



U.S. Nuclear Waste Technical Review Board

**NWTRB**  
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# U.S. Nuclear Waste Technical Review Board

Presented at:

**Summer 2018 Board Meeting**

Presented by:

**Dr. Jean M. Bahr, Chair**

**June 13, 2018**

**Idaho Falls, Idaho**

# About the Board

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The U.S. Nuclear Waste Technical Review Board (Board) was established by Congress as an independent federal agency in the 1987 amendments to the Nuclear Waste Policy Act (NWPA).



# Board Member Appointment



NATIONAL ACADEMY  
OF SCIENCES



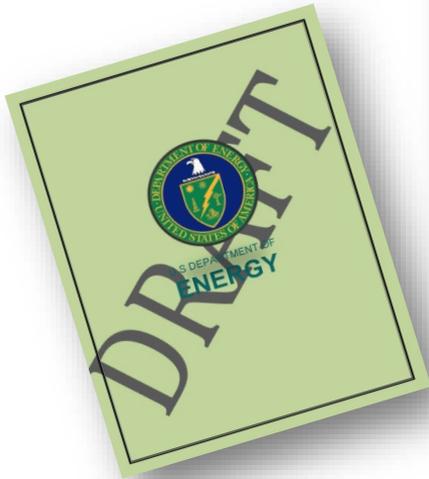
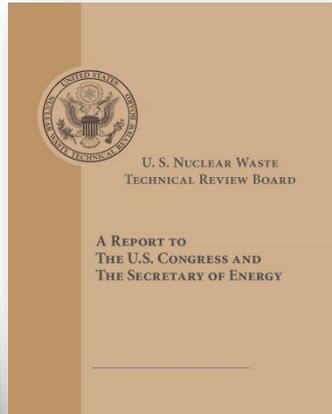
- At full strength, the Board is composed of eleven members
- Board members are nominated by the National Academy of Sciences and appointed by the President to four-year terms
- Terms are staggered, and Board members continue to serve until they are reappointed or replaced



# About the Board

## The Board:

- Conducts independent and objective peer review of DOE activities
- Reports its findings, conclusions, and recommendations to the U.S. Congress and the Secretary of Energy
- By law, has access to draft DOE documents—according to the Legislative History of the NWPAA, so that Board recommendations can be made during decision-making, not after the fact
- Provides congressional testimony at the invitation of Congress



# About the Board (cont.)



- Holds public meetings several times per year in different locations in the United States—meetings are typically webcast
- Provides technical and scientific comments in letters to DOE following public meetings
- Makes all official documents and information (meeting transcripts, archived webcasts, and presentations; reports, correspondence, and congressional testimony) available on its website: [www.nwtrb.gov](http://www.nwtrb.gov)



# Board Members

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- ❖ **Jean Bahr, Ph.D., Chair** – University of Wisconsin, Madison
- ❖ **Steven M. Becker, Ph.D.** – Old Dominion University
- ❖ **Susan L. Brantley, Ph.D.** – Pennsylvania State University
- ❖ **Allen G. Croff, Graduate Nuc. Engr. Degree, MBA** – Vanderbilt University
- ❖ **Efi Foufoula-Georgiou, Ph.D.** – University of California, Irvine
- ❖ **Tissa Illangasekare, Ph.D., P.E.** – Colorado School of Mines
- ❖ **Linda K. Nozick, Ph.D.** – Cornell University
- ❖ **Kenneth Lee Peddicord, Ph.D. , P.E.** – Texas A&M University
- ❖ **Paul J. Turinsky, Ph.D.** – North Carolina State University
- ❖ **Mary Lou Zoback, Ph.D.** – Stanford University
- ❖ (vacant)



# Meeting Information

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- Check out [www.nwtrb.gov](http://www.nwtrb.gov) for meeting materials and Board reports, correspondence, and testimony
- Public comment periods (before lunch break and before adjournment)
- Written comments may be submitted by the public (will be part of meeting records)
- The meeting is being webcast live (meeting transcript and archived version of the webcast will be available at [www.nwtrb.gov](http://www.nwtrb.gov))



# Nuclear Waste Transportation

- Cask and legal-weight truck for shipping SNF  
(NAC, International, 2014)
- Commercial spent nuclear fuel on a rail car from West Valley, New York, to Idaho National Laboratory  
(Tyaake, 2004)

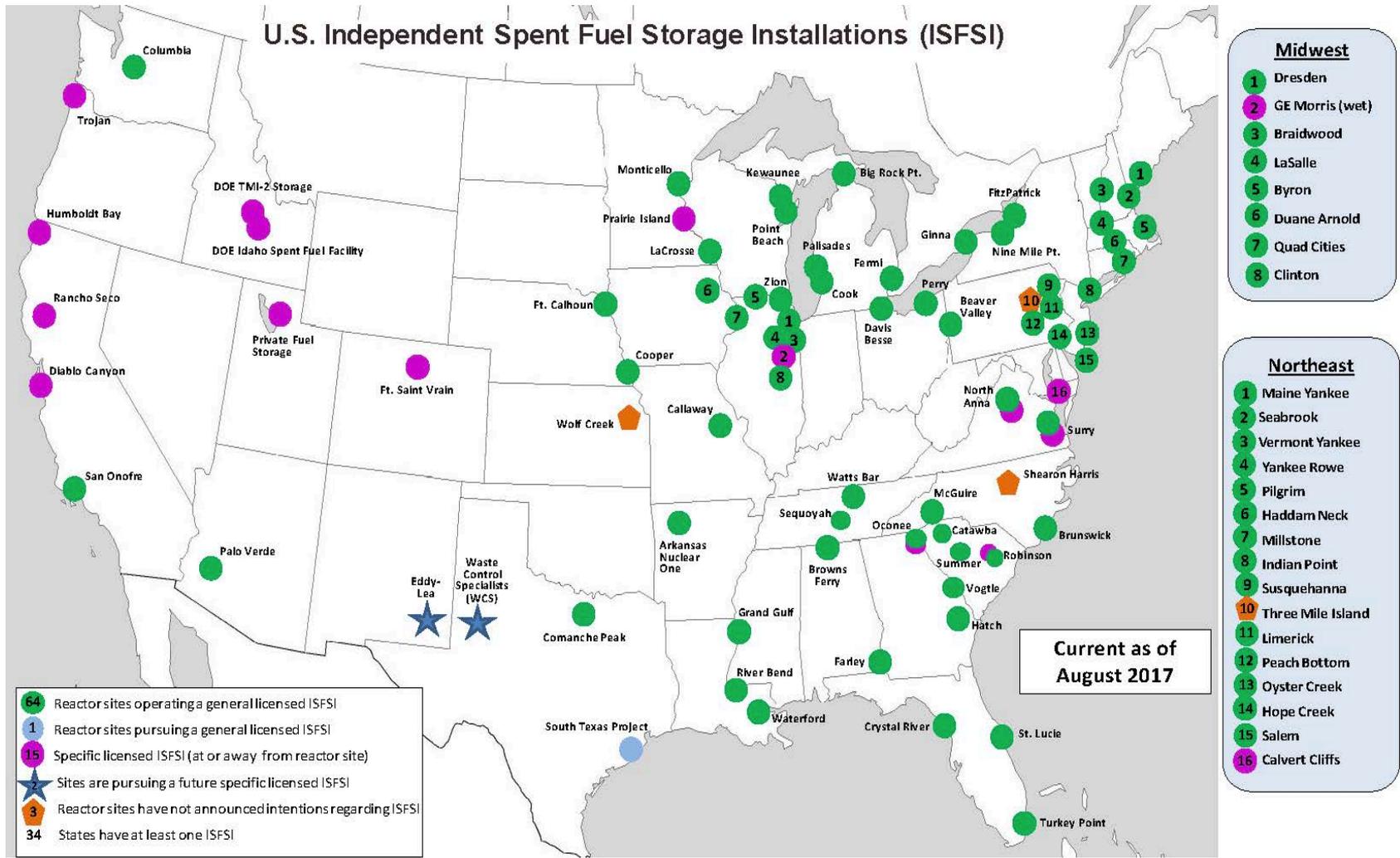


# Nuclear Waste Transportation (cont.)

- U.S. Navy's M-290 cask and railcar for shipping naval spent nuclear fuel (U.S. Navy, 2015)
- Large SNF cask with mock-up fuel assemblies being loaded onto a large barge for shipment (Sandia National Laboratories, 2017)



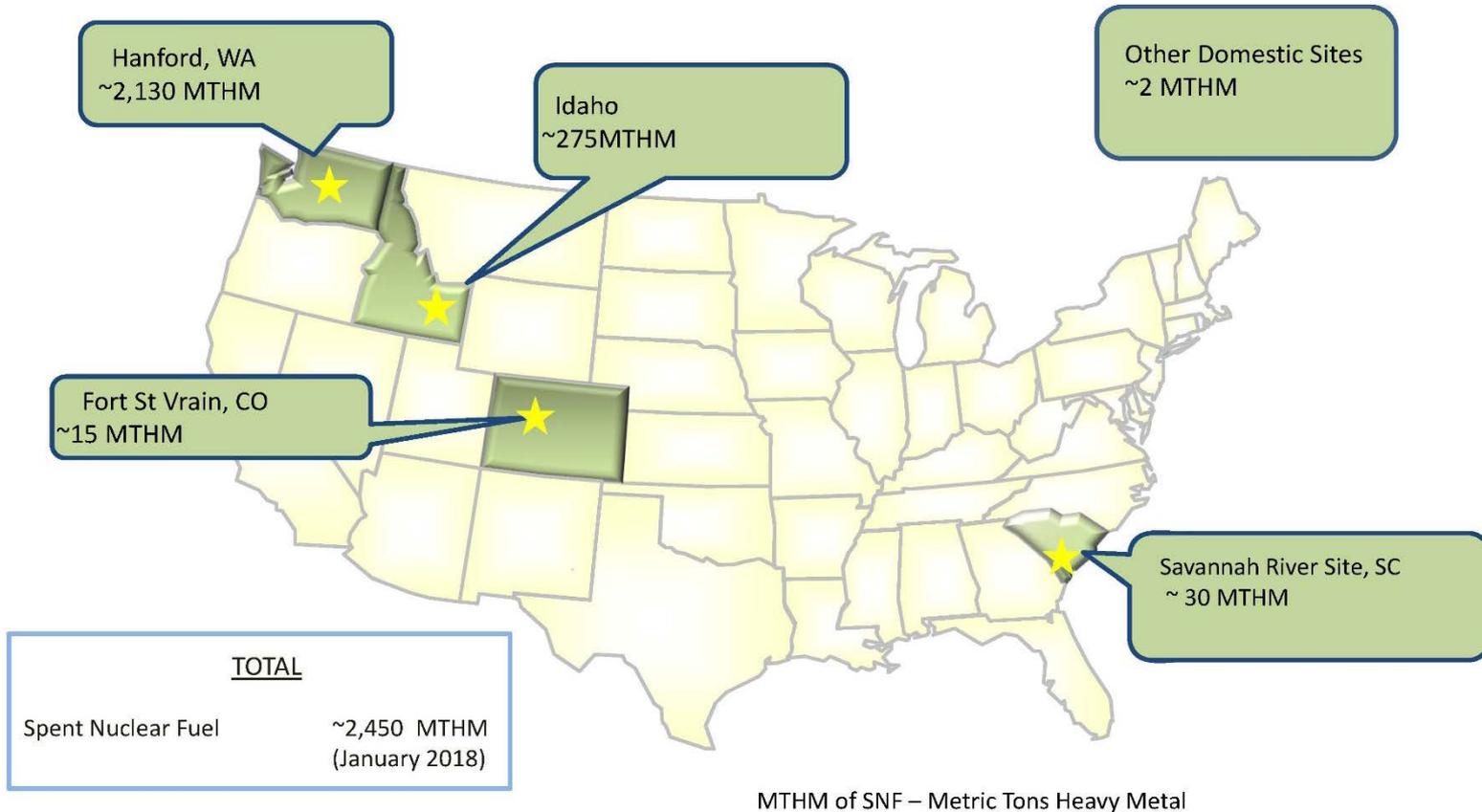
# U.S. Commercial SNF Storage



(NRC, 2017)



# DOE-Managed SNF Storage



(DOE, 2018)



# Examples of Technical Issues

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- Complete the fabrication, testing, and approval of a new railcar dedicated to shipping spent nuclear fuel and high-level waste
- Identify infrastructure and equipment upgrades needed to support loading and transporting nuclear wastes, especially at “shut down” commercial nuclear power plant sites
- Develop and demonstrate effective inspection techniques and equipment to examine waste containers to ensure they meet the regulatory requirements for transportation



# Examples of Technical Issues (cont.)

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- For containers that have not been, or cannot be, licensed for transportation, it will be necessary to remediate the canisters or repackage the spent nuclear fuel into canisters that are approved for transportation
- If repackaging is necessary, a new repackaging facility will have to be designed, licensed, and built

[NOTE: these latter two technical issues will not prevent the start of shipping, but the overall waste management system will have to be well-integrated to account for a repacking activity]



# Meeting Speakers

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- **William Boyle** (DOE, Office of Nuclear Energy)
- **Mark Whitwill** (KKG, Switzerland)
- **Gary Lanthrum** (Consultant to NAC Int'l.; former Director of Transportation at OCRWM)
- **Mark Richter** (Nuclear Energy Institute)
- **Myron Kaczmarzsky** (Holtec, Int'l.)
- **Erica Bickford** (DOE, Office of Nuclear Energy)
- **Ken Niles** (Oregon Department of Energy)
- **Jack Wheeler** (DOE, Office of Nuclear Energy)
- **Mike Brown** (DOE Carlsbad Field Office, DOE Office of Environmental Management)
- **Darrell Dunn** (Nuclear Regulatory Commission)

