



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