



UNITED STATES
NUCLEAR WASTE TECHNICAL REVIEW BOARD
2300 Clarendon Boulevard, Suite 1300
Arlington, VA 22201
703-235-4473

AGENDA

Fall 2020 Board Meeting

December 2-3, 2020

Virtual Meeting

<https://preconvirtual.com/nwtrb-gov-december/>

Wednesday, December 2, 2020

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

12:15 p.m. EST **U.S. Department of Energy (DOE) Disposal Research Program:
Program Overview, Purpose, Scope, and Goals**
Timothy Gunter, DOE, Office of Nuclear Energy

QUESTIONS TO BE ADDRESSED:

- What are the objectives of the program?
- How is DOE developing the technical bases to achieve its objectives and assessing the adequacy of its efforts?
- What are the reference cases and disposal concepts under consideration?
- Which DOE disposal concepts differ from other nations' disposal concepts and how will the technical bases for those differing concepts be developed and demonstrated?
- How has DOE used the Research and Development (R&D) Roadmap, R&D Roadmap Update, and the recent Disposal Research R&D 5-Year Plan to guide its program?

12:35 p.m. EST Questions, discussion

12:50 p.m. EST **Technical Approach and Prioritization of Activities**
David Sassani, Sandia National Laboratories

QUESTIONS TO BE ADDRESSED:

- How has DOE identified technical information needs and knowledge gaps?
- How has DOE prioritized its activities to address the gaps?
- How are performance assessments and the Geologic Disposal Safety Assessment framework integrated into the technical approach and used in prioritization of activities?
- What lessons have been learned from the R&D Roadmap efforts?

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.

1:30 p.m. EST Questions, discussion

1:50 p.m. EST Break

2:05 p.m. EST Crystalline Host Rock: Disposal Concepts and Research & Development Activities

Yifeng Wang, Sandia National Laboratories

QUESTIONS TO BE ADDRESSED:

- What are DOE's disposal concepts?
- What are DOE's post-closure safety strategies?
- What are the key characteristics of the host rock and the availability of technology for characterization?
- What are the gaps in understanding?
- What activities is DOE pursuing to address the gaps?
- How are activities in a specific cross-cut research and development area integrated with other disposal research activities?

2:35 p.m. EST Questions, discussion

2:55 p.m. EST Salt Host Rock: Disposal Concepts and Research & Development Activities

Kris Kuhlman, Sandia National Laboratories

QUESTIONS TO BE ADDRESSED:

- What are DOE's disposal concepts?
- What are DOE's post-closure safety strategies?
- What are the key characteristics of the host rock and the availability of technology for characterization?
- What are the gaps in understanding?
- What activities is DOE pursuing to address the gaps?
- How are activities in a specific cross-cut research and development area integrated with other disposal research activities?

3:25 p.m. EST Questions, discussion

3:45 p.m. EST Break

3:55 p.m. EST Argillite Host Rock: Disposal Concepts and Research & Development Activities

Carlos Jové Colón, Sandia National Laboratories

QUESTIONS TO BE ADDRESSED:

- What are DOE's disposal concepts?
- What are DOE's post-closure safety strategies?
- What are the key characteristics of the host rock and the availability of technology for characterization?
- What are the gaps in understanding?
- What activities is DOE pursuing to address the gaps?
- How are activities in a specific cross-cut research and development area integrated with other disposal research activities?

- 4:25 p.m. EST Questions, discussion
- 4:45 p.m. EST Public Comments**
- 5:00 p.m. EST Adjourn**

Thursday, December 3, 2020

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

- 12:05 p.m. EST Geologic Disposal Research Strategies from Abroad: Examples from IGD-TP (Implementing Geological Disposal of radioactive waste Technology Platform) and the United Kingdom**
Irina Gaus, (Nagra, Switzerland) and Lucy Bailey (Radioactive Waste Management, United Kingdom)

QUESTIONS TO BE ADDRESSED:

- What is the status of the organization's program and research strategy?
- What is the scope and purpose of the strategy?
- How will the strategy be implemented?
- What are the key aspects of the strategy and the activities that will be addressed?
- How will progress in implementing the strategy be assessed?

- 12:45 p.m. EST Questions, discussion

- 1:15 p.m. EST Prioritization of Cross-Cutting Research and Development Activities: Unsaturated Alluvium Reference Case, Disposal of Dual-Purpose Canisters, and Geologic Disposal Safety Assessment**
Emily Stein, Sandia National Laboratories

QUESTIONS TO BE ADDRESSED:

- What are the gaps in understanding?
- What activities is DOE pursuing to address the gaps?
- What is the status of the fuel matrix dissolution modeling effort?
- How are activities in a specific cross-cut research and development area integrated with other disposal research activities?
- In addition, for the unsaturated alluvium reference case, what is the disposal concept and what is its status of development relative to the other reference cases?

- 1:45 p.m. EST Questions, discussion

- 2:05 p.m. EST Break**

2:35 p.m. EST Prioritization of Cross-Cutting Research and Development Activities: Engineered Barrier System Overview and the HotBENT Experiment at Grimsel Test Site

Ed Matteo, Sandia National Laboratories and LianGe Zheng, Lawrence Berkeley National Laboratory

QUESTIONS TO BE ADDRESSED:

- What are the gaps in understanding?
- What activities is DOE pursuing to address the gaps?
- How are activities in a specific cross-cut research and development area integrated with other disposal research activities?
- What is the status of and timeline for the HotBENT experiment?
- Which disposal concepts and reference cases does the HotBENT experiment support?
- Which gaps in knowledge will HotBENT address and how will the information obtained resolve the gaps?

3:15 p.m. EST Questions, discussion

3:35 p.m. EST Prioritization of International Activities and Moving Forward: Disposal Research R&D 5-Year Plan

Jens Birkholzer, Lawrence Berkeley National Laboratory and David Sassani, Sandia National Laboratories

QUESTIONS TO BE ADDRESSED:

- What factors are considered in prioritizing international activities?
- How are the international activities integrated with the other non-site-specific disposal activities?
- In addition to R&D activities, are collaborations with other countries' demonstration activities considered?
- What is the purpose of the Disposal Research R&D 5-Year Plan?
- What experiments are being conducted to validate the fuel matrix degradation model?
- How will the Disposal Research R&D 5-Year Plan be implemented?
- How are the disposal research activities integrated with other DOE Office of Spent Fuel & Waste Science and Technology activities and with Office of Integrated Waste Management activities?
- Is there any work being done by other DOE offices that could provide valuable input to DOE's disposal R&D program?

4:15 p.m. EST Questions, discussion

4:35 p.m. EST Public Comments

5:00 p.m. EST Adjourn