



# The NEA Regulators' Forum

## Regulatory approach to responsible and sustainable management of radioactive materials

For the sake of current and future generations, radioactive waste, decommissioning and legacy management must be handled in a safe, environmentally responsible, and sustainable manner. The regulators have a mission in the service of the public to ensure that safe and sound practices are adopted for the protection of people and the environment through open and transparent decisions and to deal with specific regulatory issues on radioactive waste management, decommissioning and legacy management in a timely manner.

### Regulators' Forum mandate and profile

The Regulators' Forum (RF) is a well-established forum of senior regulators with expertise in radioactive waste management, decommissioning and legacy management. The RF consists of regulators who participate in the work of the Nuclear Energy Agency (NEA) Radioactive Waste Management Committee (RWMC) or the NEA Committee on Decommissioning of Nuclear Installations and Legacy Management (CDLM).

The Regulators' Forum was established in 2001 and is open to any NEA country volunteering to participate. Current representation brings together regulatory bodies from: Australia, Belgium, Canada, Finland, France, Germany, Hungary, Italy, Japan, Korea, Norway, Russia, the Slovak Republic, Slovenia, Spain, Sweden, Switzerland, the United Kingdom and the United States. Both nuclear and environmental safety authorities are represented.

The RF may opt for the creation of ad-hoc groups in searching for solutions for particular subjects on radioactive waste management, decommissioning and legacy management. The ad-hoc groups, to which experts outside of the RF membership can be invited, are organised and co-ordinated by the members of the RF, with support and in consultation with other groups within the RWMC, the CDLM and other NEA groups.

The Forum provides its members with an opportunity for open discussion and learning about regulators' experiences and good practices in regulation with a view to refining the regulatory systems in this field and to enhancing collaboration and communications among regulators. The RF supports the work of both the RWMC and the CDLM through information exchange and by organising activities on regulatory issues. The RF is vigilant with respect to specific regulatory issues in the aforementioned areas as well as for the regulatory challenges

## Milestones and key studies: Surveys and workshops

2012	2014	2015	2017
Joint IGSC/RWMC-RF workshop "Preparing for the construction license of deep geological repositories"	Survey on the graded approach to regulation of radioactive waste management	Helsinki Workshop "Challenges to the Regulators in Siting and Licensing the Construction and Operation of Radioactive Waste Repositories"	Survey on gaining and maintaining competency for the regulator

in the development of new technologies such as robotics. The forum promotes the exchange of experience with other NEA committees and international organisations, and maintains a strong interaction with the working parties of the RWMC and the CDLM.

Effective interaction is promoted at RF meetings and workshops between regulators, implementers, R&D specialists, policy-makers and social scientists. Since its inception, the RF has been examining the nature of the regulatory system and how the regulatory function is fulfilled. In the technical area, the RF has particular interest in regulatory criteria and the regulatory aspects and safety implications of waste management arrangements, including optimisation and radioactive waste disposal activities, as well as emerging regulatory practices in the field of decommissioning and legacy management. In the area of regulation and society, the RF recognises the importance of keeping abreast of the ethical issues associated with our responsibilities to current and future generations, as well as the evolving societal expectations regarding the role of regulators including building public confidence and knowledge management within regulatory bodies.

The RF applies a holistic approach to provide support to the RWMC and the CDLM in the development of legislative, regulatory and organisational frameworks of the member countries to carry out projects in radioactive waste management, decommissioning and legacy management. Such frameworks ensure the proper distribution of responsibilities and interaction

between organisations working in these domains. For sustainable development, the RF is convinced that economic, environmental and societal aspects should be considered in radioactive waste management, decommissioning and legacy management processes at all stages.

### RF activities and publications

The Forum carries out studies and surveys on regulatory issues, often with the support of specialised parties of the RWMC or CDLM, and holds annual meetings and workshops on themes of particular interest to regulators, as well as exchanges of information with other NEA committees, such as the Committee on Nuclear Regulatory Activities and the Committee on Radiological Protection and Public Health (CRPPH). At regular meetings, information is exchanged on developments, study findings are discussed, and topical sessions allow members and outside speakers to address a central issue from many perspectives.

At workshops, specific topics are dealt with in depth, taking advantage of a wide range of expertise beyond traditional regulatory or technical specialists and with the involvement of international organisations. Participants also have the opportunity to learn and exchange information about member countries' national programmes on radioactive waste management, decommissioning and legacy management.

2018	2019	2020	2021
Joint RF/WPDD Workshop on Regulation of Decommissioning	Tromso Workshop “Regulatory Framework of Decommissioning, Legacy Sites and Wastes from Recognition to Resolution: Building Optimisation into the Process”; Survey on Regulating VLLW; Survey on Decommissioning	Workshop “The Multifactor Optimisation of Predisposal Management of Radioactive Waste”; Survey on Regulation of Legacy Management	NEA workshop on Competency Management of Regulators (COMAREG) - forthcoming

The RF has a policy of producing documents for wide distribution. Typically, these address the development and refinement of the regulatory system with a view to improving regulation and regulatory practice, to illustrating the nature of the underlying issues, and to further establishing the Forum as an important source for regulatory guidance. Publications and reports of the RF are available for download on the RF website at [www.oecd-nea.org/regulators-forum](http://www.oecd-nea.org/regulators-forum).

## The evolving role of regulators

The role of safety regulators has been expanded not only in rulemaking but also in building open communication among regulators, implementers and stakeholders and in promoting stakeholder involvement in the early stages of radioactive waste management, decommissioning and legacy management projects. Especially after the Fukushima Daiichi accident, skills in communication with the public and regulatory preparedness have been required of regulatory organisations. In performing their expanded role in radioactive waste management and decommissioning, regulators are expected to consider all key aspects in a holistic way, adopting a phased approach to support the development of regulation, traceability of decision making and accommodating stakeholders’ needs.

## Regulatory system and function of the regulatory bodies

Regulatory functions are carried out not only by technical regulatory authorities, but involve, especially at the policy level, other bodies such as Parliament, Government, and regional authorities. Additionally, technical regulatory authorities should work co-operatively in issuing guidance, implementing pre-licensing and licensing processes and carrying out control and supervision. The RF has found that the elements associated with a regulatory system may be conveniently depicted as a cycle that embraces the principle of continuous improvement, as illustrated in the figure “Regulatory cycle”.



The RF comparative study of the regulation of radioactive waste management in NEA member countries shows that there is no unique or best way to deliver the various elements of the regulatory cycle. The formal structures and organisational arrangements depend on the national constitutional structure, legal

and institutional framework, and, to a large extent, on national regulatory culture, e.g. expectations on how prescriptive regulation should be. In most cases, major regulatory decisions emerge only after co-ordination of a wide range of relevant and authoritative inputs, e.g. from central government departments and other governmental technical authorities, from local communities and independent advisory bodies or commissions.

### **Regulating waste management**

In radioactive waste management, the approach must be holistic and comprehensive (i.e. a “cradle to the grave” approach), including issues relating to pre-treatment, conditioning, storage, transport and disposal. Regulatory bodies should consider designing the regulatory framework. In addition, there are needs for further work on harmonisation of waste classification and guidance, especially for very low-level waste and in view of optimising the amount of radioactive wastes. The RF initiates task-oriented projects on quick and reliable waste characterisation and developing technical positions, recommendations and guidance for waste management.

### **Regulating decommissioning and legacy management**

In the long-term decommissioning programmes, revision and development of regulation and guidance on decommissioning activities are needed in a timely manner and with a clear, understandable explanation. Regulation and guidance on decommissioning activities and legacy management should be carefully prepared in a stepwise approach before the activities start in order to shorten the actual operation period. Regulatory frameworks addressing legacy sites and facilities should also be developed based on experience. The regulators’ scope should include the holistic application of the process of optimisation of protection, addressing all hazards and assessment of their risks to reach complete clean-up of the sites, and be flexible and adaptable to different circumstances in line with the graded approach. In the communication around

these aspects of regulatory work, it is important to share practical decommissioning experience in different types of facilities among stakeholders and to maintain dialogue during all decommissioning phases.

## **Challenges for the future**

Radioactive waste management programmes should be integrated into the whole nuclear fuel cycle, from generation of the radioactive waste to disposal, and should be optimised with a holistic approach and strong co-ordination among different stakeholders. The issue of optimising predisposal waste management is complex and largely unexplored. The challenges are identified in developing practical guidance for optimisation and active implementation of strategies for the back-end of the nuclear cycle system. There are needs for the early involvement of regulators in decision making, establishing a stable financial mechanism through the whole life cycle of facilities, producing research on waste characterisation and sharing the practical experience of decommissioning among stakeholders.

Regulators face new challenges in the regulation and optimisation of radioactive waste management as they are confronted with the worldwide Covid-19 pandemic, as well as the increasing reliance on the use of international opportunities to access radioactive waste treatment services, driving a greater need for the efficient exchange of information and knowledge between regulators in different countries and ensuring proper integration of regulatory requirements.

The sweeping progress in technology in the past decade is another challenge for regulators. Regulators should be more proactive in generating the new competencies needed to address the application of new, advanced technologies and methods. It will also be key to demonstrate to stakeholders and the general public how newly accepted technologies and methodologies can contribute to safety.