



UNITED STATES
NUCLEAR WASTE TECHNICAL REVIEW BOARD
2300 Clarendon Boulevard, Suite 1300
Arlington, VA 22201
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AGENDA
Winter 2022 Board Meeting
March 1–2, 2022
Virtual Meeting

<https://preconvirtual.com/nwtrb-gov-03-01-2022/>

Tuesday, March 1, 2022

12:00 p.m. EST **Call to Order and Introductory Statement**
Jean Bahr, Board Chair

12:15 p.m. EST **Update on DOE’s Dual-Purpose Canister (DPC) Direct Disposal Activities**
Timothy Gunter, U.S. DOE, Office of Nuclear Energy
Geoff Freeze, Sandia National Laboratories

TOPICS/QUESTIONS TO BE ADDRESSED:

- What are the objectives and scope of DOE’s research and development (R&D) activities on disposal of DPCs and the related waste form characteristics and performance activities?
- In these program areas, what are the recent major accomplishments and near- and long-term major technical priorities?

12:35 p.m. EST *Questions, discussion*

12:55 p.m. EST **Repository-Scale Performance Assessment Incorporating Post-Closure Criticality**
Laura Price, Sandia National Laboratories

TOPICS/QUESTIONS TO BE ADDRESSED:

- What are the objectives and scope of the probabilistic post-closure DPC criticality consequence analyses?
- What repository concepts and post-closure scenarios were considered and what assumptions were used in these analyses?
- What are the recent major accomplishments and how have the performance assessment results informed planned near- and long-term technical activities?
- How are the probabilities of events occurring (e.g., waste package breach, basket degradation, etc.) and their uncertainties being obtained and treated?

1:35 p.m. EST *Questions, discussion*

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.

1:55 p.m. EST **Break**

2:10 p.m. EST **Cladding Degradation Modeling Development**
Brady Hanson, Pacific Northwest National Laboratory
Laura Price, Sandia National Laboratories

TOPICS/QUESTIONS TO BE ADDRESSED:

- What is the conceptual framework for source term processes in the Geologic Disposal Safety Assessment framework?
- What are the objectives and scope of the cladding degradation modeling and spent nuclear fuel testing activities and how are they integrated with criticality evaluations for DPC disposal, and with other disposal, storage, and transportation R&D activities?
- What cladding degradation processes are included in the source term model and what assumptions are incorporated in the cladding degradation model?
- What are the recent major accomplishments and how have the results informed planned near- and long-term technical activities?
- How is the chemistry associated with the various components (e.g., fuel, cladding, basket, neutron poison, waste package, buffer, rock, etc.) being treated?

2:50 p.m. EST *Questions, discussion*

3:10 p.m. EST **Summary and Status of DOE's Storage and Transportation Activities**
Ned Larson, U.S. DOE, Office of Nuclear Energy

TOPICS/QUESTIONS TO BE ADDRESSED:

- In the 5-year storage and transportation R&D plan, what technical gaps are DOE addressing and how are they integrated with DOE's disposal R&D activities and the consolidated interim storage effort?
- What are the objectives and scope of DOE's R&D activities on welded canister atmospheric corrosion and canister failure consequence analysis?
- In these program areas, what are the recent major accomplishments and near- and longer-term planned activities?
- Are there any R&D activities ongoing or planned for casks versus canisters?
- What R&D is ongoing or planned for cask systems that may not meet transportation criticality requirements?

3:30 p.m. EST *Questions, discussion*

3:50 p.m. EST **Spent Nuclear Fuel Interim Storage Canister Corrosion and Surface Environment Investigations**
Charles Bryan and Rebecca Schaller, Sandia National Laboratories

TOPICS/QUESTIONS TO BE ADDRESSED:

- What are the objectives and scope of the canister corrosion and surface environment investigations?
- What are the overall conclusions and lessons learned from DOE R&D regarding canister corrosion during long-term dry storage of SNF?
- What are the remaining scientific and technical issues and associated key uncertainties and the plan to address them?
- How is this effort integrated with a similar effort to understand canister performance in a repository under a direct disposal scenario?

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

4:50 p.m. EST Public Comments

5:00 p.m. EST Adjourn Day 1

Wednesday, March 2, 2022

12:00 p.m. EST Call to Order
Jean Bahr, Board Chair

12:05 p.m. EST Aerosol Transmission
Sam Durbin, Sandia National Laboratories

TOPICS/QUESTIONS TO BE ADDRESSED:

- What are the objectives and scope of the canister failure consequences investigations and how is the aerosol transmission study integrated with other storage and transportation R&D gap studies?
- What are the overall conclusions and lessons learned from DOE R&D regarding aerosol transmission through simulated stress corrosion cracks?
- What are the remaining scientific and technical issues and associated key uncertainties and the plan to address them?
- How is the aerosol source term going to be evaluated?

12:35 p.m. EST *Questions, discussion*

12:55 p.m. EST Hanford Lead Canister Overview and Status Presentation
Nick Klymyshyn, Pacific Northwest National Laboratory
Gary Cannell, Fluor/Central Plateau Cleanup Company

TOPICS/QUESTIONS TO BE ADDRESSED:

- What are the objectives and scope of the Hanford Lead Canister project and what is the status of project activities?
- How does Hanford Lead Canister project support DOE's integrated waste management program and how is the project integrated with other storage and transportation R&D gap studies?
- What are the remaining scientific and technical issues and associated key uncertainties and the plan to address them?

1:25 p.m. EST *Questions, discussion*

1:45 p.m. EST Break

2:00 p.m. EST Updated Waste Management System Analysis Tool Requirements and Enhancements

Robby Joseph, Idaho National Laboratory

TOPICS/QUESTIONS TO BE ADDRESSED:

- What is the status of the development and implementation of DOE's system analysis tool for evaluating options for an integrated waste management system and how will the tool be used to support DOE's consolidated interim storage effort?
- What capabilities have been implemented, what cases have been analyzed, and what are the lessons learned?
- What are the remaining capabilities that need to be developed and the plan to address them?
- Is the capability of completing constrained, multi-objective optimization being included as a requirement?

2:30 p.m. EST Questions, discussion

2:50 p.m. EST Current Functions and Capabilities of DOE's Stakeholder Tool for Assessing Radioactive Transportation (START)

Erica Bickford, U.S. DOE, Office of Nuclear Energy

TOPICS/QUESTIONS TO BE ADDRESSED:

- What is the status of START development, what capabilities have been implemented, including any public version, and how will DOE use START to inform stakeholders?
- How will DOE use START for evaluating options for an integrated waste management system, and how will DOE use START to support DOE's consolidated interim storage effort?
- What are the remaining capabilities that need to be developed and the plan to address them?
- How have stakeholders been included in defining START requirements?

3:20 p.m. EST Questions, discussion

3:40 p.m. EST Update on Consent-Based Siting

Alisa Trunzo, U.S. DOE, Office of Nuclear Energy

TOPICS/QUESTIONS TO BE ADDRESSED:

- What are the objectives and scope of DOE's consent-based siting efforts and what is the status of project activities?
- What is DOE's current overall strategy for an integrated waste management system, what types of facilities does it include, and are all facilities already authorized by law?
- What is DOE's 2017 draft consent-based siting process and how does it relate to this current effort?
- What major themes related to consent-based siting for nuclear waste facilities and views on designing a consent-based siting process were expressed during the 2016 public comment period and how do they relate to the December 2021 request for information?
- How is DOE's effort on consent-based siting integrated with DOE's disposal, storage, transportation, and integrated waste management system R&D efforts?
- How are previous experiences in siting hazardous facilities, either by US or foreign governments or industry, being used as source of knowledge?

4:20 p.m. EST *Questions, discussion*

4:45 p.m. EST Public Comments

5:00 p.m. EST Adjourn Public Meeting