

Unclassified

NEA/RWM(2011)5/PROV

Organisation de Coopération et de Développement Économiques
Organisation for Economic Co-operation and Development

04-Mar-2011

English - Or. English

NUCLEAR ENERGY AGENCY
RADIOACTIVE WASTE MANAGEMENT COMMITTEE

NEA/RWM(2011)5/PROV
Unclassified

Draft Collective Statement of the Project on the Preservation of Records, Knowledge and Memory Across Generations

The draft collective statement is proposed to the RWMC for comment and endorsement in principle. It was written in order to document the current understanding in the field of preservation of records, knowledge and memory (RK&M) across generations and the willingness of the RK&M project to achieve progress in this area.

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JT03297529

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English - Or. English

PRESERVATION OF RECORDS, KNOWLEDGE AND MEMORY ACROSS GENERATIONS WHY DO WE NEED IT/WHERE DO WE STAND?

The preservation of Records, Knowledge and Memory (RK&M) is an integral part of radioactive waste management, supporting lengthy and complex decision-making processes across long operational and post-operational lifetimes. This is a subject that spans unprecedented time-horizons in which technical, scientific, societal and cultural information is interwoven. RK&M should thus be developed and preserved across generations and across specialist boundaries.

Several radioactive waste disposal programmes are now approaching the final stages of implementation. The importance of preserving RK&M is already evident in the area of decommissioning, and experience indicates that RK&M need to be actively managed from the start of the waste management programmes. This collective statement summarizes the current understanding of the relevant needs and challenges to be faced. It underscores the willingness of the organisations that are participating in the international NEA project¹ on the preservation of RK&M, to work together and support national programmes to move forward in this area.

Why do we need to preserve records, knowledge and memory?

Long-term projects of any nature are vulnerable to risks of RK&M loss. The reasons and mechanisms leading to loss of RK&M are very diverse, but preserving RK&M is a fundamental aspect of quality in establishing and running any long-term project. It must be taken into account in implementing national radioactive waste disposal programmes in order to:

- maintain confidence in the safety and security of the system by allowing for accurate and reliable review by the authorities and providing for visible and transparent oversight of disposal projects across time
- address concerns and answer requests from the public, especially local communities
- ensure that future generations can base their decision making for radioactive waste disposals on relevant and pertinent data
- promote awareness of past activities.

A central issue is therefore to formulate RK&M preservation methods and processes that are as durable as possible. In order to ensure robustness, an understanding is needed of the processes or incidents potentially leading to RK&M loss, in order to try to prevent such losses.

Where do we stand?

A number of studies have been undertaken in the past decades, both on the national and international level, to explore a variety of approaches to preserving RK&M across different timescales. These include both archives and markers. There are also national and international guidelines on why and how records and knowledge should be preserved and transmitted over time. Much less work is available on contextualising data for later use, on systematic identification of mechanisms for RK&M transfer, and on implementing a culture of RK&M-keeping in organisations.

It has been recognised that preserving RK&M initiatives should go beyond the keeping of archives, and be seen as providing a cultural link between the host communities and the site over time. Over longer

¹ Current members encompass representatives from Canada, Czech Republic, Finland, France, Hungary, Sweden, Switzerland, the United Kingdom, the United States and the International Atomic Energy Agency. The project has the support of the European Commission and is sponsored by the Radioactive Waste Management Committee of the NEA.

timescales, international cooperation is recognised as being crucial in providing shared meanings for markers and other very long-term memory-transmission tools. International cooperation has been identified as a catalyst to ensure that a wide range of approaches and experiences is considered, thus potentially reducing uncertainty related to variations in approach.

Scoping activities

The long-term preservation of RK&M starts by securing data in the short-term. Memory keeping rests both on a rolling system of records and knowledge management and, on complementary approaches designed to transfer memory directly into the distant future. (Fig 1)

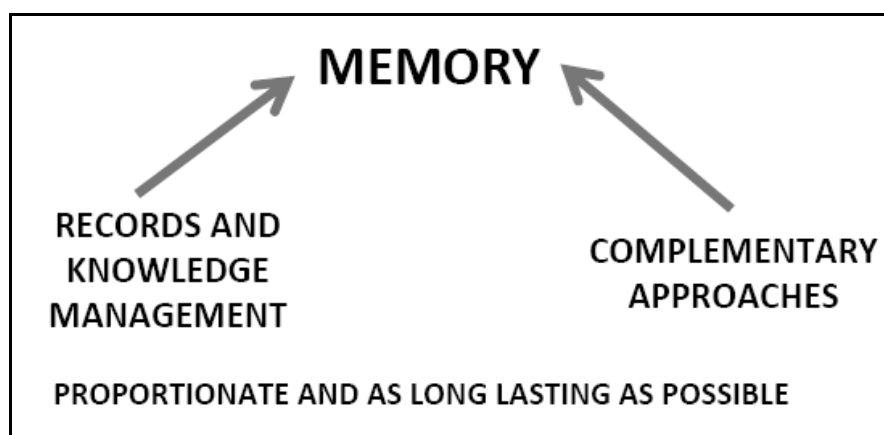


Figure 1 Contributions to long-term memory

In order to scope the issues, the following activities need to be undertaken:

- Reported work in the field of RK&M preservation and related areas, should be collected in a bibliography and regularly updated. Clear terminology should be established in order to avoid misunderstanding. This work will help to identify gaps.
- The different stages of the disposal process should be assessed and the data and contextual information (metadata) that must be collected and transferred over time determined.
- The criteria for selecting information and recording tools should be discussed and compiled. Examples of poor practice in preserving data should be analysed and mitigation and correction measures identified.
- Reasons and processes leading to loss of RK&M on all timescales should systematically be identified and potentially alleviating solutions should be formulated. Multi-disciplinary studies on these issues should be encouraged.

Challenges

To develop a consistent and common approach to the preservation of RK&M, the following challenges need to be addressed:

- Effective mechanisms should be established for all interested parties to work together both nationally and internationally.
- Various technical and administrative options for RK&M transfer from one generation to another and from one generation to a distant future should be assessed. Specialists from other areas, especially from the social sciences and the humanities, need to be included in this work.

- Actions to mitigate and adjust potential RK&M loss should be evaluated and must be implemented in a transparent and cooperative fashion by the project proponents and by the societal organisations that oversee such project.
- The technical and organisational perspective for RK&M preservation should be analysed taking account of the context of historical and societal evolution.
- Initiatives for international harmonised practices should be proposed in order to avoid unnecessary divergence.
- The economic challenges for long-term RK&M preservation must be analysed and allowance made for them in future programmes.

Summary

The international community is focusing on work to preserve RK&M across generations. The current position shows initial progress in individual programmes, but there is a need to internationalise the thinking, compare approaches, test potential solutions and share decisions. Future systems for preserving RK&M will need to be flexible and adaptable over time. They should implement the simplest possible techniques and support materials, but should not rely only on technological provisions. A “systemic” approach should be engaged whereby the various components of the system complement each other, provide for redundancy of message communication, and maximise the survivability of a recognizable message.

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