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60 Years

Atoms for Peace and Development

The Licensing Process and the role of the Regulator: Elements of the IAEA's Safety Standards

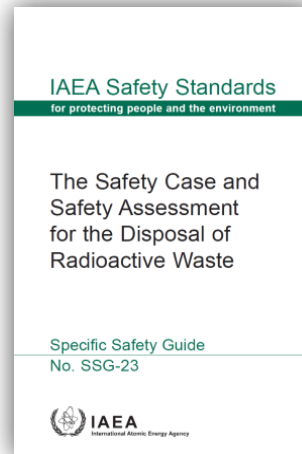
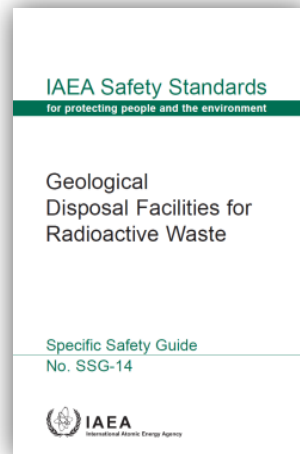
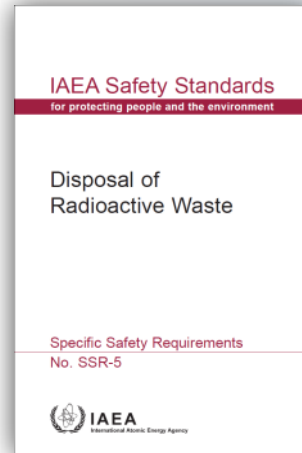
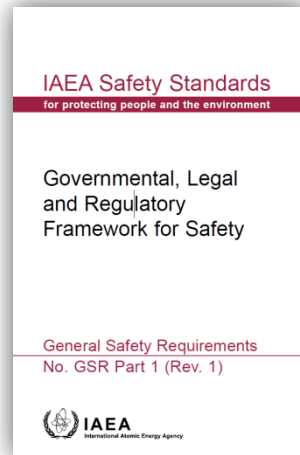
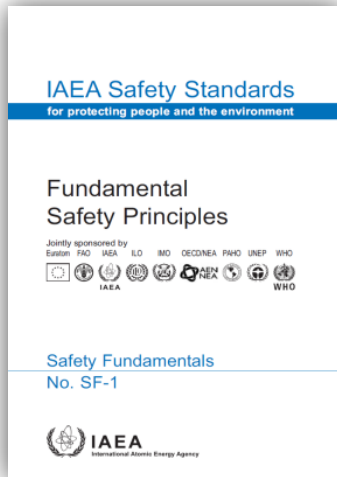
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Safety requirements and guides - Joint Convention



Joint Convention on the
Safety of Spent Fuel
Management and on the
Safety of Radioactive
Waste Management

Safety fundamentals

- **Policy document** of the IAEA
Safety Standards Series:

States the basic objectives, concepts and principles involved in ensuring protection and safety



- 1 Objective
- 10 safety principles

- Responsibility for safety
- Role of government
- Leadership and management for safety
- Justification of facilities and activities
- Optimisation of protection
- Limitation of risks to individuals
 - **Protection of present and future generations.**
- **People and the environment, present and future, must be protected against radiation risks**
- Prevention of accidents
- Emergency preparedness and response
- Protective actions to reduce existing or unregulated radiation risks

Disposal – Safety Requirements

Applicable to disposal of all types of waste in designed disposal facilities

Covers

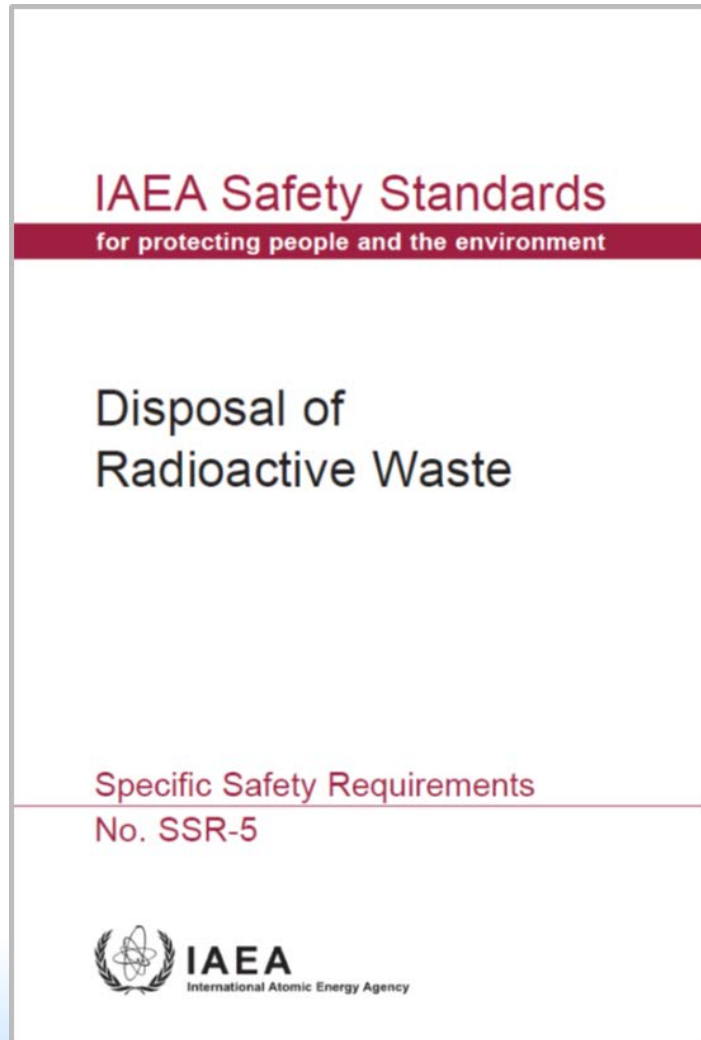
- Operational phase
- Post-closure phase

Does not address

- Broader issues of site selection
- Transportation of waste to the site (SSR-6)
- Non radiological environmental impact

Stakeholder involvement important, but beyond the scope of the standard

A total of 26 requirements



SAFETY REQUIREMENTS DISPOSAL OF RADIOACTIVE WASTE

- REQUIREMENTS FOR **PLANNING DISPOSAL FACILITIES**
 - LEGAL AND ORGANIZATIONAL FRAMEWORK
 - SAFETY APPROACH
 - SAFETY DESIGN PRINCIPLES
- REQUIREMENTS FOR THE **DEVELOPMENT, OPERATION AND CLOSURE OF DISPOSAL FACILITIES**
 - FRAMEWORK FOR DISPOSAL
 - THE SAFETY CASE AND SAFETY ASSESSMENT
 - STEPS IN THE DEVELOPMENT, OPERATION AND CLOSURE OF DISPOSAL FACILITIES
- REQUIREMENTS FOR **ASSURANCE OF SAFETY**
- **EXISTING DISPOSAL FACILITIES**

Requirement 1: Government responsibilities

The government is required to provide an appropriate **national legal and organizational framework** within which disposal facilities for radioactive waste can be sited, designed, constructed, operated and closed.

This shall include:

- the confirmation at a national level of the **need for different types of disposal facilities**;
- the definition of the **steps** in the development and **licensing for different types of facility**;
- the **clear allocation of responsibilities**,
- the **securing of financial and other resources**,
- the provision of **independent regulatory functions** related to each planned disposal facility.

Requirement 2: Regulatory body responsibilities

The regulatory body shall:

- establish the regulatory requirements for the development of each type of disposal facility
- set out the procedures for meeting the requirements for the various stages of the licensing process
- set conditions for the development, operation and closure of each individual disposal facility
- carry out such activities as are necessary to ensure that the conditions are met.

Procedures and responsibilities of the regulatory body

may include:

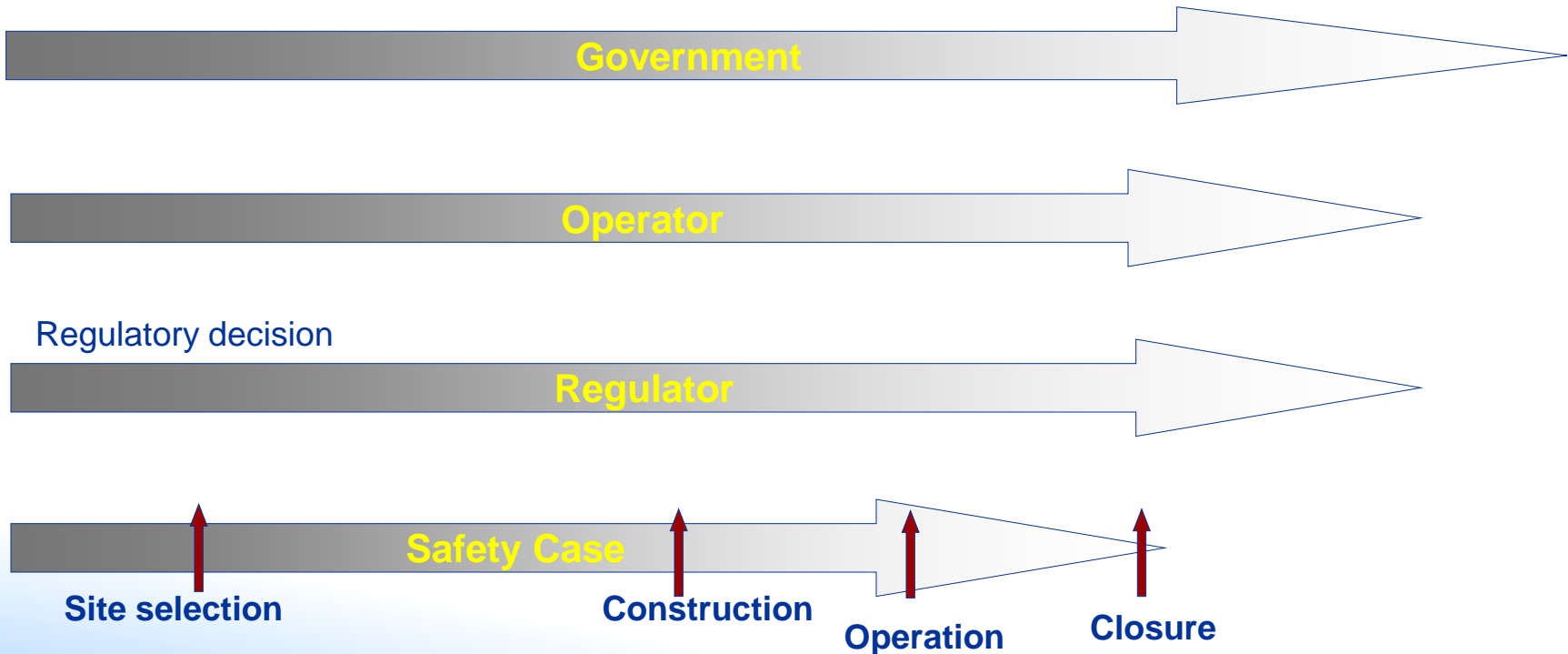
- Specification of the **information to be supplied** by the operator;
- **Review** of the required **submissions and assessment** of the compliance with regulatory requirements;
- **Issue of approvals and licenses** and setting of **conditions** in conformity with legislation and regulations;
- **Inspection and audit** of the operator's data gathering, safety assessment and activities in construction and operation to ensure quality and compliance with terms of approvals and licenses;
- **Periodic reviews** of the procedures for approvals, licenses and inspections, to determine their continued suitability or the need for amendments;
- Involvement of **interested parties**;
- Requirements for **termination of regulatory control**

Requirement 11 of SSR-5: Step by step development and evaluation of disposal facilities

*Disposal facilities shall be developed, operated and closed in a **series of steps**, each supported, as necessary, by **iterative evaluations** of the **site**, of the options for **design, construction, operation and management**, and of the **performance and safety** of the disposal system.*

Project stages / time frame

Pre-operational period				Operational period	Post-closure period	
Concept	Siting	Development		Operation	Post closure	
		Design	Excavation	waste emplacement	IC	Beyond IC



Licensing process

Responsibility of the regulatory body to implement the authorization and licensing processes

responsibility to review, approve or reject applications, implement an inspection program and require operators to take corrective measures where necessary

GSR PART 1

Requirement 23: Authorization of facilities and activities by the regulatory body

- **Authorization** by the regulatory body, including specification of the **conditions necessary for safety**, shall be a prerequisite for all those facilities and activities that are not either explicitly exempted or approved by means of a notification process.

Requirement 24: Demonstration of safety for the authorization of facilities and activities

- The **applicant** shall be required to submit **an adequate demonstration of safety** in support of an application for the authorization of a facility or an activity.

Evaluation of safety and licensing process

- The regulatory body has to **establish and document**:
 - the **procedures** for its use in **evaluating the safety** of a geological disposal facility and
 - the **procedures** that **operators are expected to follow** in the licensing process and in demonstrating compliance with the safety requirements

Organization of Regulatory Body

- Capable of implementation of its functions (resources)
- Commensurate to the facilities and activities
- **Effective independence**
- Possible use of **technical support (TSO)**
- **Management system**
 - Staffing and training
 - Advisory bodies
 - Relations with the operators
 - International cooperation

Organization of the Regulatory body (cont')

The regulatory body :

- To arrange for **independent research and assessments**,
 - It may not be necessary to undertake independent research if the regulatory body is satisfied that the operator is undertaking appropriate research that is of sufficient quality and that is subject to independent expert review
- To participate in **international cooperation** as necessary in order to carry out its regulatory functions. It should also
- **Periodically review** the adequacy of its regulations and guidance.

Regulations and guidance

- In developing regulations, guidance and other regulatory criteria specific to geological disposal facilities, the regulatory body should ensure consistency with the national policy
- Regulations and guidance may include:
 - Radiation protection criteria and environmental protection criteria for operational and post-closure safety;
 - Requirements for the content of the safety case of a disposal facility,
 - Criteria and requirements for the siting, design, construction, operation and closure of disposal facilities;
 - Criteria and requirements for the waste, waste form, disposal container, any backfill and sealing material and other components of the waste package to be disposed of;
 - Requirements for involvement of interested parties.



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