



UAE Policies and Strategies for Radioactive and Nuclear Waste Management

The safe and efficient management of radioactive waste is a defining objective for the UAE's peaceful nuclear power programme. The UAE Government works on establishing safe and secure ways of managing the radioactive and nuclear waste in order to protect human health and the environment.

"In the event that the UAE deploys nuclear power plants within its territory, it will maintain a high level of safety in the management of spent fuel and radioactive waste. An appropriate measures would be established to ensure protection against radiological hazards at all stages of spent fuel and radioactive waste management, and emergency plans would be implemented at waste management and spent fuel facilities."

UAE Nuclear Policy

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Spent Fuel Management

Federal Law by Decree No. 6 of 2009 Concerning the Peaceful Uses of Nuclear Energy (i.e. the Nuclear Law) prohibits the design, construction, development and operation of facilities for enrichment or reprocessing of spent fuel in UAE.

The import of spent nuclear fuel and waste derived from energy application outside UAE for the purpose of long-term storage or disposal is also prohibited.

The Nuclear Law charges the Federal Authority for Nuclear Regulation (FANR) with the responsibility for issuing licenses for regulated radioactive materials in the federal territory.

In compliance with its international obligations in this area, the UAE acceded to the *Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management* under the auspices of the IAEA in July 2009.

In October 2011, the Government submitted to the IAEA its first National Report on compliance with the obligations of the Joint Convention reviewed by Contracting Parties at their *4th Review Meeting*. The Second National Report, which outlined progress made to protect UAE residents and the environment from radiological and other hazards potentially posed by spent nuclear power plant fuel and radioactive waste was presented to the 5th Review Meeting in May 2015. The Second National Report also described the UAE's plans for managing radioactive waste and spent fuel prior to its disposal. These National Reports are made available on FANR website: www.fanr.gov.ae

Spent Fuel is highly radioactive and thermally hot, and requires remote handling and proper shielding. The spent fuel from nuclear facilities contains highly-radioactive fission products plus other heavy elements like uranium and plutonium. Spent fuel is usually temporarily stored in large water-cooled pools and/or in dry storage casks at nuclear facilities prior to its final disposal at a specific disposal site.



Currently the UAE is considering an approach to spent fuel management whereby timely national solutions will be pursued and developed.

Emirates Nuclear Energy Corporation (ENEC) has taken the following measures for the management of spent fuel at the Barakah Nuclear Power Plant (BNPP) site:

- The reactor spent fuel pool is designed to have sufficient capacity for storage of spent fuel assemblies for 20 years of operation for each BNPP unit.
- ENEC intends to establish an independent spent fuel storage installation (ISFSI) to support on-going operations. The ISFSI will be established before the spent fuel storage pool reaches capacity.
- ENEC is looking at long-term spent fuel disposal options which include take-back or disposal.

Radioactive Waste Management

Radioactive waste, primarily low and intermediate level waste, is typically stored on-site by licensees either until it has decayed away and can be disposed of as ordinary waste or until amounts are large enough for shipment to a low or intermediate level waste treatment and/or disposal site in containers approved for disposal.

The Nuclear Law stipulates the responsibility of licensees to safely manage and store radioactive waste from its creation until delivery to an entity designated by the UAE Cabinet to manage disposal of such waste.

The Nuclear Law also states that the UAE Cabinet shall issue a policy regarding long-term management and disposal of radioactive waste and identify the entity in charge of implementing the policy. It also states that the radioactive waste will become property of the State from the time of its delivery to the State or to the entity designated by the Cabinet. The UAE will develop appropriate mechanisms and facilities for the domestic disposal of all low and inter-

Radioactive Waste is a by-product from nuclear reactors or industrial, research and medical facilities using radiation sources. It also arises from the decommissioning of nuclear reactors. There are two broad classifications: high level or low and intermediate level waste. High level radioactive waste results primarily from the fuel used by nuclear reactors to produce electricity, and is referred to as “spent fuel”. Low and intermediate level radioactive waste results from reactor operations and from medical, academic, industrial, and other commercial uses. It is referred to as radioactive waste.

mediate level waste generated by all present waste generators and any future nuclear facilities in the UAE via the above mentioned entity.

The design of the Barakah Nuclear Power Plant (BNPP) in the Western Region of Abu Dhabi includes an interim storage facility for the storage of low and intermediate waste at the nuclear facility for a minimum of 10 years.

The UAE also has medical facilities that use nuclear medicine and radiotherapy that generates small amounts of radioactive waste, which, in turn, will then be stored on their own premises or appropriately discharged. Most licensees return their used radioactive sources to the manufacturer. The licensee’s radioactive material inventory is included in FANR’s Regulatory Authority Information System (RAIS).

Additional Information

Detailed information about Nuclear Waste Management can be found in FANR regulations, specifically:

- FANR Regulation 11 for Radiation Protection and Predisposal Radioactive Waste Management in Nuclear Facilities.
- FANR Regulation 24 on Basic Safety Standards for Facilities and activities involving Ionizing Radiation other than in Nuclear Facilities.
- FANR Regulation 26 for Predisposal Management of Radioactive Waste.