



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

Summer 2024 Board Meeting

August 29, 2024

Crown Plaza North Augusta
1060 Center Street
North Augusta, SC

<https://preconvirtual.com/nwtrb-gov-08-29-2024-2/>

Thursday, August 29, 2024 (Hampton Terrace 3)

8:00 a.m. EDT **Call to Order and Introductory Statement**
Nathan Siu, Board Chair

8:15 a.m. EDT **U.S. Department of Energy (DOE) Office of Spent Fuel and High-Level Waste Disposition Program Update**
Paul Murray, Deputy Assistant Secretary for Spent Fuel and High-Level Waste Disposition, Office of Nuclear Energy (DOE-NE)

TOPICS/QUESTIONS TO BE ADDRESSED:

- How are you reprioritizing DOE-NE's storage, transportation, and disposal research and development (R&D) activities (e.g., what factors are you using to determine priorities) and what is the basis for the change in priorities?
- What is the status of the reprioritization effort?
- What public demonstration activities are being considered or planned and for what purpose?
- What is DOE-NE's latest information on a federal consolidated interim storage facility and consent-based siting activities and what are the near-term milestones?
- On what spent nuclear fuel (SNF) disposition topics is DOE-NE collaborating, or planning to collaborate, with DOE's Office of Environmental Management (DOE-EM) (e.g., waste acceptance criteria, disposal options for DOE SNF, others)?

8:45 a.m. EDT *Questions, discussion*

9:05 a.m. EDT **Overview of DOE SNF Storage, Transportation, and Plans for Disposal: Program Successes, Challenges, and DOE's Management Plans**
Jomaries Rovira, DOE-EM, Office of Nuclear Materials

TOPICS/QUESTIONS TO BE ADDRESSED:

- Please summarize SNF storage facilities and SNF inventories at the Hanford Site, Idaho National Laboratory, Fort St. Vrain, and the Savannah River Site.

Note: The 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.

- What additions (e.g., future domestic research reactor SNF receipts) or reductions (e.g., processing of SNF or re-classification) to the SNF inventory are expected at each of these sites?
- For each site, how much SNF will need to be packaged for transportation and disposal in a deep geologic repository and how many DOE standardized canisters will be needed?
- Please provide a synopsis of the SNF Working Group and its accomplishments.
- What constraints impact DOE’s SNF management activities?
 - Please identify pertinent state agreements and records of decisions from National Environmental Policy Act (NEPA) evaluations
 - Please identify pertinent external-to-DOE guidance (e.g., NWTRB recommendations)
- What are DOE-EM’s challenges (e.g., aging infrastructure, need for packaging capabilities at sites, U.S. Nuclear Regulatory Commission [NRC] licensing strategy for DOE standardized canisters, and geologic repository uncertainty) in managing and planning for disposal of its SNF?
- What are DOE’s strategies, plans, and evaluations for addressing its challenges in managing and planning for disposal of its SNF?

9:45 a.m. EDT Questions, discussion

10:00 a.m. EDT Break

10:10 a.m. EDT DOE-EM SNF Technology Development Program
Rodrigo Rimando, DOE-EM, Office of Technology Operations
Elmar Eidelpes, Idaho National Laboratory
Gordon Petersen, Idaho National Laboratory

TOPICS/QUESTIONS TO BE ADDRESSED:

- What is the purpose and scope of the technology development program (e.g., focusing on DOE SNF storage issues or also addressing transportation and disposal issues for DOE SNF) and what are the current tasks?
- Prior to 2021, DOE’s technology development program focused on developing the technical basis for extended dry storage of aluminum-clad SNF (ASNF), partially addressing the NWTRB’s 2017 recommendations on management and disposal of DOE SNF. Which ASNF tasks are closed, and which tasks are ongoing?
- How has DOE addressed longer durations of storage in DOE standardized canisters (e.g., 100 years) and how can DOE’s existing technical basis be used to support longer storage periods prior to disposal for DOE SNF?
- How has DOE addressed the NWTRB’s recommendations on packaging of SNF and the use of DOE standardized canisters (e.g., materials packaged with SNF such as structural inserts using advanced neutron absorbers and gadolinium-bearing pellets to control criticality in a repository after disposal)?

10:50 a.m. EDT Questions, discussion

11:10 a.m. EDT Accelerated Basin De-inventory Project at the Savannah River Site
James Therrell, Savannah River Nuclear Solutions

TOPICS/QUESTIONS TO BE ADDRESSED:

- Please provide a synopsis of the Accelerated Basin De-inventory Project.
- What are the major constraints on processing L-Basin SNF through H-Canyon?

- What are the groups of SNF identified for processing through the project and what are the challenges for processing each group through H-Canyon?
- How has DOE analyzed the impacts of adding these SNF groups to the material stream to the Defense Waste Processing Facility to ensure that the high-level radioactive waste (HLW) glass formulation meets design or waste acceptance requirements (e.g., fissile loading or glass compositional limits) for vitrified HLW?
- How will the addition of SNF processed through the project affect the expected number of HLW glass canisters and needed HLW glass canister storage (e.g., is there adequate capacity for storing any additional canisters)?
- What are the groups of SNF that are not expected to be processed during the project that will require continued storage (i.e., beyond 2034) in L-Basin?
- What capabilities developed or used during the Accelerated De-inventory Project could be used to facilitate long-term management of SNF at the Savannah River Site?

11:45 a.m. EDT Questions, discussion

12:00 p.m. EDT Lunch

1:00 p.m. EDT SNF Management at the Savannah River Site L-Basin Facility

Kiran Karanth, Savannah River Nuclear Solutions

Alexis Schuchmann, Savannah River Nuclear Solutions

TOPICS/QUESTIONS TO BE ADDRESSED:

- What are the capabilities at the L-Basin Facility to manage (e.g., prepare stored SNF for processing in H-Canyon or package SNF for dry storage) and store SNF (e.g., types and amounts of stored SNF and storage capacities)?
- What is the projection for SNF receipts, SNF transfers to H-Canyon, and SNF inventory in L-Basin?
- What aging management activities are being conducted and how is container corrosion and SNF degradation being monitored in L-Basin?
- What progress has been made to implement the augmented monitoring and condition assessment program?
- Are microbial growths still active in L-Basin? If so, what actions are being taken to mitigate or prevent microbial growth?
- What capabilities or modifications to L-Basin will be necessary to accommodate the Accelerated Basin De-inventory Project, expected future receipts of SNF and storage after completion of the de-inventory project, and to facilitate packaging remaining wet-stored SNF for dry storage?

1:40 p.m. EDT Questions, discussion

2:00 p.m. EDT SNF Management Alternatives at the Savannah River Site for the Remaining SNF

Steven Vitto, DOE-EM, Office of Nuclear Materials

Anna d'Entremont, Savannah River National Laboratory

Xiankui Zhu, Savannah River National Laboratory

TOPICS/QUESTIONS TO BE ADDRESSED:

- Is DOE considering management alternatives for the SNF held in L-Basin beyond 2034? If so, what are the alternatives?
How is DOE accounting for transportation and disposal of SNF (e.g., types of packages and acceptability of packaged SNF for disposal)?

- What criteria is DOE considering for evaluating the management alternatives?
- What is the purpose and scope of the proposed ASNF dry storage pilot using High Flux Isotope Reactor SNF?
- How would the ASNF Dry Storage Pilot demonstration, preliminarily expected to use dry transfers between the transportation package and the storage package, help the Savannah River Site develop the capabilities to dry and package SNF that will remain in the L-Basin Facility after completion of the Accelerated Basin De-inventory Project or for future SNF receipts?

2:45 p.m. EDT *Questions, discussion*

3:05 p.m. EDT **Break**

3:15 p.m. EDT **Idaho Site SNF Management: Activities and Plan, Part I**

Nick Balsmeier, DOE Idaho Operations Office

Steve Wahnschaffe, DOE Idaho Operations Office

TOPICS/QUESTIONS TO BE ADDRESSED IN PART I:

- Please summarize the DOE SNF storage facilities at the Idaho site and the SNF inventory at each facility.
- What are the ongoing SNF management activities?
- How much SNF will need to be packaged for transportation and disposal in a deep geologic repository and how many DOE standardized canisters will be needed (e.g., how much SNF will be processed via electrometallurgical treatment or reclassified as not SNF)?
- How will packaging and storage of DOE standardized canisters facilitate their transport and disposal (e.g., if DOE stores multiple DOE standardized canisters in a single storage container, is the storage container transportable and disposable without removing DOE standardized canisters)?
- What is the Idaho SNF management plan (e.g., approach, proposed path forward, challenges, notional schedule)?

3:45 p.m. EDT *Questions, discussion*

4:00 p.m. EDT **Idaho Site SNF Management: Activities and Plan, Part II**

Will Anderton, Idaho Environmental Coalition

TOPICS/QUESTIONS TO BE ADDRESSED IN PART II:

- What infrastructure (e.g., new or upgrade to existing facilities) is needed to implement the Idaho SNF management plan?
- What is the role of the Road-Ready Demonstration in the overall Idaho SNF management plan?
 - Please provide a synopsis of the project, including its goals and timeline.
 - What is the anticipated packaging process?
 - What kinds of monitoring will be employed with packaged SNF?

4:30 p.m. EDT *Questions, discussion*

4:45 p.m. EDT **Public Comments**

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