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

AGENDA
WINTER BOARD MEETING
WEDNESDAY, February 17, 2016

KNOXVILLE MARRIOTT HOTEL
501 E. HILL AVENUE
KNOXVILLE, TN 37915
MISSISSIPPI AND KENTUCKY BALLROOMS

8:00 a.m. **Opening Remarks**

1) Call to Order and Introductory Statement—Rod Ewing, Board Chairman
2) Welcome—Johnny Moore, Department of Energy (DOE) Manager, Oak Ridge National Laboratory (ORNL) Site Office
3) Welcome—Alan Icenhour, Associate Laboratory Director, ORNL
4) Opening Remarks—Andy Griffith, Associate Deputy Assistant Secretary for Fuel Cycle Technologies, DOE Office of Nuclear Energy
   - How is DOE considering uncertainty on the path forward to the repository when making decisions about storage and transportation research?
   - Overall Research and Development priorities
   - How does DOE view the role of the Nuclear Energy University Programs in addressing High-Burnup Fuels (HBF) Issues?

9:00 a.m. **Spent Nuclear Fuel (SNF) Regulations and Gaps in the (HBF) Knowledge Base**

1) Brief Introduction to the HBF Issue and Knowledge Gap Analysis—Brady Hanson, Pacific Northwest National Laboratory (PNNL). What is HBF and how does it differ from low-burnup fuel?

   - What are the degradation issues?
   - Review SNF behavior knowledge gaps

- Priority and status of work to fill the gaps

2) Nuclear regulatory commission (NRC) Regulations for Storage and Transportation—David Tang, (NRC)
   - Regulations governing fuel behavior during storage and transportation under normal and accident conditions

9:35 a.m. **Questions/Discussion**

9:55 a.m. **Hydride Reorientation (HRT) Occurrence and Effects**

1) Findings and Recommendations from the August 2014 American Society for Testing and Materials Workshop—Mac Louthan, Savannah River National Laboratory
   - Brief overview of hydride reorientation issue
   - Discussion of recommendations to solve the hydride reorientation problem and apply results to SNF
   - Standards that are needed and why
   - Additional research needed

10:30 a.m. **Questions/Discussion**

10:50 am. **Break**

11:10 a.m. **HRT Occurrence and Effects (cont.)**

2) Update on Testing to Evaluate Hydride Reorientation—Mike Billone, Argonne National Laboratory.
   - Summary of HRT and ring compression testing as a function of cladding type, stress, and maximum temperature
   - Developing confidence in the ductile-to-brittle transition temperature

11:40 a.m. **Questions/Discussion**

12:00 p.m. **Public Comments**

12:20 p.m. **Lunch Break**

1:20 p.m. **Behavior of HBF Under Normal Conditions of Transport**

1) Cyclic Testing of Irradiated Fuel—Bruce Bevard, ORNL.
   - Why is the work being done and why is it important to the normal transportation of fuel?

- Describe the apparatus, how it works, and what it measures
- Describe the range of sample physical characteristics
- Illustrate what kind of data is obtained and basic trends in the data with time, loads, and different specimen types
- Where do we go from here?

2) Sandia Shaker Table and Over-the-Road Vibration Studies—Paul McConnell, Sandia National Laboratories.
   - Why are the shaker table tests and over-the-road test being conducted?
   - Describe the shaker table tests. What kinds of assemblies are used and how do they represent spent fuel?
   - How will modeling efforts use the shaker table results?
   - Describe the over-the-road program
     a) What kind of cask and fuels were used? How can the behavior of an unirradiated assembly be translated into the expected behavior of HBF?
     b) Why is this system representative? How does this represent an actual cask system?
     What are the options, status, and impediments in conducting similar tests for rail conditions?

2:20 p.m. **Questions/Discussion**

2:40 p.m. Break

3:00 p.m. **Behavior of HBF Under Normal Conditions of Transport (cont)**

3) Engineering Application of Test Data—David Tang, NRC.
   - How will the data developed previously in this session be used to determine actual spent fuel behavior during normal transportation?

3:35 p.m. **Questions/Discussion**

3:55 p.m. **Confirming the Condition of HBF during Extended Storage**

1) DOE HBF Cask Demonstration Project (HCDP) at Dominion North Anna ISFSI—Brady Hanson, PNNL.

- Purpose: what is the test proving?
  Description of cask, fuels used, pre- and post-storage examinations, test monitoring
- Schedule when results will be available and progress
- Sister rod evaluation and what data is gained

2) Integrated Research Project: University of South Carolina to Demonstrate the Efficiency of Drying—Travis Knight, University of South Carolina.
   - Describe the goals and scope of the project
   - Describe the experimental analysis methodology
   - Describe how the results of this project will help interpret the drying evaluation being conducted with the HCDP

4:35 p.m. **Questions/Discussion**

4:55 p.m. **Public Comments**

5:15 p.m. **Adjourn Public Meeting**