



UNITED STATES
NUCLEAR WASTE TECHNICAL REVIEW BOARD
2300 Clarendon Boulevard, Suite 1300
Arlington, VA 22201
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AGENDA
Summer 2020 Board Meeting
July 27–28, 2020
Virtual Meeting
<http://preconvirtual.com/nwtrb-gov>

Monday, July 27, 2020

12:30 p.m. EDT **Call to Order and Introductory Statement**
Jean Bahr, Board Chair

12:45 p.m. EDT **Department of Energy (DOE) Opening Remarks**
William Boyle, DOE, Office of Nuclear Energy

1:00 p.m. EDT *Questions, discussion*

1:15 p.m. EDT **Review of, and Update on, Past Studies on Technical Feasibility of Dual-Purpose Canister Direct Disposal**
Timothy Gunter, DOE, Office of Nuclear Energy

QUESTIONS TO BE ADDRESSED:

- Why is DOE evaluating the potential disposal in a geologic repository of spent nuclear fuel (SNF) in dual-purpose canisters (DPCs) without first repackaging the SNF into other containers?
- What were the objectives of DOE studies on disposal of SNF in DPCs and what research and development (R&D) activities were undertaken?
- What were the key findings from those studies and what follow up activities are ongoing or planned?

1:45 p.m. EDT *Questions, discussion*

2:00 p.m. EDT **Break**

2:30 p.m. EDT **Technical Basis for Engineering Feasibility and Thermal Management**
Ernest Hardin, Sandia National Laboratories

QUESTIONS TO BE ADDRESSED:

- What factors and operational aspects are important to assessments of the technical feasibility of disposal of SNF in DPCs?

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 repository concepts were considered in DOE's technical feasibility assessments?
- What key conclusions and recommendations resulted from these assessments?

3:10 p.m. EDT Questions, discussion

3:30 p.m. EDT Ongoing Research and Development: Dual-Purpose Canister Reactivity Analysis

Kaushik Banerjee, Oak Ridge National Laboratory

QUESTIONS TO BE ADDRESSED:

- What are the objectives of DOE's DPC reactivity analyses?
- What tools, models, and methodologies are used for these analyses?
- How are the models validated?
- What are the key results and conclusions from these analyses?

4:10 p.m. EDT Questions, discussion

4:30 p.m. EDT Public Comments

5:00 p.m. EDT Adjourn

Tuesday, July 28, 2020

12:30 p.m. EDT Ongoing Research and Development: Consequences of Nuclear Criticality in Dual-Purpose Canisters After Disposal

Laura Price, Sandia National Laboratories

QUESTIONS TO BE ADDRESSED:

- What are the objectives of DOE's analyses of the consequences of nuclear criticality in DPCs after disposal in a geologic repository?
- What repository concepts and postclosure scenarios were considered and what assumptions were used in these analyses?
- What are the key results and conclusions from these analyses?

1:10 p.m. EDT Questions, discussion

1:30 p.m. EDT Ongoing Research and Development: Filler Approach and Testing

Kaushik Banerjee, Oak Ridge National Laboratory

QUESTIONS TO BE ADDRESSED:

- What are the key attributes of materials that can be used to fill void spaces in DPCs and mitigate the potential for nuclear criticality?
- What are the technical bases for selecting the fill materials currently being evaluated by DOE?

- How are the filler materials being evaluated?
- How are the models used in simulating DPC filling validated?
- What are the preliminary results of DOE's filler testing and what further work is planned?
- What negative consequences, if any, would there be on repository performance from introducing filler materials?

2:00 p.m. EDT Questions, discussion

2:15 p.m. EDT Break

2:45 p.m. EDT Ongoing Research and Development: Cement Filler Testing and Analysis

Mark Rigali, Sandia National Laboratories

QUESTIONS TO BE ADDRESSED:

- What are the advantages and disadvantages of cement-based materials as DPC filler materials?
- What cement-based materials were tested and how were these evaluated?
- What are the preliminary results and what further testing of cement fillers is planned?

3:15 p.m. EDT Questions, discussion

3:30 p.m. EDT Cross-cutting Research and Development

Geoff Freeze, Sandia National Laboratories and Rob Howard, Oak Ridge National Laboratory

QUESTIONS TO BE ADDRESSED:

- What technical issues related to extended storage, transportation, and geologic disposal of SNF could be impacted by disposal of SNF in DPCs?
- What are DOE's current plans to address these technical issues?

3:50 p.m. EDT Questions, discussion

4:00 p.m. EDT Public Comments

4:30 p.m. EDT Adjourn Public Meeting