



20 Years of the NEA Regulators' Forum

Early years

During the formulation of its Strategic Plan in 1997-1998, the Nuclear Energy Agency (NEA) initiated a review of its committee structure, which enabled the Radioactive Waste Management Committee (RWMC) to enhance its work and address a number of recent subjects of interest.

As a result, the regulatory aspects of radioactive waste management (RWM) received heightened attention, along with stakeholder and decommissioning issues. Two existing working parties under the RWMC, the Performance Assessment Advisory Group (PAAG) and the Co-ordinating Group on Site Evaluation and Design of Experiments for Radioactive Waste Disposal (SEDE), were merged into the Integration Group on the Safety Case (IGSC), focused on the safety case for deep geological repositories. Two additional working parties were

created: the Forum on Stakeholder Confidence (FSC) and the Working Party on Decommissioning and Dismantling (WPDD). In order to better understand the regulatory issues to be addressed, the RWMC organised a workshop on "Regulating the Long-Term Safety of Radioactive Waste Disposal" in 1997 in Cordoba, Spain. The workshop programme was developed in co-operation with the Committee on Radiological Protection and Public Health (CRPPH) and the Committee on Nuclear Regulatory Activities (CNRA). One of the outcomes of the event was the recognition of the role of regulators and the relevance of increasing their visibility. In December 1998 the RWMC Regulators' Group (RWMC-RG) was established, with the intention of reinforcing the regulatory aspects as an integral part of the RWMC programme of work.

Sören Nörbby, RWMC Chair, Claudio Pescatore, Acting Head of Division, and later Hans Riotte, Head of Division, along with the NEA Secretariat, played a key role in transforming and launching the RWMC-RG. In developing this group, the RWMC Bureau held discussions with the CNRA, CRPPH and the then NEA Director-General, Luis Echàvarri.

At the launch of the RWMC-RG on 10-11 December 1998, it was decided that the group's principal objective would be to provide a mechanism for information exchange on topics of special interest to regulators as well as to enhance communication with other regulatory groups. An administrative structure for the RWMC-RG was established: (a) participation would be restricted to RWMC members belonging to regulatory bodies; (b) the group would inform the RWMC of its internal discussions, but its working topics and agenda would be generated internally; (c) its annual meetings would take place the day preceding the RWMC annual plenary meeting; and (d) Mr Auguste Zurkinden, from Switzerland, was to be elected as the group's first Chair (an office which he then held until 2015), with Claudio Pescatore serving as Secretariat. After the group's initial meeting, the Chair presented the initiative to the RWMC in 1999. Discussions highlighted the wish of all RWMC members for regulator/implementer dialogue to continue as in the past, and for regulators to continue to participate as independent individuals representing their

own respective member countries at plenary meetings. In the following year, the RWMC-RG felt it necessary to assert its identity and to be seen not as a sub-group of the RWMC, but rather as a group of RWMC members from regulatory organisations meeting separately to exchange on regulatory practice in a frank and protected setting. Consequently, in March 2000, the group opted for the designation "RWMC Regulators' Forum (RF)". This was formalised in 2001 when its new name and mandate were approved and the RF became an official NEA subsidiary body.

The RF's first major action was the production of a comparative compilation of national policy and regulatory frameworks with respect to radioactive waste, which resulted in a major NEA publication in 2004, *The Regulatory Control of Radioactive Waste Management: Overview of 15 NEA Member Countries*. In parallel, the RF held important internal exchanges to clarify the regulatory function in radioactive waste management, which also resulted in another major NEA publication, *The Regulatory Function and Radioactive Waste Management: International Overview*. Additionally, in those early years, the RF created strong and constructive connections with other NEA groups and committees, notably the Forum on Stakeholder Confidence (FSC), with whom the RF published the document *The Regulator's Evolving Role and Image in Radioactive Waste Management*.

Milestones and achievements

During its 20 years of operation, the RF has provided valuable support to member countries, as captured in various outcomes. The main method of exchanging experience, challenges, identified solutions and best practices has been the discussions at RF annual plenary sessions. However, the RF has not been limited to this type of activity. It has also organised a number of workshops on topics of interest, conducted surveys and issued NEA publications. The RF continues to work in close co-operation with other NEA working groups, international activities and organisations (the International Atomic Energy Agency, the European Commission, and others).

As its main achievements, the RF:

- collected information about national regulatory frameworks and obtained an understanding of safety regulation in long-lived and high-level waste disposal;
- studied the main safety regulation criteria in the disposal of such waste;
- analysed various aspects of RWM in member countries (e.g. the application of the graded approach, management of very low-level waste and decommissioning of nuclear installations and legacy management) and provided members with findings and possible solutions;

- organised workshops on various topics of interest, providing a forum for experts (regulators and others) to have broad discussions and seek solutions;
- shared results of such workshops to all members; and
- prepared NEA reports where the role of the regulatory body in the development of safe, effective and sustainable RWM programmes was presented.

The RF has conducted studies and surveys on regulatory issues to identify emerging challenges, needs and areas of interest in safety regulation. At its regular meetings the RF discusses several themes of interest to regulators captured in ongoing studies. The RF has also exchanged information with other NEA bodies, such as the CNRA and CRPPH, and with international organisations through workshops and other events. Some of the RF activities have been reported in publications that address the development and refinement of the regulatory system with a view to improving regulation and regulatory practice, illustrating challenges and issues, and further developing RF activities to address those issues.

The milestones of the RF are listed in detail in brochures issued in 2009 and 2021 and available on the dedicated RF web page www.oecd-nea.org/regulators-forum.

Practical value for member countries

National regulators recall their experiences of the RF to illustrate the practical benefits to their programmes of their participation.

Geert VOLCKAERT, FANC (Belgium)



In Belgium, the Federal Agency for Nuclear Control (FANC) prepares regulations and guidelines for the development of nuclear waste disposal installations. The activities of the Regulators' Forum and the interactions with other regulators in this framework helped FANC in their development. A typical example of this is the discussions at the Regulators' Forum about the optimisation of protection in the framework of geological disposal, taking into account the very long time periods that need to be considered. Other examples are the discussions about reversibility and retrievability in the framework of waste disposal and the significance that should be given to those terms. The activities and discussions at the Regulators' Forum, with members in a much more advanced stage of development of geological disposal, will for sure continue to help FANC when entering the pre-licensing phase for such a repository.

Haidy TADROS, CNSC (Canada)



The Canadian Nuclear Safety Commission (CNSC) is honoured to be a part of the Regulators' Forum Bureau. Benefits of being part of the Regulators' Forum include: the opportunity to learn from other world-class nuclear regulators; sharing and shaping regulatory experiences to improve safety to people and the environment; and participating in thought-provoking discussions on improving regulatory frameworks to address current and emerging safety requirements in the areas of radioactive waste management, decommissioning and management of legacy sites. Specifically, the CNSC has greatly benefitted from participating in conversations related to optimising safety case requirements of waste disposal facilities and installations, as well as sharing best practices and new regulatory approaches focused on pre-licensing activities. Congratulations on achieving this milestone anniversary. Wishing you continued success!

Jussi HEINONEN, STUK (Finland)



Finland is one of the leading countries in developing a DGR for high-level waste. In STUK we have developed ways to regulate this unique facility, as ONKALO has been progressing. The Regulators' Forum has been an excellent platform to get feedback about our planned regulatory approach. It has been important to get international support that we are on the right track. Workshops and seminars have been good opportunities for this type of sharing. As one concrete example, the Helsinki workshop in 2015 can be mentioned. At that event, we discussed regulators' challenges in siting and licensing of repositories.

Ichiro OTSUKA, NRA (Japan)



Japan hosted the Regulators' Forum Workshop 'Towards Transparent, Proportionate and Deliverable Regulation for Geologic Disposal' in 2009. The workshop findings help complete the understanding of the status of long-term safety regulations worldwide and provide the basis for determining which issues deserve the highest priority and which ones are closer to the solution at the international level. Japan had also been participating in many kinds of RF activities and benefitted from international experiences and best practices.

Felix ALTORFER, ENSI (Switzerland)



In the Swiss case, the work and initiatives of the Regulators' Forum had a positive impact on the development of the regulatory guidelines for deep geological repositories. Issues such as the appropriate choice of indicators, namely of dose and/or risk, and associated criteria, or the degree to which these criteria ought to be applied and their relationship to other arguments for safety, as well as the question of timeframes for their use, were an integral part whilst developing regulatory guidelines. The other field where Regulators' Forum initiatives and discussions were beneficial was the role of research and development carried out by and on behalf of the regulator.

Vision for the future

New role

The Regulators' Forum provides an environment in which all members have the opportunity to discuss, learn, and share the regulators' vision, experience and best practices to refine the regulatory system in the field of radioactive waste management and decommissioning. From a technical standpoint, the RF has a particular interest in examining new regulatory approaches and practices for radioactive waste management, decommissioning and legacy management arrangements (e.g. optimisation of RWM programmes, radioactive waste disposal activities, and application of robotics and other advanced technologies). The RF will support the ongoing RWMC work as well as the work of the CDLM. In line with its strategic vision, the Regulators' Forum will implement a holistic approach, taking into account economic, environmental and societal factors in all stages of radioactive waste management as well as decommissioning and legacy management processes.

The role of regulators remains predominantly focused on safety. Additionally, there is greater recognition of the importance of open communication among regulators, implementers and stakeholders and in engaging stakeholders in the early stages of RWM and decommissioning and legacy management projects.

New challenges

Typically considered "back-end" activities, programmes related to radioactive waste management and decommissioning have to be integrated into the entire nuclear fuel cycle, from the design of nuclear installations to the generation of the radioactive waste and its disposal. Optimisation of processes and activities at each phase with a holistic approach and strong co-ordination among different stakeholders is exceedingly important. The issue of optimising predisposal waste management is complex and unexplored in many member countries.

The challenges in developing practical guidance for the optimisation and active implementation of strategies for the back end of the nuclear cycle system have been identified. Regulators need to be involved early on in the decision-making process, considering interdependencies among all steps in radioactive and hazardous waste generation and management, establishing a stable financial mechanism throughout the life cycle of facilities, researching waste characterisation, and sharing the practical experience of decommissioning among stakeholders.

Regulators face challenges in the regulation and optimisation of RWM. For example, there is increasing reliance on international opportunities to access radioactive waste treat-

ment services, which drives a greater need for the proper exchange of information and knowledge between regulators in different countries and the proper integration of regulatory requirements.

The challenge for regulators lies in demonstrating to the public and other stakeholders that accepted and applied solutions are efficient and safe. Regulators should also be organisationally prepared to better react to rapidly changing situations (e.g. a pandemic).

The heightened public perception of risk also represents a challenge for regulators regarding the communication of risk and safety.

The large number of reactors that will be decommissioned in the coming years, as well as the remediation of legacy situations, also pose a challenge for the regulator. There is a need to develop flexible regulatory systems to handle a wide variety of circumstances and technologies.

Next RF decade

The advances made in the past decade in technology and nuclear development provide both challenges and opportunities for the regulator. Regulators should be more proactive in following these processes of technology development and should generate the new competencies needed to address the application of new, advanced technologies and methods.

The enhanced role of the regulator requires skills in communicating on technical topics and safety thresholds to the public and calls for the introduction of additional techniques, such as self-training by e-learning, to maintain and expand competencies.

The NEA can provide a platform for international collaboration to support regulators' competency management. This includes supporting multilateral exchange, networking platforms the transfer of knowledge, and training. Online events to share knowledge and competencies with young professionals (e.g. workshops, group-oriented seminars, task-oriented keynotes) could be organised. The Regulators' Forum should aim to strengthen the involvement of other NEA groups (e.g. the Working Party on Information, Data and Knowledge Management, the Expert Group on Building Constructive Dialogues between Regulators and Implementers in Developing Disposal Solutions for Radioactive Waste) and international organisations (e.g. the International Atomic Energy Agency, Western European Nuclear Regulators' Association) in RF efforts to achieve a broader exchange of ideas and expertise.

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