

# Radioactive Waste Management

## Radioactive Waste Management Committee (RWMC)

*The RWMC is working to help Member countries find long-term solutions for radioactive waste management, and is currently focusing its efforts on improving both technical and social confidence in geologic disposal. In addition to long-lived radioactive waste, materials from decommissioning are of specific concern for the RWMC.*

### Waste management policy issues

To gain the necessary public confidence in engineered geologic disposal, it is important to show that progress towards disposal will be made using a cautious and flexible step-wise decision process, with opportunities provided to review decisions made taking account of both technical and public interest matters. The RWMC held a topical session on step-wise decision making in this field in March 2001 and has undertaken work to further elucidate this concept.

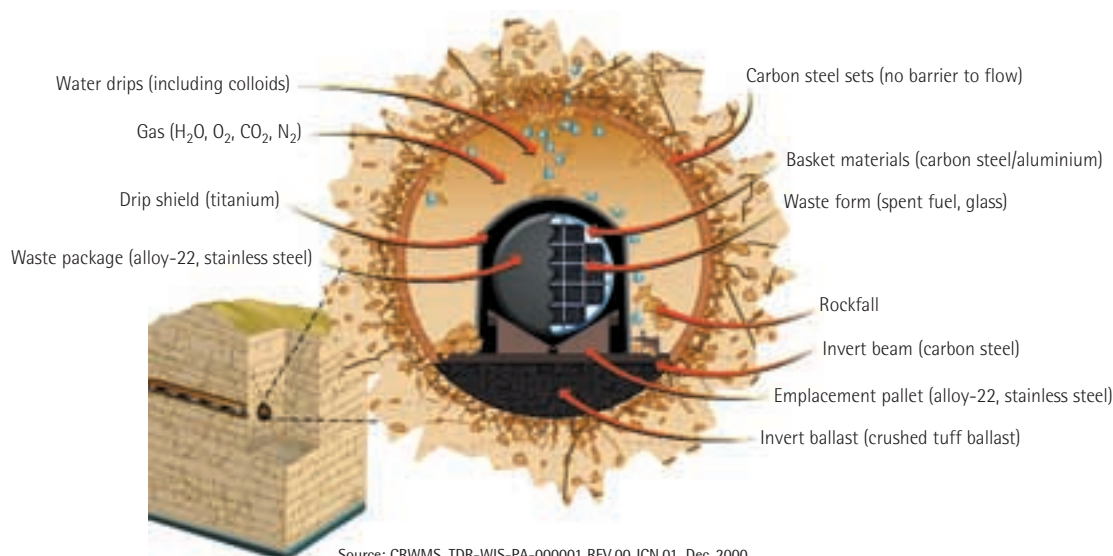
Reversibility of decisions is a substantial consideration in the step-wise decision-making process. The implications of favouring retrievability of the waste in disposal strategies and the methods to implement it are important for NEA Member countries. A booklet was released that reviews the concepts of reversibility and retrievability as they may apply to the planning and development of engineered geologic repositories.

Underground research laboratories (URLs) are essential to provide the scientific and technical information and practical experience needed for the design and construction of radioactive waste disposal

facilities, as well as for the development of the safety case that must be presented at various stages of repository development. The report produced in 2001 on this subject provides an overview of the purpose of URLs within national programmes; the range of URLs that have been developed or planned in NEA Member countries to date; the various contributions that such facilities can make to repository development programmes and the development of a safety case; considerations on the timing of developing a URL within a national programme; and the opportunities and benefits of international co-operation in relation to URLs.

A study on the evaluation of the approaches and arguments that have been used to establish and communicate technical confidence in the safety of deep geologic disposal was finalised, with publication planned for spring 2002. Using the results of this study, topical sessions and earlier RWMC documents, work continued on defining the processes, components, methodology and means of ensuring consistency that are required to build a safety case. The Agency pursued the development of a brochure describing the main elements

Modelling the Yucca Mountain Project:  
general engineered barrier design features, initial water movement and rock fall.



of the safety case and the approaches available for fulfilling the related objectives. This will help harmonise Member countries' general views on how to demonstrate confidence in the long-term safety of repositories.

The RWMC Regulators' Forum prepared a database on the structure of regulatory control in NEA Member countries, and is working on a document analysing commonalities and differences.

### Forum on Stakeholder Confidence

The Forum on Stakeholder Confidence (FSC) has taken up the challenge to improve understanding of the principles of stakeholder interaction and public participation in the field of radioactive waste management and to distil the lessons that can be learnt. In that context, a workshop was organised on "Stakeholder Involvement and Confidence in the Process of Decision Making for the Disposal of Spent Nuclear Fuel in Finland", in Turku, Finland on 14-16 November 2001. The workshop provided participants an opportunity to review the Finnish programme from the regulator, implementer and stakeholder viewpoints, and will help the FSC and the various stakeholders involved learn from the experience. Proceedings are under preparation and will be available by summer 2002. Further information on this activity is available in the section on "Nuclear Energy and Civil Society".

### Dismantling and decommissioning

The RWMC established the Working Party on Management of Materials from Decommissioning and Dismantling (WPDD) to monitor and review the policy, strategic, and regulatory aspects of the decommissioning and dismantling (D&D) of obsolete nuclear installations in view of the ultimate release of sites for other uses. The WPDD met twice in 2001 and is working on a database of information on D&D in NEA Member countries that should be made available in 2002 along with a booklet on status, approaches and issues in D&D. The NEA joint project on decommissioning, overseen by the RWMC, is described on page 29.

### Technical support

The five-year NEA GEOTRAP Project on radionuclide migration in geologic, heterogeneous media came to a close with its fifth workshop, hosted by SKB in Oskarshamn, Sweden in May. The GEOTRAP V proceedings are being published. The overall synthesis of the five workshops, which will be accessible to the interested non-technical public, is under preparation.

A proposal was made for a new technical activity named AMIGO (Approaches and Methods for Integrating Geologic Information in the Safety Case), and will be presented to the RWMC for approval in March 2002.

The "Clay Club" examines various argillaceous rocks (clays) being considered for deep geologic repositories of radioactive waste. During 2001, the catalogue of characteristics was updated and a new version

- An International Peer Review of the Yucca Mountain Project TSPA-SR was conducted of the US Department of Energy performance assessment concerning site recommendation of the Yucca Mountain underground repository for spent nuclear fuel and high-level waste, with publication of the review scheduled for early 2002.
- A workshop was organised as part of the Forum on Stakeholder Confidence (FSC) on Finnish experience with stakeholders in developing radioactive waste management solutions.
- The GEOTRAP Project on radionuclide migration in geologic, heterogeneous media came to a close with its fifth workshop and a synthesis report.
- A report was issued on *Reversibility and Retrievability in Geologic Disposal of Radioactive Waste*, describing and analysing the issues in the context of step-wise decision making in this domain.
- A report on underground research laboratories (URLs) was published, providing an overview of the roles of URLs within national programmes.

produced, while a database of bibliographic references on clay media created. Both will be available in 2002. A major study on self-healing capabilities of clays was prepared for its launch at the beginning of 2002.

### International peer review

An International Peer Review of the Yucca Mountain Project TSPA-SR was jointly organised by the NEA and the IAEA of an important USDOE study in support of the site recommendation process for the planned underground repository for US spent fuel and high-level waste at Yucca Mountain, Nevada. An international team of ten experts, including the NEA Secretariat, reviewed and critically analysed the Total System Performance Assessment for Site Recommendation (TSPA-SR) report using international recommendations, standards and practices as a basis. The review, which was conducted between June and September 2001, provides a positive statement regarding the adequacy of the overall performance assessment approach for supporting the site recommendation and gives detailed recommendations for further improvement.



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