

OECD NEA activities and experience in safety case development for geological disposal of high-level waste

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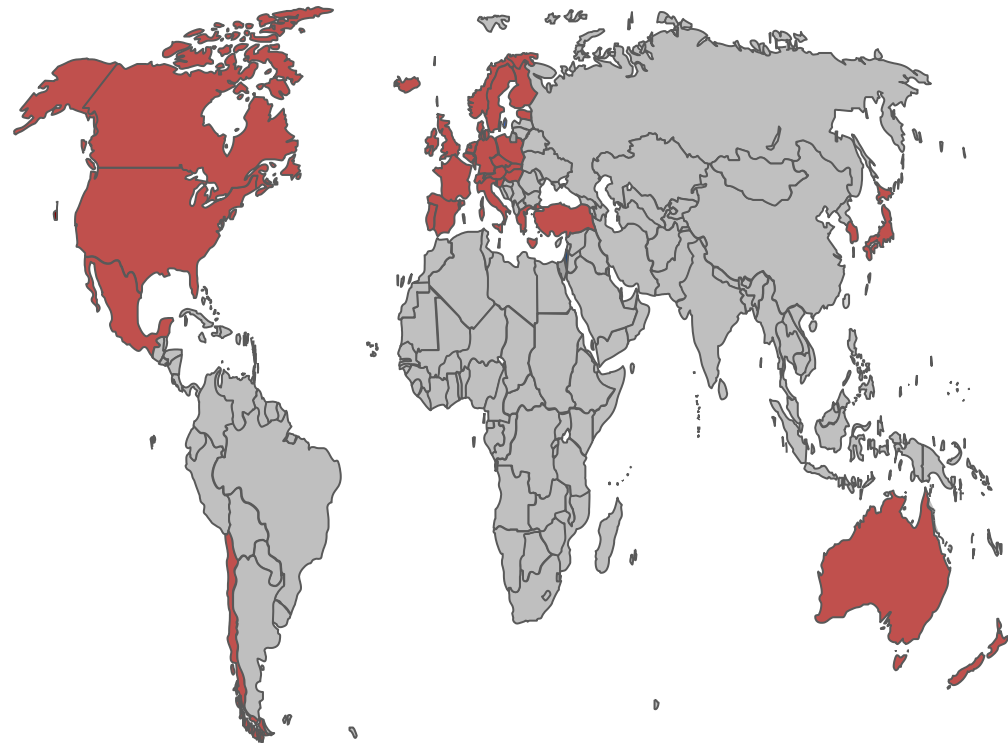
Radioactive Waste Management Specialist

AtomEco 2013

OECD member countries and mission

Organisation for Economic Co-operation and Development

- Established in 1961
- Headquarters in Paris, France
- 34 member countries in Europe, N. / S. America, Asia-Pacific region
- Mission:
Promote policies that will improve the economic and social well-being of people around the world
- ~2,500 staff



Structure of the OECD

Secretary-General: Angel Gurría

Administrative Services

- Public Affairs & Communications
- Associations Advisory Committees to OECD
- International Services for Remunerations and Pensions

Directorates

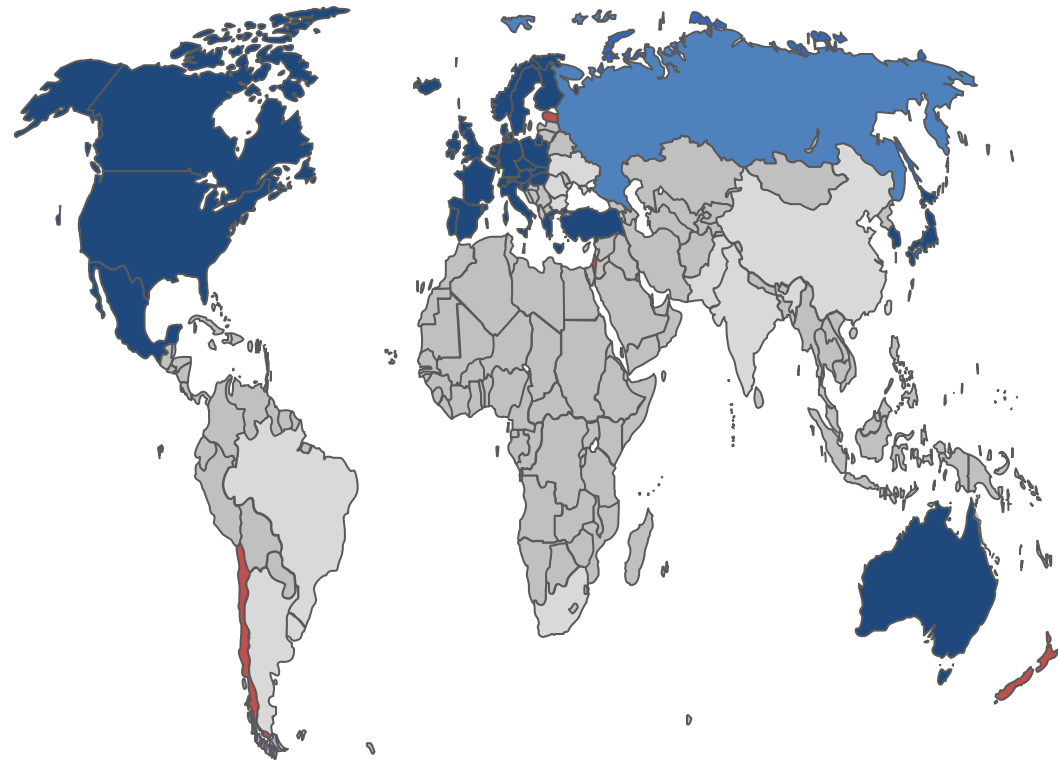
- Economy
- Tax, Finance
- Employment
- Social Welfare
- Health
- Education
- Environment
- Science & Tech.
- Industry & Entrepreneurship
- Trade, Agriculture & Fisheries

Agencies

- Nuclear Energy Agency
- Development Centre
- International Transport
- Sahel Club
- International Energy Agency

NEA member countries

- 31 member countries in Europe, North America and the Asia-Pacific region;
- Account for ~83 % of the world's installed nuclear capacity
- 82 staff
- 2013 budget: 11 M €



NEA mission

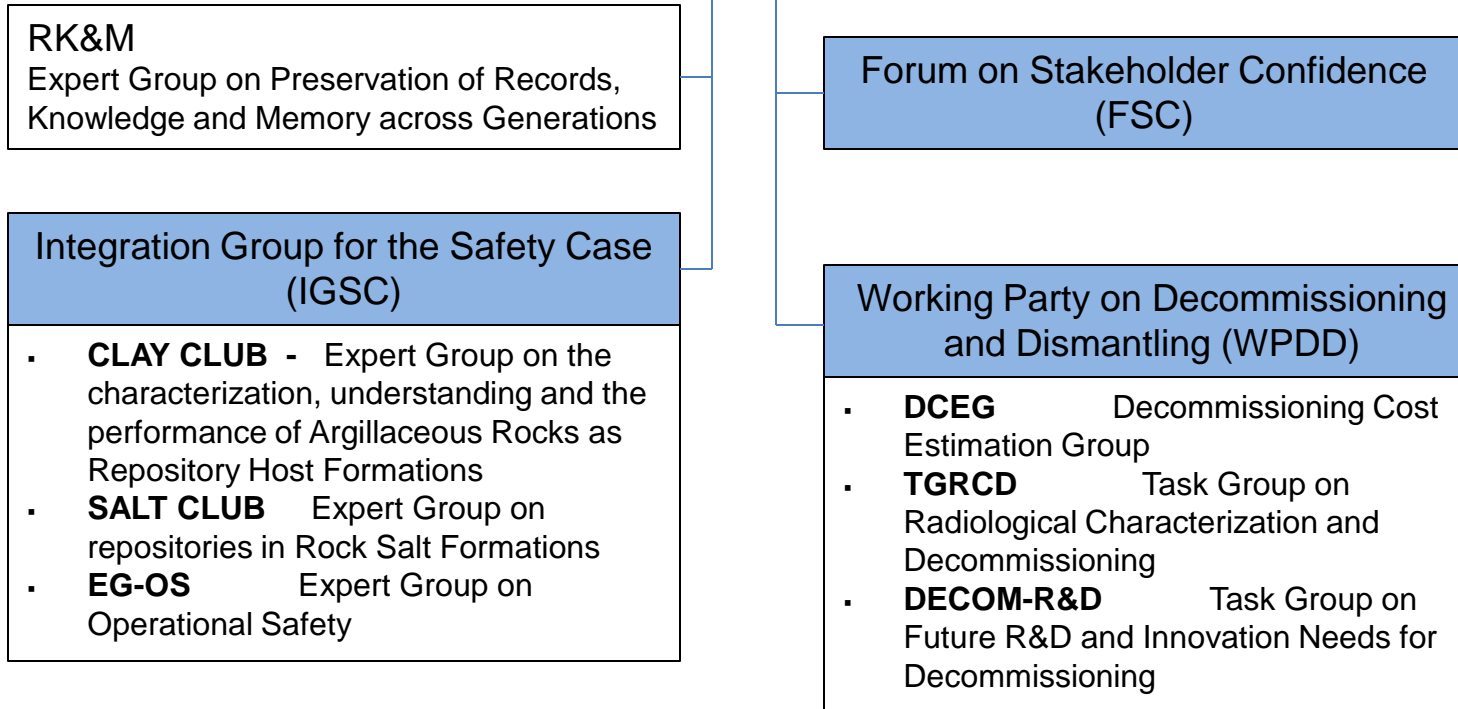
- To assist its member countries in maintaining and further developing, through international co-operation, the scientific, technological and legal bases required for a safe, environmentally friendly and economical use of nuclear energy for peaceful purposes
- To provide authoritative assessments and to forge common understandings on key issues as input to government decisions on nuclear energy policy and to broader OECD policy analyses in areas such as energy and sustainable development.

Structure of the NEA



Radioactive Waste Management Committee (RWMC)

Regulators' Forum
(RWMC-RF)



RWMC joint projects with other NEA divisions

- **CPD** - Co-operative Programme for the Exchange of Scientific and Technical Information Concerning Nuclear Installation Decommissioning Projects
- **TDB Project** – Thermochemical Database

IGSC – Integration Group for the Safety Case

- Established in 2000;
- **Mission:** to assist member countries to develop effective safety cases supported by robust scientific technical basis. Also provides a platform for international dialogues between safety experts to address strategic and policy aspects of repository development;
- 46 members, representing 38 organizations in 17 countries – senior technical specialists experienced in the development of safety cases for deep geological disposal projects. Members have sufficient seniority to mobilize other experts within their organization to contribute to IGSC initiatives

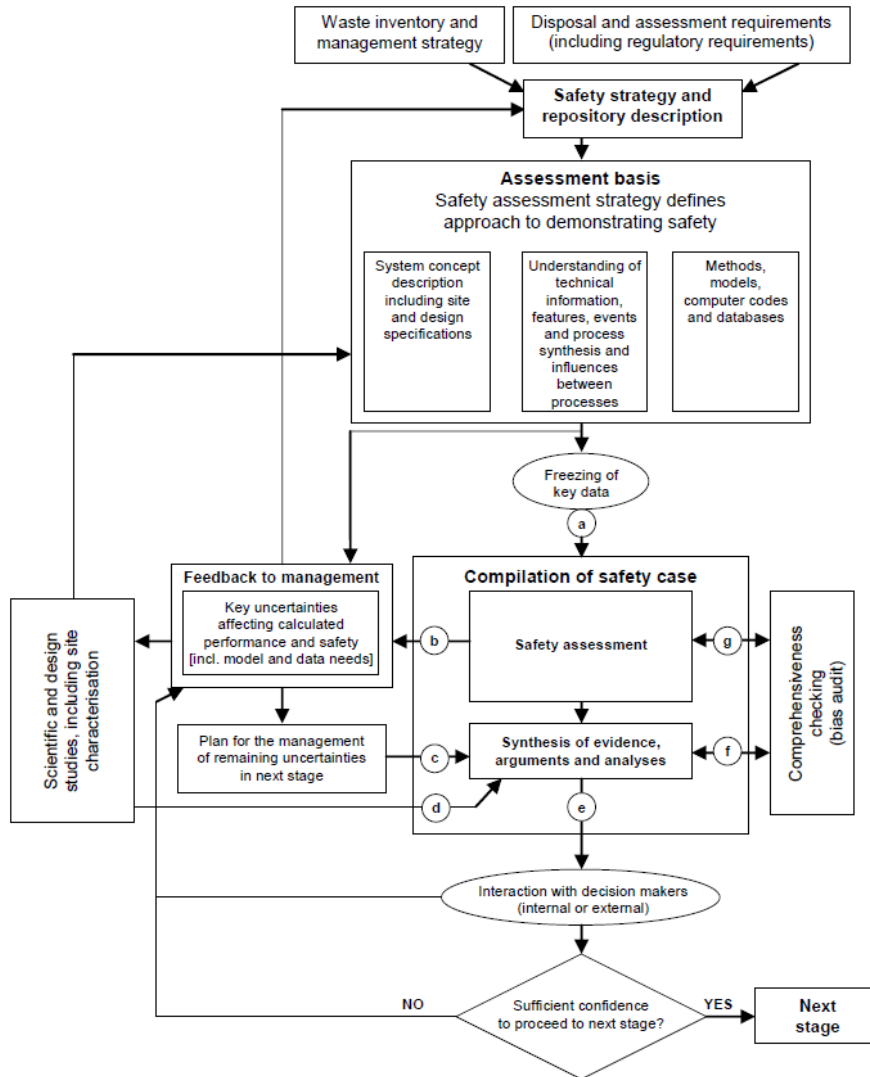
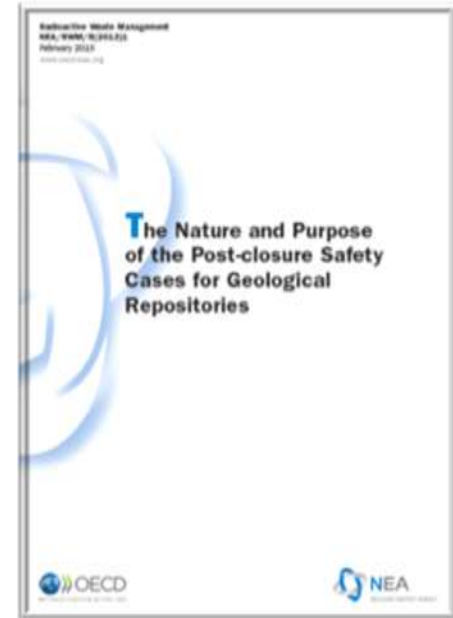
Mode of Operation

- Annual plenary meeting including a topical session
- Joint activities with the International Atomic Energy Agency (IAEA) and the European Commission (EC)

Services to members

- Expert / Task groups and projects to exchange and share knowledge, best practices
- High quality, NEA databases for safety case development
- Peer review members' radioactive waste management programmes

Safety cases



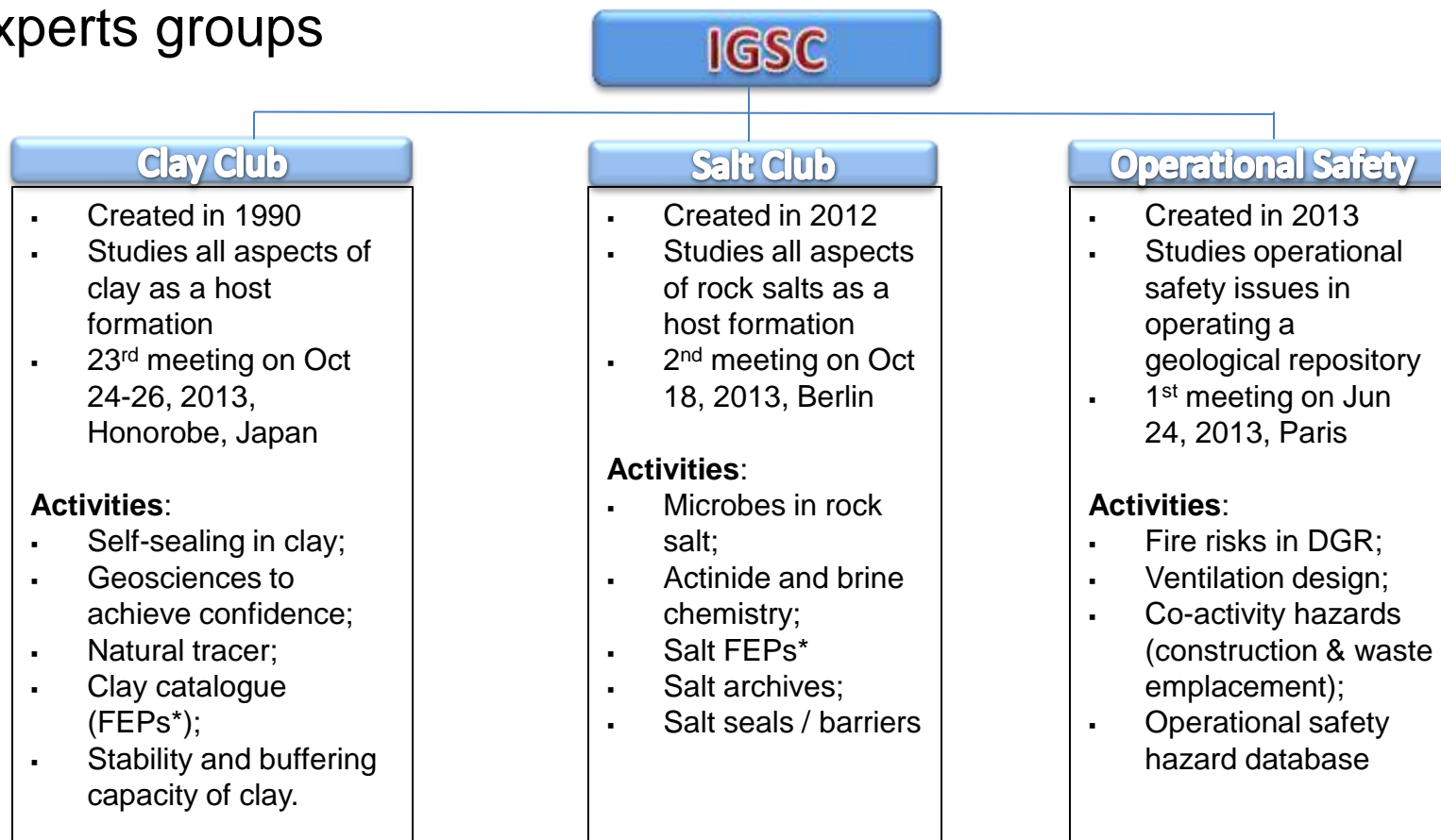
- Safety Cases are instrumental in demonstrating long term safety of DGR

The Safety Case and its Presentation

- A safety case is a formal compilation of evidence, analyses and arguments that quantify and substantiate a claim that the repository will be safe;
- A safety case are presented to support a decision (e.g. licensing), to help reviewing project status, to test safety assessment methods, or to prioritize R&D programme.

Current Activities and Projects

- 3 experts groups



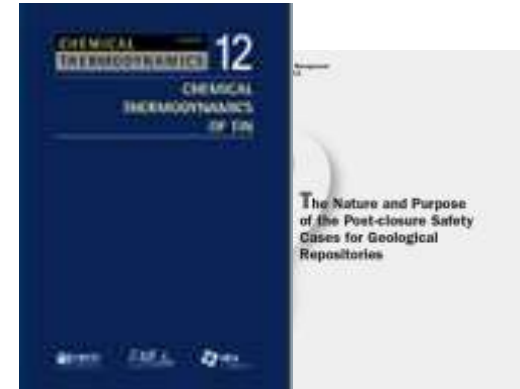
FEPs: Features, events and processes

IGSC Projects

- NEA International FEP database
 - Web-based database; with links to countries' specific FEPs
- Scenarios development
 - Member exchange experience in developing scenarios in safety case. A workshop in 2014.
- Repository Monitoring
 - NEA report on monitoring techniques and approaches;
 - 2nd NEA report on stakeholder expectations on monitoring.
- Gas migration
 - IGSC position paper on gas behaviour in geosphere;
- Repository data and knowledge management
 - Create metadata that national programmes can use to manage their data in developing safety case;
- Thermochemical Database (TDB)
 - An international chemical thermodynamic database

Previous activities and main achievements

- AMIGO - “Approaches and Methods for Integrating Geological Information into the Safety Case” - reports;
- MESA – “Methods for Safety Assessment”
- Underground Research Laboratories (URLs)
- “Cementitious materials in safety case for geological repositories for radioactive waste” – brochure;
- Sorption project;
- Review of Underground Research Laboratories (URLs) in DGR development.
- For further information, visit <http://www.oecd-nea.org/rwm/igsc/>.



NEA IGSC Publications

- Free publications, visit <http://www.oecd-nea.org/rwm/igsc/>

Recent publications:

- The Nature and Purpose of the Post-closure Safety Cases for Geological Repositories;
- Underground Research Laboratories
- Indicators in the Safety Case;
- Methods for Safety Assessment of Geological Disposal Facilities for Radioactive Waste

Flyers:

- Engineered Barrier System
- Construction and Operation of Geological Disposal Facilities
- Optimization of Geological Disposal Facilities

Thank you for your attention!