



United Arab Emirates

Regulation

Regulation for Pre-disposal Management of Radioactive Waste (FANR-REG-26)

Version 0

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Definitions

Article (1)

For purposes of this regulation, the following terms shall have the meanings set forth below. Other capitalised terms used but not defined herein shall have the meanings ascribed to them in Article 1 of the Federal Law by Decree No. 6 of 2009 Concerning the Peaceful Uses of Nuclear Energy (the Law):

Clearance	Removal of Radioactive Material or radioactive objects from any further Regulatory Control by the Authority.
Conditioning	The Operations that produce a Waste Package suitable for handling, transport, Storage and/or Disposal. Conditioning may include the conversion of the Radioactive Waste to a solid form, enclosure of the Radioactive Waste in containers and, if necessary, provision of an Overpack.
Overpack	A secondary (or additional) outer container for one or more Waste Package(s) used for handling, transport, Storage and/or Disposal.
Pre-treatment	Any or all operations prior to waste Treatment such as collection, segregation, chemical adjustment and decontamination.
Pre-disposal	Any waste management steps carried out prior to Disposal such as Pre-treatment, Treatment, Conditioning, Storage and transport activities.
Processing of Radioactive Waste	Any operation that changes the characteristics of Radioactive Waste including Pre-treatment, Treatment and Conditioning.
Safety Case	A collection of arguments and evidence in support of the Safety of a Facility or Activity including the findings of a Safety Assessment and a statement of confidence in these findings.
Treatment	Operations intended to benefit Safety by changing the characteristics of the Radioactive Waste. Three basic Treatment objectives are (a) volume reduction (b) removal of radionuclides from the Radioactive Waste (c) change of composition.
Waste Package	The product of Conditioning that includes the waste form and any container(s) and internal barriers (e.g. absorbing materials and liner) as prepared in accordance with requirements for handling, transport, Storage and/or Disposal.

Scope

Article (2)

This regulation addresses the Pre-disposal management of Radioactive Waste arising from a Regulated Activity with Regulated Material other than in Nuclear Facilities. The requirements for the Pre-disposal management of Radioactive Waste from Nuclear Facilities are in the Authority's Regulation for Radiation Protection and Predisposal Radioactive Waste Management in Nuclear Facilities (FANR-REG-11). The requirements for Disposal are not included in this regulation.

General Requirements

Article (3)

1. As determined by Article 40(1) of the Law, the Licensee is responsible for the safe management and Storage of Radioactive Waste from its generation until its delivery to the entity designated by a decision of the Cabinet of State for the purpose of Disposal.
2. The Licensee is responsible for the Safety of Pre-disposal Radioactive Waste Management Facilities and Activities. The Licensee shall carry out a Safety Assessment and shall develop a Safety Case for each identified waste stream and shall ensure that the siting, Design, Construction, Commissioning, Operation, shutdown and Decommissioning of the Pre-disposal Radioactive Waste Management Facilities are carried out in compliance with this regulation.
3. The Licensee shall implement measures to ensure an integrated approach to Safety, security and safeguards in the Pre-disposal management of Radioactive Waste.
4. The Licensee shall take into account interdependences among all steps in the Pre-disposal management of Radioactive Waste as well as the impact of the anticipated Disposal option as it becomes known so that the Safety, security and safeguards aspects and the effectiveness of the Pre-disposal management of Radioactive Waste may be considered in an integrated manner.
5. The Licensee shall maintain an up-to-date inventory of all Radioactive Waste that is generated, stored or transferred by or on behalf of the Licensee.
6. The Licensee shall apply the protection and Safety programme established in accordance with Article (12) of Regulation 24 for Basic Safety Standards for Facilities and Activities involving Ionising Radiation other than in Nuclear Facilities (FANR-REG-24), as applicable for all steps and elements of the Pre-disposal management of Radioactive Waste.

Steps in the Pre-disposal Management of Radioactive Waste

Article (4)

1. The Licensee shall identify and control all Radioactive Waste and keep Radioactive Waste to the minimum practicable.
2. The Licensee shall consider the authorised Discharge of effluents and the Clearance of material after Processing and/or a sufficiently long period of Storage in accordance with Article (6) of FANR-REG-24.
3. The Licensee shall consider re-using and recycling the material provided that Radiation Protection objectives are met in accordance with Article (6) of FANR-REG-24 in order to reduce the amount of Radioactive Waste that needs further Processing or Storage.

Article (5)

The Licensee, at the various steps in the Pre-disposal management of Radioactive Waste, shall:

- characterise the Radioactive Waste in terms of its physical, mechanical, chemical, radiological and biological properties; and
- classify it appropriately, including from the perspective of its future disposal.

Article (6)

With regard to the Processing of Radioactive Waste that is unsuitable for authorised Discharge, authorised use or Clearance, the Licensee shall take into account the characteristics of the Radioactive Waste and the demands imposed by Pre-treatment, Treatment, Conditioning, transport, Storage and Disposal of the Radioactive Waste. The Licensee shall design and produce Waste Packages so that the Radioactive Material is appropriately contained during both normal Operation and in Accident conditions that could occur in the handling, Storage, transport and Disposal of the Radioactive Waste.

Article (7)

1. The Licensee shall store Radioactive Waste in such a manner that it can be inspected, monitored, retrieved and preserved in a condition suitable for its subsequent management. The Licensee shall take due account of the expected period of Storage and apply, to the extent possible, passive Safety and security features.
2. For long-term Storage, the Licensee shall take measures to prevent degradation of the Radioactive Waste containment.

3. Appropriate environmental monitoring shall be implemented by the Licensee to periodically confirm the integrity of the Radioactive Waste containment. The frequency of monitoring shall be approved by the Authority.

Article (8)

The Licensee shall ensure that Radioactive Waste Packages and unpackaged Radioactive Waste that are accepted for Processing or Storage conform to criteria that are consistent with the Safety Case required by Article (9) below.

Pre-disposal Radioactive Waste Management Facilities and Activities

Article (9)

1. The Licensee shall prepare a Safety Case and a supporting Safety Assessment for the development and Operation of any Pre-disposal Radioactive Waste Management Facilities and Activities. The Licensee shall review and update the Safety Case and its supporting Safety Assessment as necessary and as requested by the Authority.
2. The Licensee shall include in the Safety Case a description of how all the Safety aspects of the site, the Design, Operation, shutdown and Decommissioning of the Facility and the managerial controls satisfy the requirements of this regulation.
3. The Licensee shall ensure that the Safety Case and its supporting Safety Assessment are documented at a level of detail and to a quality sufficient to demonstrate Safety, to support the decision at each stage of the development of the Facility and to allow for the independent review and approval by the Authority of the Safety Case and Safety Assessment. The documentation shall be clearly written and shall include justification for the approaches taken in the Safety Case.
4. The Licensee shall carry out periodic Safety reviews and shall implement any Safety upgrades arising from this review and from operating experience. The results of the periodic Safety review and operating experience shall be reflected in the updated version of the Safety Case for the Facility.

Article (10)

The Licensee shall ensure that any Pre-disposal Radioactive Waste Management Facilities shall:

- be located and designed so as to ensure Safety and security for the expected operating lifetime of the Facility under both normal and possible Accident conditions and for their Decommissioning;



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- be constructed in accordance with the Design as described in the Safety Case;
- be commissioned in a way to verify that the equipment, structures, systems and components, and the Facility as a whole, perform as planned;
- be operated by trained personnel in accordance with documented procedures;
- be maintained to ensure safe performance;
- have an Emergency Preparedness and response plan consistent with the plan for any associated Facility or Activity; and
- have a Decommissioning plan consistent with the plan for any associated Facility.

Article (11)

The Licensee shall record the details of any Radioactive Material and radioactive objects that, after Clearance by the Authority, have been disposed of at any Radioactive Waste Management Facility. The record shall contain:

- the quantity of Radioactive Material or radioactive objects that has been disposed of;
- the nuclides involved and their activities;
- the dates of Disposal; and
- the recipient for Disposal of the cleared Radioactive Material or radioactive objects.