion**

11:35 a.m. **Public Comment**

12:00 p.m. **Lunch Break**

1:00 p.m. **DOE-EM Program Overview; Integration of DOE-managed SNF and HLW**
Mark Whitney, DOE, Office of Environmental Management

i. Cleanup Mission.
   a. What is DOE-EM's legacy cleanup mission?
   b. How does management of DOE-EM's SNF and HLW help DOE-EM achieve cleanup success?
   c. What is the current status and key milestones relevant to DOE-EM's tank waste management and SNF management activities?

ii. Office of Environmental Management Reorganization.
   a. How does the recent DOE-EM reorganization impact oversight and implementation of its key SNF and HLW mission and functions?

iii. Current plans for packaging DOE-managed SNF and HLW.
   a. What are DOE-EM's current plans for packaging its SNF and HLW following termination of the Yucca Mountain project and start of a new consent-based siting process?

1:15 p.m. **DOE-EM Transportation Overview and Integration**
Mike Wangler, DOE, Office of Environmental Management

i. Transportation Office Overview & Integration.
   a. What is the overall scope and responsibilities of DOE-EM's packaging and transportation activities?
   b. What organizations within and external to the Department integrate with DOE-EM on packaging and transportation activities?
   c. What shipments of SNF and HLW have occurred or are planned?
   d. What integration occurs for such shipments?
   e. What factors, based on DOE-EM's past operational experience, are important to consider in meeting future needs for transport of DOE-managed SNF and HLW as part of an integrated waste management system?

ii. WebTRAGIS demonstration and discussion of its capabilities and usage.

1:45 p.m. **DOE-Managed SNF Integration**
Ken Picha, DOE, Office of Environmental Management

i. DOE-EM Complex-wide SNF Overview.
   a. What current activities related to DOE-managed SNF management are occurring at DOE-EM sites?

ii. Integration of Near-Term Activities at Idaho.
   a. How are SNF-related activities at DOE sites being integrated? Focus on how SNF activities at DOE-Idaho demonstrate integration between DOE-EM, DOE-NE, and the Navy.

iii. Planning for and Integration Supporting DOE-managed SNF Disposition.
   a. What are the different canister designs and characteristics for packaging DOE-managed SNF for disposal in an integrated, commercial/defense waste management system developed by the previous repository organization?
   b. What are DOE's plans for packaging SNF for transportation and disposal in a future repository?
   c. What continuing or new integrating activities and tools are available to support future disposition of SNF?

2:10 p.m. **HLW Integration**
Ken Picha, DOE, Office of Environmental Management

i. DOE-managed HLW Overview.
   a. What current activities related to tank waste management are occurring at DOE-EM sites?
   b. What are the different canister designs and characteristics for disposal of immobilized HLW for disposal?

ii. Tank Waste Integration among DOE sites.
   a. How are HLW-related activities at DOE sites being integrated?

2:35 p.m. **Questions/Discussion**

2:55 p.m. **Break**

3:10 p.m. **U.S. Navy Spent Nuclear Fuel Transportation**
Barry Miles, U.S. Navy

i. Describe the U.S. navy program for transporting Naval SNF.
   a. What are the primary organizations with which the Navy integrates?

b. What are the biggest challenges to transporting Naval SNF?
c. What lessons learned can the Navy offer DOE?

3:35 p.m. **Questions/Discussion**

3:50 p.m. **Planning for a Separate Repository for Defense Waste**
Andrew Griffith, DOE, Office of Nuclear Energy

i. Describe the plans, objectives, and status of the development of a separate repository for defense waste.

4:15 p.m. **Questions/Discussion**

4:35 p.m. **Public Comments**

5:00 p.m. **Adjourn Public Meeting**

5:00 – 6:00 p.m. **Poster Session** [NATIONAL BALLROOM C]

- Posters on the characteristics of canisters and casks for commercial SNF.
- Posters on the integrated system analysis tools being used by DOE-NE to evaluate the storage and transportation of commercial SNF.