



# Radioactive Waste Management: The Role and Image of the Nuclear Safety Regulator

**R**adioactive waste management is regulated through a complex system of organisations and players. Contributing to the regulatory system at the national level are the nuclear safety regulator; policy actors such as parliament, government, and regional and local authorities; oversight committees including stakeholder representatives and specialists in various domains; supporting technical research bodies; and others. Within this complex system, the nuclear safety regulator has a central role as the competent authority (or authorities) with legal responsibility for nuclear safety and environmental protection. This role requires close engagement with the waste management implementer and with a broad range of stakeholders (defined as any institution, group or individual with an interest or a role to play in the process).

## Who is the nuclear safety regulator?

The nuclear safety regulator is the competent authority (or authorities) with legal responsibility for regulating nuclear safety and environmental protection. In some countries, this role is performed by a single organisation, while in other countries separate organisations are responsible for the two activities. An important international trend is to ensure a clear separation between the nuclear safety regulators and the energy policy proponents. Today, the nuclear safety regulator is typically set up as an independent institution, often reporting to the country's parliament, council of ministers or president. In other cases, the nuclear safety regulator is under the supervision of a ministry (such as health or the environment) that has no role in supporting the nuclear industry.

## The nuclear safety regulator's responsibilities

The nuclear safety regulator has a mission to serve the public; its responsibility is to protect public health and the environment. Mandated activities include:

- defining nuclear safety, radiation protection and environmental protection requirements;
- issuing guidance on safety assessment methodology and documentation;
- reviewing the implementer's safety analysis as a basis for licensing of waste management and disposal activities and facilities;
- inspecting and reviewing construction, operations and closure of the regulated facilities to ensure compliance with licensing conditions;
- providing information to political authorities, the public and others.

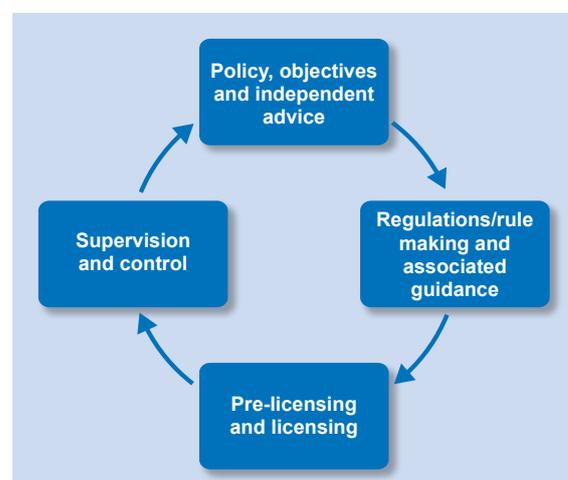
## The regulatory cycle

The modern regulatory system is depicted as a cycle embracing the principle of continuous improvement (Figure 1).

There is no single best way to deliver the various elements of the regulatory cycle. The formal structures' organisational arrangements depend on the national and constitutional structure, legal and institutional framework and, to a large extent, on national regulatory culture (e.g. expectations concerning prescriptive regulation).

In order to increase public confidence in its mandate, the nuclear safety regulator needs to display competence, openness and transparency, clarity, accountability and independence; it must also understand societal concerns and know how to address them.

Figure 1 - Regulatory cycle



## The evolving role of the nuclear safety regulator

The traditional role of the nuclear safety regulator centred on developing safety standards and guidance, and on evaluating an implementer's safety report. In addition to this traditional role, today increased attention is being given to transparency through the provision of information to the public and stakeholders, and through the facilitation of public understanding of the regulatory process and associated decision making. Ideally, and subject to any legal constraints, the regulator should be a "guarantor" of safety and a "people's expert", acting as an accessible resource to stakeholders addressing safety concerns.

### Traditional and evolving roles and responsibilities of the nuclear safety regulator

#### Traditional role:

- defining regulatory requirements and guidance;
- defining a regulatory process and making choices regarding regulatory options;
- reviewing the implementer's safety options and design, and requesting complementary information or modifications. Making decisions on steps forward;
- reviewing and validating operational rules;
- controlling the compliance of operations with operational rules;
- communicating the bases of regulatory decisions;

#### ... and the evolving role:

- maintaining open and impartial regulatory processes;
- providing stakeholders with understandable explanations of the mechanisms related to regulatory oversight and decision making, including opportunities for stakeholder participation;
- serving as a source of information and expertise for local communities.

## Transparency in the regulatory role

Addressing the societal demand for transparency in regulatory processes and decision making is of growing importance to the role of the nuclear safety regulator. Areas such as information provision, rule making and site-related safety assurance are benefiting from increased transparency, achieved for example through the improved use of participatory methods and wider engagement with stakeholders, including the general public.

The regulatory framework needs to determine when, where and how public and stakeholder input can be accommodated in the nuclear safety regulator's decision-making process and ensure that all stakeholders are informed well in advance. As a minimum, the regulator needs to communicate the basis for its decisions.

The decision-making process in radioactive waste management should be seen in the context of a well-structured dialogue between implementer, nuclear safety regulator, political decision makers and the general public. The nuclear safety regulator has a mission in its service to the public. Its responsibility is to protect public health and the environment. The traditional role of the nuclear safety regulator has been centred on developing safety standards and guidance and on evaluating an implementer's safety report. In addition to this traditional role, today increased attention is being given to transparency through the provision of information to the public and stakeholders, and through the facilitation of public understanding of the regulatory process and associated decision making. Ideally, and subject to any legal constraints, the regulator should be a "guarantor" of safety and a "people's expert", acting as an accessible resource to stakeholders addressing safety concerns.

The nuclear safety regulator needs to establish and maintain open channels of communication with many stakeholders, such as the general public, implementers, local communities, government departments, parliament, concerned action groups and others. Communication with national and local decision makers to provide information and views on matters within the regulator's statutory responsibilities is also important. To identify public information needs, a nuclear regulator may undertake research on societal concerns, risk perceptions, values and interests. Direct dialogue with stakeholders can also provide an opportunity to refine mutual understanding.

## Early involvement in pre-licensing activities

The level of public involvement in pre-licensing activities and its potential influence in the decision-making process are dependent on how the nuclear safety regulator's role is defined in the national legal framework for radioactive waste management.

Subject to any legislative constraints, benefits can be gained from the early engagement of the nuclear safety regulator and the potential host communities during the pre-licensing phases. Often, it is during the pre-licensing phases, and well before any regulatory decision is made, that public concerns emerge, which may have implications for decision makers at national and local levels.

During the pre-licensing phases, the nuclear safety regulator is increasingly providing informal guidance and recommendations regarding the technical options selected by the implementer of, for example, a radioactive waste storage facility or a repository for spent nuclear fuel. This model of "informal" dialogue between implementer and regulator requires a well-defined interaction process that secures public confidence and ensures that regulatory licensing decisions remain independent and unconstrained by early exchanges.

## Interaction with local authorities

An important element of the nuclear safety regulator's role is to develop and maintain dialogue with local authorities. Local authorities, such as municipalities or local councils, are often key decision makers in the processes designed to develop facilities for the long-term management of radioactive waste. This is particularly true when they participate on a voluntary basis or have veto rights. Local authorities can also provide a route for wider dialogue between the nuclear safety regulator and the public. In its interactions with local authorities, the nuclear safety regulator needs to avoid any intervention in issues or points of procedure during a siting process for a radioactive waste management facility as this might compromise its neutrality and independence.