

Radioactive Waste Management

Radioactive Waste Management Committee (RWMC)

The RWMC is assisting member countries in the area of management of radioactive waste and materials, focusing on the development of strategies for the safe, sustainable and broadly acceptable management of all types of radioactive waste, in particular long-lived waste and spent fuel.

Highlights

- Under RWMC auspices, an international expert team reviewed a French study on the current programme considering deep geological disposal in clay.
- The role of modelling engineered barrier systems (EBS) in the framework of the safety case was the topic of the third NEA/EC EBS workshop, held in La Coruña, Spain.
- The Approaches and Methods for Integrating Geologic Information in the Safety Case (AMIGO) project held its second workshop addressing the use of geoscientific arguments and lines of evidence supporting the safety case.
- The Forum on Stakeholder Confidence (FSC) organised a workshop in national context in Spain to discuss the "Cowam Spain" methodology to arrive at broadly accepted facility-siting proposals.

Waste management policy and governance issues

The safety case is a key input to decision making throughout the repository implementation process, which has evolved over the last decade from a numerical, performance-focused assessment to a collation of the broader range of evidence that supports and gives context to the safety argument. To collect and document progress and recent experience in drafting, presenting and reviewing safety cases, the RWMC has set up the International Experiences in Safety Cases (INTESC) initiative following the format of its earlier Integrated Performance Assessment Group (IPAG) exercises. The overall goals of this initiative are to analyse existing safety cases or elements of safety cases that are under development, and to identify key concepts; to provide a clear overview of the progress that has been made in the last decade; and to provide for an assessment to identify best practice in this area.

The INTESC initiative will be complemented by the organisation of an international conference, to be held in January 2007, to gather practical experience on preparing a safety case and to highlight progress made since 1989, when a similar symposium was held. At the time of the conference, many NEA activities are expected to report significant progress on databases (notably those of the TDB, Sorption and Clay Club projects), on the integration of science in safety cases (for example through the EBS and AMIGO projects), and on strategic areas such as those dealing with timescales in safety cases and with the definition and determination of compliance with long-term safety criteria.

NEA member countries have chosen different approaches to establishing criteria for the control of long-term safety of repositories, and to deciding how to make regulatory judgments against such criteria. The RWMC has undertaken to make the variety of these approaches more transparent, as well as their settings in different regulatory and safety/technical environments. The RWMC Long-term Safety Criteria Group reviewed the definitions used as a basis for setting these criteria, and in particular the ethical argumentation providing the basis for defining safety over extended timescales. Additional insight into the fundamental issues raised by very long timescales has been provided by another RWMC group which analysed the way different timescales are addressed in current safety cases, both from an implementer and regulatory point of view.

International peer reviews

A major NEA activity in the field of radioactive waste management is the organisation of independent, international peer reviews of national studies and projects. Following a request from the French Government, the NEA organised an international peer review of documentation developed by Andra, collectively known as the *Dossier 2005 Argile*, by an international review team of independent specialists covering all relevant aspects of research, safety assessment and the geological sciences. The overall objective of the peer review was to inform the French Government whether the *Dossier 2005 Argile* is consistent with international practices, and whether future research needs are consistent with the available knowledge basis and priorities are well-identified.

The *Dossier 2005 Argile* review represents a key milestone in the waste management programme for which Andra is responsible, and provides a relevant and important basis of information for the forthcoming discussions and decisions in France regarding the formulation of an updated national policy for the final management of high-level and long-lived radioactive waste.

Forum on Stakeholder Confidence

The RWMC Forum on Stakeholder Confidence (FSC) organised its fifth workshop in national context in Hospitalet, Spain, with the sponsorship of AMAC (the association of Spanish municipalities affected by nuclear facilities), and support from the national waste management agency ENRESA and the national safety authority CSN. The workshop focused on a methodology ("Cowam Spain") developed by these institutions in order to arrive at facility-siting proposals that are broadly accepted by society. FSC members, participants of the Cowam Spain project and Spanish stakeholders discussed the methodology to offer the results of their reflection to national politicians and administration. The methodology discussed at the FSC workshop will be proposed for identifying a national site for interim storage of spent fuel in Spain.

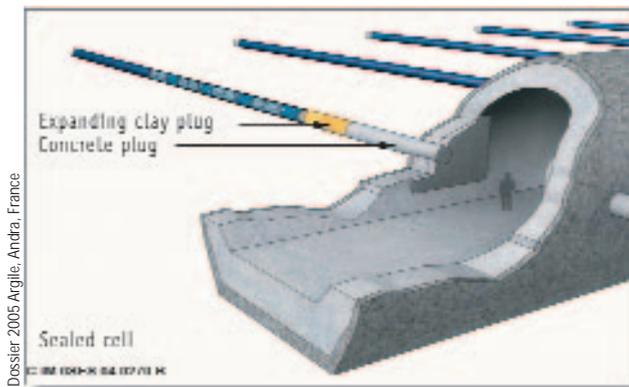
For the purpose of better understanding recent cultural and structural changes that are taking place within RWMC organisations, and thereby to better address stakeholder concerns, the Forum is preparing a desk study to extract lessons learnt from member institutions' experience. The study, which is being finalised, analyses the answers to a questionnaire received from 17 organisations in 11 countries. The FSC has also undertaken a study of the value added that waste storage or repository projects can bring to the hosting communities, focusing on cultural values and non-economic amenities.

In topical sessions at its annual meeting, the Forum addressed the link between research and development (R&D) and stakeholder confidence, and provided a platform to exchange experience in interaction with the media on waste management issues. For further information on the activities of the Forum as they relate to Nuclear Energy and Civil Society, see page 40.

Repository safety and integration of science

In the series of workshops on the role of engineered barrier systems (EBS), the third workshop was held in La Coruña, Spain, to analyse the role of EBS modelling in the framework of the safety case. The workshop aimed to promote common understanding of approaches to performance assessment and process modelling, and discussed both specific examples of EBS assessment and optimisation, and alternative elements of EBS modelling that will help build confidence in the safety case.

The AMIGO project on Approaches and Methods for Integrating Geologic Information in the Safety Case held its second workshop on 20-22 September 2005 in Toronto, Canada, hosted by the Canadian utility OPG. The workshop addressed the use of geoscientific arguments and lines of evidence supporting the safety case. In addition to the series of AMIGO workshops, a compendium is being prepared to compile the current state of relevant geoscientific knowledge and its use in a safety case.



Disposal cells for high-level radioactive waste under consideration in the French *Dossier 2005 Argile*.

Decommissioning

The safety case for decommissioning is characterised by the need to adapt to the changing features of the facility regarding its potential hazards, technical risks and managerial tasks. The RWMC Working Party on Decommissioning and Dismantling analysed the associated challenges in a report aimed at helping achieve the goals of a decommissioning safety case. In a similar manner, it also addressed issues of decommissioning strategy selection and the release of sites, from a decommissioning perspective.

The Working Party also prepared a status report on decommissioning funding, which will provide an overview of underlying principles, the implementation of funding schemes and associated uncertainties. The report is due to be published mid-2006.

Understanding the scientific basis

To secure the scientific basis of its work, the RWMC continued to support the development and maintenance of quality-assured databases and models for use in the implementation of repositories. Work continued on the Thermochemical Database (TDB), and the Sorption Project has been completed (see page 35). The Working Group on the Characterisation, Understanding and the Performance of Argillaceous Rocks as Repository Host Formations (the "Clay Club") published a Catalogue of Characteristics that provides an overview of key geoscientific characteristics of clay formations studied with regard to deep geological disposal. The Clay Club continued its studies on specific clay properties, notably on long-term natural tracer profiles (CLAYTRAC) and on the self-sealing capacities of clays.

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