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

AGENDA
Spring Board Meeting
Tuesday, March 27, 2018

Embassy Suites D.C. Convention Center
900 10th Street, NW
Washington, DC 20001

8:00 a.m. **Call to Order and Introductory Statement**
Jean Bahr, Board Chair

8:15 a.m. **When the Rocket is Up: Twenty Years of Retrievability/Reversibility Work at the International Level**
Claudio Pescatore, formerly Nuclear Energy Agency

i. What projects has the NEA undertaken related to monitoring and retrievability/reversibility?
ii. What prompts some countries and not others to establish requirements for retrievability or reversibility? Is there a trend?
iii. Can a repository be designed to facilitate retrievability/reversibility without compromising its ability to isolate and contain waste?
iv. What are the challenges for implementing monitoring and retrievability/reversibility?
v. Are commitments to monitor and to retrieve/reverse anything more than symbolic?

8:45 a.m. *Questions, discussion*

9:05 a.m. **Reversibility and Retrievability: Governance and Technical Approach**
Patrick Landais, Andra, France

i. How is monitoring related to Andra's safety case?
ii. How was the requirement for reversibility established in France? How does it differ from retrievability?
iii. What will be monitored during the preclosure period? Postclosure period? Has the instrumentation been developed to carry out the monitoring?
iv. What benchmarks, if any, have been identified that would trigger either a decision to retrieve the waste or to reverse course?
v. How would that decision be made? What are the institutional and technical challenges of implementing such a decision?

9:35 a.m. *Questions, discussion*

9:55 a.m. **Break**

10:10 a.m. **The Role of Monitoring in the Swiss Disposal Program**
Piet Zuidema, formerly Nagra, Switzerland

i. How is monitoring related to Nagra's safety case?
ii. What motivated Nagra to adopt a repository design that features a separate area for monitoring?
iii. What features, events, or processes will be monitored during the preclosure period? Postclosure period? Has the instrumentation been developed to carry out the monitoring?
iv. What are the requirements in Switzerland for retrievability?
v. What benchmarks, if any, have already been identified that would trigger a decision to retrieve the waste?
vi. How would that decision be made? What are the institutional and technical challenges of implementing such a decision?

10:40 a.m. *Questions, discussion*

11:00 a.m. **Preliminary R&D and Design Work for Monitoring and Retrieving Waste in a Geologic Disposal Facility in Belgium**
Maarten van Geet, ONDRAF/NIRAS, Belgium

i. What policies have been adopted for disposing of high-activity waste in Belgium?
ii. How is monitoring related to the safety case for disposal of waste in Boom clay?
iii. What features, events, or processes will be monitored during the preclosure period? Postclosure period? Has the instrumentation been developed to carry out the monitoring?
iv. What retrievability requirements are being considered in Belgium? What institutional and technical challenges are anticipated in implementing retrievability?

11:30 a.m. *Questions, discussion*

11:50 a.m. **Public Comments**

12:00 p.m. **Lunch Break (1 hour)**

1:00 p.m. **Retrieving Waste from the Asse Salt Mine: Facts and Challenges**
Horst Geckeis, Karlsruhe Institute of Technology, Germany

i. What are the main provisions of the repository-siting legislation recently approved in Germany?
ii. What events led to the passage of the *Lex Asse*?
iii. What technical analyses were carried out for alternatives options to manage the waste disposed in the Asse II mine?
iv. What policy considerations determined which option would be adopted?
v. What are the challenges for implementing the retrievability option?

1:30 p.m. *Questions, discussion*

1:50 p.m. **Sensors and Technologies for Monitoring Subsurface Seepage in a Geologic Repository**
Dani Or, Swiss Federal Institute of Technology Zurich (ETHZ), Switzerland

i. What are the key parameters to monitor to confirm the performance of a geologic repository for high-level radioactive waste and spent nuclear fuel with respect to subsurface seepage?
ii. What is the state of the art in sensors and technologies that can be used to monitor those key parameters?
iii. What are the technical challenges in applying those sensors and technologies to monitor repository performance?
iv. What are the main areas for improvement in currently available sensors and technologies?

2:20 p.m. *Questions, discussion*

2:40 p.m. **Sensors and Technologies for Monitoring Waste Package Corrosion in a Geologic Repository**
Raul Rebak, G.E. Global Research

i. What are the key parameters to monitor to confirm waste package performance in a geologic repository for high-level radioactive waste and spent nuclear fuel?
ii. What is the state of the art in sensors and technologies that can be used to monitor those key parameters?
iii. What are the technical challenges in applying those sensors and technologies to monitor waste package performance?
iv. What are the main areas for improvement in currently available sensors and technologies?

3:10 p.m. *Questions, discussion*

3:30 p.m. **Break**

3:45 p.m. **Panel Discussion**
C. Pescatore, P. Landais, P. Zuidema, M. van Geet, H. Geckeis, D. Or, R. Rebak

4:45 p.m. **Public Comments**

5:00 p.m. **Adjourn Public Meeting**