

NEA Activities on Information, Data and Knowledge Management

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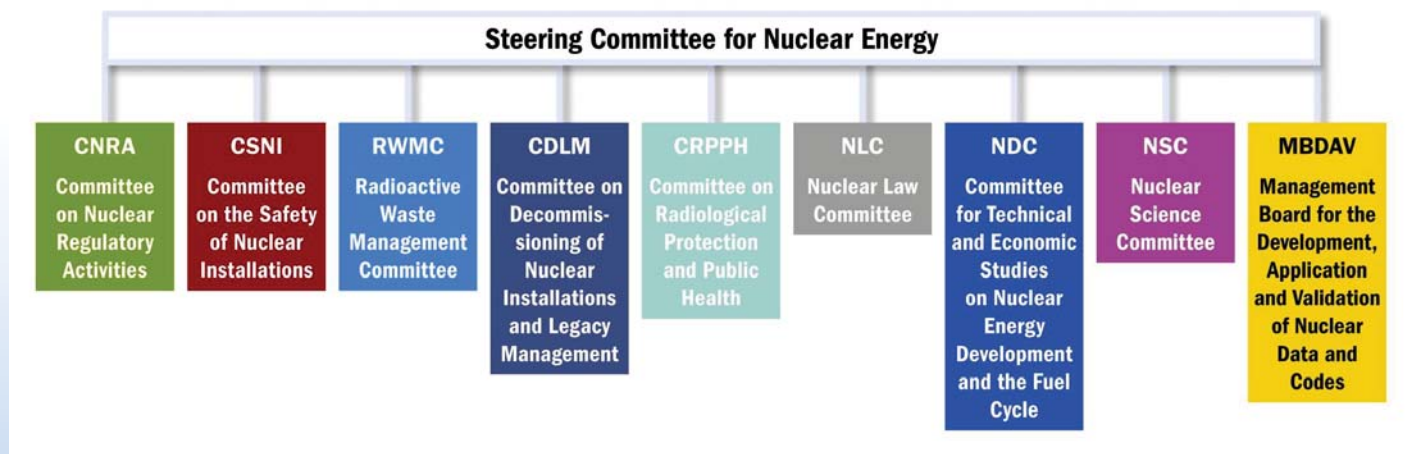
The NEA: 34 Countries Seeking Excellence in Nuclear Safety, Technology, and Policy

- 34 member countries + strategic partners (e.g., China and India)
- 8 standing committees and more than 80 working parties and expert groups
- 23 International joint research projects
- Expanding global relationships with industry and universities.



NEA countries operate about 86% of the world's installed nuclear capacity

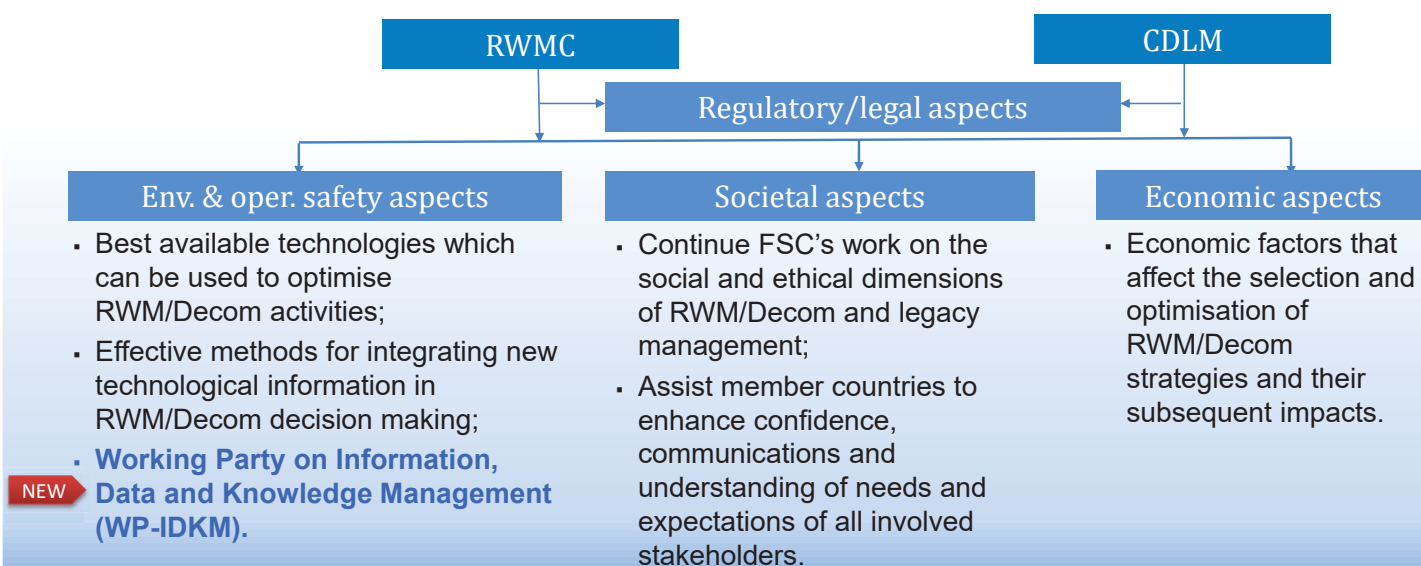
NEA Standing Technical Committees



The NEA's committees bring together top governmental officials and technical specialists from NEA member countries and strategic partners to solve difficult problems, establish best practices and to promote international collaboration.

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Managing Radioactive Waste Using a Holistic Approach



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Why RWM is Interested in IDKM

- **Data:** They increase in number, type and quality as national programmes proceed through the successive stages of repository commissioning.
- **Information:** Users have to be confident with data and able to access and understand the associated information for the long-term.
- **Knowledge:** The **explicit and implicit** knowledge that RWMOs acquire during the national programmes development has to be transmitted from generation to generation of workers to reduce the risk of loss.

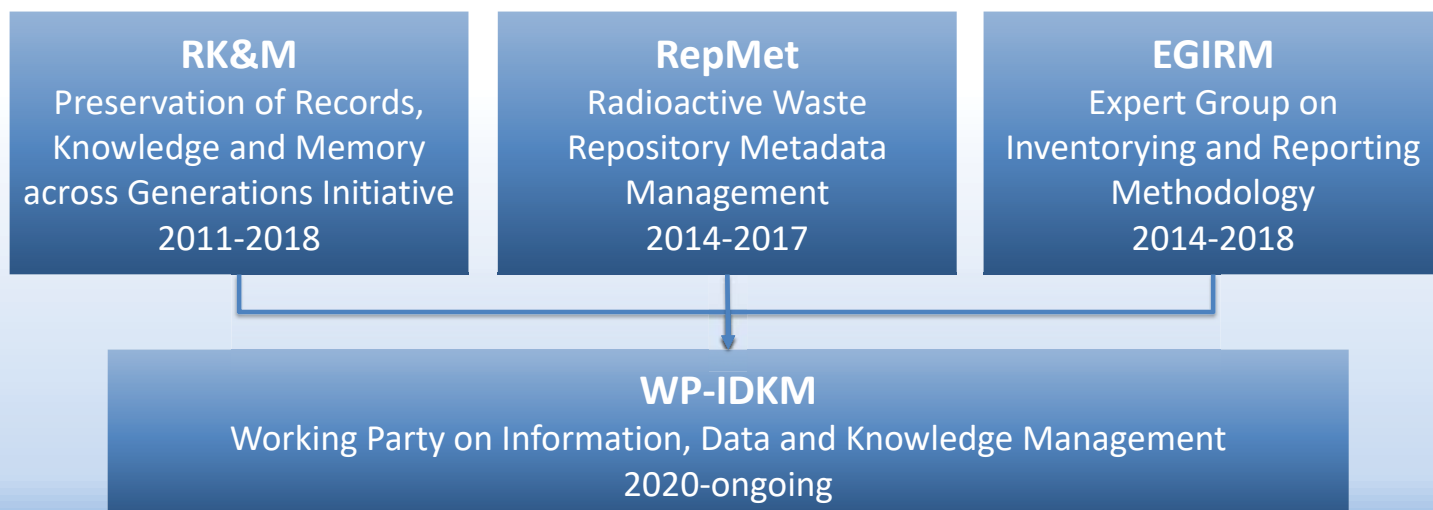


Meuse/Haute Marne Underground Research Laboratory

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NEA Activities on IDKM



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The RK&M Initiative

• Objectives

- Develop a theoretically founded, broad-based understanding
- Develop a practice-oriented “toolbox” of RK&M preservation methods

• Publications

- Final Report (2019)
- The Key Information File Report (2019)
- The Set of Essential Records Report (2019)
- Reference Bibliography (2018)
- Regulatory Catalogue (in publication)



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The RK&M Toolbox for Preservation

- **Dedicated record sets and summary files**
(“**Key Information File (KIF)**”, “**Set of Essential Records (SER)**”)
- **Memory institutions** (archives, museums, libraries)
- **Markers** (land surface markers, sub-surface m., deep geological m., ...)
- **Time capsules** (large visible time capsules, non-visible time c., small time c.)
- **Culture, education and art** (industrial heritage, alternative site re-use, ...)
- **Knowledge management** (knowledge retention tools, risk analysis, ...)
- **Oversight provisions** (monitoring, land-use control, ...)
- **International mechanisms** (int. agreements/guidelines/inventories, ...)
- **Regulatory framework** (national regulatory framework, safeguards)

“Key Information File” and “Set of Essential Records”

• Purpose of the KIF

- Provide relevant information to **help protect the passive performance of the repository** and **enable any necessary decision making**

Non specialists

• Purpose of the SER

- Provide sufficient information to ensure an **adequate understanding** of the repository system and its performance enabling to **review and verify the repository performance** and the **safety case to make informed decisions**

Specialists,
decision makers...



(NEA, 2019)

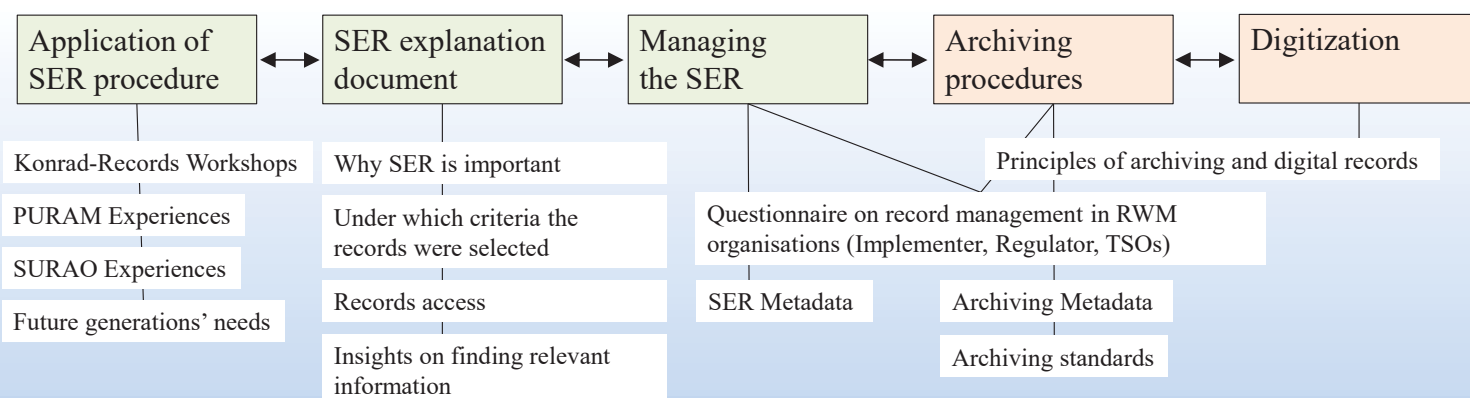
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Program of Work for 2022

RK&M report: Compilation of an SER ...

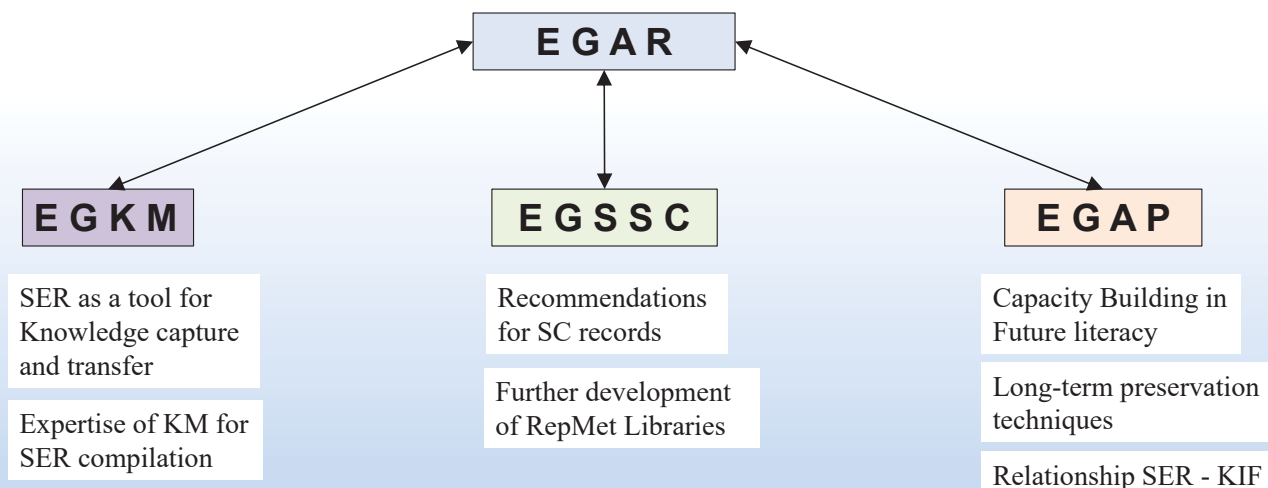
SER

ARCHIVING



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Interaction with other IDKM Expert Groups



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Digital Safety Case Activities (EGSSC)

Topics

- Data model for assessment methodology of NEA Methods for Safety Assessment of Geological Disposal Facilities for Radioactive Waste (MeSA)
- Improving conceptual data and metadata lists for RWM developed by former NEA RepMet and integrating with existing Features Events and Processes database
- Workshop on Digital Safety Case Development and Methodologies in 2022

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Knowledge Management Activities (EGKM)

Topics

- Knowledge management strategy benchmark survey to collect higher-level feedback on knowledge management culture, current programs and needs
- General KM strategy guidelines for organisations working with RWM and decommissioning to be developed by 2023
- Applied ontology survey and development of guidance, industrial applied ontology examples presented to the WP-IDKM

Awareness Preservation Activities (EGAP)

Topics

- Refine a list of international awareness preservation mechanisms and identify criteria for implementation to support organisations in creating an AP plan
- Capacity building within WP-IDKM on the Futures Literacy perspective
- End of License Issue concerned with capturing existing regulation after industrial activities for a repository cease and potential further analysis
- Workshop on awareness preservation approaches to be held 24-26 November 2022 in Mol, Belgium
- KIF development, including concrete examples from different countries and identification of standard components to be done in 2023-onward

COMAREG

NEA WORKSHOP ON COMPETENCY MANAGEMENT OF REGULATORS (COMAREG)

- Workshop took place in May 18-20, 2021
- Over 50 participants from 22 countries were present in the workshop.
- Lectures have been given by Representatives from NEA, IAEA, ENSTTI, Argentina, Bulgaria, Finland, Germany, UK and USA.
- After the presentations we hosted breakout working sessions in which participants discussed challenges in Competency management as well as potential solutions with involvement of NEA and international cooperation in mind.

COMAREG

Key areas of interest:

- Development of Regulator's framework;
- Platform for practical expertise
- Capacity building – HR Development involving Young Generation
- Knowledge management + knowledge governance
- Long-term RW management (DGR)
- Stakeholders involvement

COMAREG

Key skills (I):

- Radiation protection training;
- DGRs – Long Term Waste Management
- New/advanced technologies (SMRs, Robotics, AI, Decommissioning of Novel facilities, ...)
- Teaching of soft skills (Communication skills, cooperativeness, ...), Mentoring & Coaching new generations
- Proper HR planning
- Inspection skillset

COMAREG

Key skills (II):

- The skills for public communication and explain technical information to the public
- Meta-Competence (digital platforms, E-learning, self-planning and development of competences)
- Interdisciplinary Top management (Managing technical and scientific issues, balance of management knowledge and scientific knowledge in top management)

There is the need in international efforts led by the NEA to support members in the regulators' competency management:

- Support in organization of multilateral exchange, networking platform, transfer of knowledge, tutoring, etc.
- In-person and online events to share knowledge/competence with young generations (workshops, groups oriented seminars, task oriented keynotes);
- Selection and sharing the best practices (reports/documents)
- Involvement of NEA Committees, WPs and Groups to RF efforts to exchange relevant points (CNRA, CRPPH, WP IDKM, RIDD, others) and interactions with other international activities (IAEA, WENRA, etc.);
- Peer reviews/Feedbacks from experts of national CM programs.

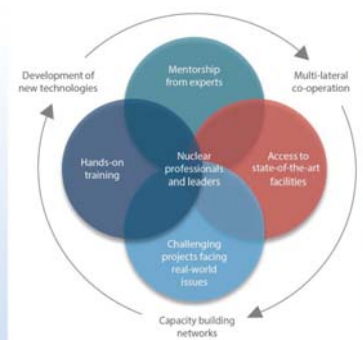
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Nuclear Education, Skills and Technology (NEST)

A multinational framework to maintain & build skills and to nurture the next generation of nuclear subject matter experts through transfer of practical experience and knowledge

Building up talented individuals is a **long-term investment**, for every country, **requiring strategic vision and involvement**



Added-values and benefits

- Fast track to leadership
- Multidisciplinary skills and competencies through hands-on training
- Access to state-of-the-art facilities
- Opportunity to develop a network through multinational co-operation
- Participation in challenging and innovative activities

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NEST Framework: Benefits



For the Next Generation of Nuclear Professionals

- Experience gained in relevant work jointly with experienced scientists, engineers and university professors
- Building a network of international contacts
- Opportunities for getting employment and/or better position



For Universities

- Education excellence connected to the state-of-the art in research organisations and industries bridging the gaps between the “know-why” and “know-how”;
- Education strategy consistent with energy and R&D policies



For Member States

- Building national critical skills among advanced students, post-doctoral appointees, young professionals
- Co-operation with other partners in NEA multinational projects
- Direct links with national policymakers for better energy policies and R&D priorities

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Benefits

- The NEA WP-IDKM will deal with IDKM issues both on short (*from decades to a few hundreds of years*) and long term (*millenia scale typical of long-lived radionuclides*).
- On short term, we have already experienced problems related to **the failure or the partial failure** in information, data and knowledge transfer across worker generations in RWM or decommissioning projects.
- The WP-IDKM will implement a **process of value realisation** for the results of the previous activities in the IDKM area, i.e. RepMet, RK&M and EGIRM. The tools and the approaches that the three groups developed will find real applications in the national context, expressing all of their sensible and substantial support for the development of the RWM programmes.

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Thank you for your attention



If you have questions of this presentation, contact Rebecca Tadesse [Rebecca.Tadesse@oecd-nea.org].

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