

PANEL SESSION 3 - International Deep Geological Repository Progress

Co-Chairs: Enrique Biurrun, *DBE TECHNOLOGY GmbH (Germany)*;
Gérald Ouzounian, *ANDRA (France)*

Reporter: John Mathieson

Panelists Included:

- Borries Raapke, *Managing Director of DBE and DBE TECHNOLOGY (Germany)*
- François-Michel Gonnot, *Chairman of ANDRA and member for the French Parliament (France)*
- Roger Nelson, *Director for Science, Waste Isolation Pilot Plan, US DOE*
- Marjatta Palmu, *Senior Adviser, Posiva Research (Finland)*
- Monica Hammarstrom, *Director of the Technology Department, SKB (Sweden)*

Over 120 people heard about the progress on deep geological disposal in Germany, France, Finland, Sweden and the US at WIPP. Each panelist gave an overview of where their program is and how they got there. What was notable about the Finnish and Swedish programs was their adherence to timelines set out in the 1980s – some delays, yes, but no abandonment of the program.

The Co-Chairs opened proceeding and reminded the audience that despite the standstill on the US's deep geological repository for SNF and HLW, several other repository programs continue to make considerable progress that deserve to be recognized.

Marjatta Palmu started the proceedings by outlining the overall Finnish waste management program for the waste generated at its two nuclear sites. Each has its own mined repository some tens of meters deep, but both will make use of the deep geological facility being developed near to the Olkiluoto power plant for its spent fuel disposal. The concept was based on the Swedish copper canister. The program to construct the repository was set out in a timeline developed in 1983 and despite some delays the repository will be operational by 2020. She noted that the progress was achieved by having a clear legal system, supported by an independent regulator and that it was important to persevere.

She described the relationship with the local community as one being based on trust. This had been achieved through becoming integrated in the local community by relocating the headquarters there.

Monica Hammarstrom acknowledged the long relationship between her company and Posiva. She described the Swedish waste management system pointing that all the power plants were on the coast so waste, spent fuel and new fuel were transported by ship. There was a hard rock, copper canister and bentonite laboratories located at Oskarshamn to the south of Stockholm, whilst the repository itself would be located at Forsmark to the north. The encapsulation plant would be located at Oskarshamn also. The target date for repository operation was 2025.

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The Swedish siting program had not been easy even though a volunteer system had been used. The challenge for her company was to move from an R&D phase to an industrial phase, and to maintain the 81% support of the local community.

Francois-Michel Gonnot referred to ANDRA's CIEGO: Industrial Centre for Geological Disposal at the Bure site in north-western France where currently exists a 450m deep URL in a clay host rock. In March 2010 a 30 km² area was selected for further investigation to select the most favorable geological zone and to select the surface facility. A public debate will follow in 2012 followed by approval to continue in 2013. French law requires ANDRA to include reversibility and retrievability in its concept, and was working with other organizations in the Nuclear Energy Agency to help define it in preparation for the submission of the license application in 2015.

Borries Raapke gave an overview of the three repository projects in Germany against the background of the country having 17 NPPs with an installed capacity of 20,200 MW(e). Federal law required all radwaste to go deep and it was their task to provide these through his company. The Gorleben 840 m deep salt repository for heat-generating wastes was selected in 1977, but a red-green coalition government ordered a ten-year moratorium in investigations which ended in 2010. The Konrad repository for non-heat generating wastes is currently undergoing refurbishment and should be available by 2018. The Morseleben salt repository for low and intermediate level waste, in former East Germany, is undergoing closure. Current Government policy was to press ahead and the safety case for Gorleben is being developed and a site suitability statement will be published in 2012.

Roger Nelson summarized the current US position with WIPP being operational and Yucca Mountain halted. The Office of Civilian Radioactive Waste Management had been subsumed into the Office of Nuclear Energy where an Office of Used Fuel Management had been established and was studying borehole disposal.

EM has created the International Repository Program to work with other nations on geological disposal which has an advisory board which includes EPA, NRC and the State Department representation. Roger's view of why WIPP had been successful was that they established a global presence and had a good communications policy: when you do something or know something you have to tell others. EM was also joining the international grouping of waste management organizations, EDRAM and had representation on the working groups of the IAEA and NEA. In response to a question, Roger confirmed that TRUPAC 3 had been licensed but certification was in progress.

In open discussion a question was asked about heat loading in salt of spent fuel / high level wastes. Much R&D had been carried out in Germany in the 70's and other work had been done at WIPP, both confirming that negative brine migration behavior was an "urban myth".

The panel agreed that the success factors for winning public acceptance included a culture of openness and transparency which led the Swedish repository host site having 81% of the local population in favor of geological disposal. Further, a strong legal base for decision making and consistent government policy were crucial. Political support and trusted regulators were also key.

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Direct financial community benefits were not as important as safety and jobs. In Finland property taxes for nuclear facilities were higher than for other installations which provided benefit. Local infrastructure improvement projects financed by the waste organization were perceived as important in keeping good relationships with the community.

Other questions covered the disposal safety case of MOX fuel which was acknowledged as “difficult”; regional repositories for which the EDRAM position was that the top priority for the next 10-20 years should be national programs.

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