

## **Regulation**

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# **Regulation for an Application for a Licence to Operate a Nuclear Facility (FANR-REG-14) 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 meaning 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):

**Accident Conditions** Deviations from Normal Operation more severe than Anticipated Operational Occurrences, including DBAs and Severe Accidents.

**Anticipated Operational Occurrence** An operational process deviating from Normal Operation which is expected to occur at least once during the operating lifetime of a Nuclear Facility but which, in view of appropriate Design provisions, does not cause any significant damage to Items Important to Safety or lead to Accident Conditions.

**Design Basis Accident (DBA)** Accident Conditions against which a Nuclear Facility is designed according to established Design criteria, and for which the damage to the fuel and the release of Radioactive Material are kept within authorized limits.

**Design Basis Threat** The largest reasonable threat against which the licensee shall be expected to defend. It describes the attributes and characteristics of potential insider and/or external adversaries, who might attempt unauthorized removal of Nuclear Material or radiological sabotage, against which a Physical Protection system is designed and evaluated.

**Facility Safeguards Plan (FSP)**

A plan that describes all tasks that must be completed to fully address the Facility's safeguards and import/export obligations. The plan must include the associated timelines to complete those tasks and detail the current progress on those tasks.

**Hostile Event**

An act directed toward a Facility or its personnel that includes the use of violent force to destroy equipment, take hostages, and/or intimidate the Licensee to achieve an end. This includes attack by air, land or water using guns, explosives, projectiles, vehicles or other devices used to deliver destructive force.

**Independent Safety Verification (ISV)**

A written verification performed by suitably qualified and experienced individuals, who did not participate in the original Safety Assessment, to determine whether the approach taken in conducting such Safety Assessment was reasonable and in accordance with international best practice.

**Items Important to Safety**

An item that is part of a Safety Group and/or whose malfunction or failure could lead to radiation exposure of the site personnel or members of the public, including:

- Those SSCs whose malfunction or failure could lead to undue radiation exposure of site personnel or members of the public;
- Those SSCs that prevent Anticipated Operational Occurrences from leading to Accident Conditions; and
- Those features that are provided to mitigate the consequences of malfunction or failure of SSCs.

**Normal Operation**

Operation within specified operational limits and conditions. for a Nuclear Facility this includes start-up, power operation (including low power), shutting down and shutdown, maintenance, testing and refuelling.

<b>Physical Protection Plan</b>	A plan that describes the duties and responsibilities of members of the security organisation. The plan shall address: organisation and staffing; Physical Protection including the designation of protected areas and vital areas; guard training and qualification; information security; cyber security; and responses to security contingencies including consideration of concurrent Nuclear Safety related Emergencies and security threats.
<b>Postulated Initiating Event (PIE)</b>	An event identified in Design as leading to Anticipated Operational Occurrences or Accident Conditions. This means that a PIE is not an accident itself; it is the event that initiates a sequence and that leads to an operational occurrence, a DBA or a Severe Accident depending on the additional failures that occur. Typical examples are: equipment failures (including pipe breaks), human errors, human induced events and natural events.
<b>Probabilistic Risk Assessment (PRA)</b>	<p>A comprehensive, structured approach to identifying failure scenarios constituting a conceptual and mathematical tool for deriving numerical estimates of risk.</p> <p>Level 1 comprises the assessment of failures leading to the determination of the frequency of core damage.</p> <p>Level 2 constitutes the assessment of containment response and leads to the determination of frequency of containment failure resulting in release to the environment of a given percentage of the reactor core's inventory of radionuclides.</p>
<b>Safety Analysis Report (SAR)</b>	The detailed demonstration of the Safety, security and safeguards of a Nuclear Facility presented in the form of an integrated report that presents the necessary and sufficient information in support of the Licence application for authorisation of any Regulated Activities requested.
<b>Safety Group</b>	The assembly of equipment designated to perform all actions required for a particular PIE to ensure that the limits specified in the design basis for Anticipated Operational Occurrences and DBAs are not exceeded.
<b>Severe Accidents</b>	Accident Conditions more severe than a DBA and involving significant core degradation.

**Structures, Systems and Components (SSCs)** A general term encompassing all the elements of a Facility or Activity, which contributes to protection and Safety, except human factors. Structures are the passive elements such as building vessels and shielding. A System comprises several components assembled in such a way as to perform a specific active function and a Component is a discrete element of a system.

### **Scope**

#### **Article (2)**

The objective of this regulation is to establish the requirements for an application to the Authority for a Licence for the Operation of a Nuclear Facility including the nuclear Commissioning tests.

### **Application for an Operating Licence General Requirements**

#### **Article (3)**

1. The Licence applicant shall provide information in the application for a Licence for the Operation of a Nuclear Facility, which demonstrates that the proposed Nuclear Facility has been designed, manufactured, constructed, commissioned (for non-nuclear tests) and will be commissioned (for nuclear tests) and operated safely and securely in compliance with the applicable laws of the State and the regulations of the Authority.
2. The Licence applicant shall provide:
  - a. the name of the Facility, its identification and its location;
  - b. its name and business address and the names of its directors and principal officers who are empowered to act on its behalf;
  - c. the Licence applied for, a description of the purpose for which the Licence applicant desires to engage in Operation of the Nuclear Facility, the requested term of the Licence for the Operation of a Nuclear Facility and a list of related Licences issued or applied for in connection with the proposed Nuclear Facility supplemented by details on the status of existing Licences and authorisations;
  - d. information establishing that it is a juridical entity approved by a competent authority of the State;
  - e. information describing its overall ownership and management structure including its projected financial and human resources requirements for the proposed Nuclear Facility;

- f. details regarding its financial and technical qualifications to complete the proposed activities in accordance with applicable laws and regulations including a Decommissioning Trust Fund as required by Article (42) of the Law and liability insurance required by Federal Law by Decree No 4 of 2012;
- g. information describing its relationship to major contractors and the structure of responsibilities between the Licence applicant and any contractors responsible for the Commissioning, testing, Operation, Maintenance, modification and surveillance of the Nuclear Facility; and
- h. the anticipated Operation start and completion dates and a schedule outlining the nuclear Commissioning tests and Operation phases and milestones.

### **Final Safety Analysis Report (FSAR)**

#### **Article (4)**

In accordance with Articles (28) and (32) of the Law, detailed evidence of Safety shall be submitted to the Authority for review to show how the proposed Facility or Activity complies with the relevant Safety objectives, principles and criteria issued by the Authority.

In the FSAR, the Licence applicant shall revise, update information that was included in the preliminary safety analysis report (PSAR) and shall expand, complete or provide additional or new information describing the final Design and Operation of the Nuclear Facility not already detailed in the PSAR or not submitted to the Authority. Justification for changes to the information originally provided by the PSAR shall be provided.

### **Requirements for the FSAR**

#### **Article (5)**

The Licence applicant shall include the following (without limitation) in the FSAR (disclosure of information shall be handled in accordance with Article (6) of this regulation):

1. An introduction containing information on the preparation and structure of the FSAR, the objective and scope of each section and a list of material incorporated by reference as part of the FSAR.
2. A general description of the Nuclear Facility that shall include the technical characteristics of the Nuclear Facility, information on the layout and related aspects, description of the operating modes of the Nuclear Facility and a comparison with other similar Facilities currently operating in the State or elsewhere;
3. Identification of any reference Nuclear Facility, evidence of approval of the reference Nuclear Facility by the authorised regulatory authority in the country of origin, a list of proposed departures or changes to the submitted reference Design, an Independent

Safety Verification report describing all proposed departures from or changes to the reference Design, and a list of all country of origin Safety information incorporated by reference in the FSAR;

4. A description of the arrangements that the Licence applicant has implemented to manage Safety and security including its management structure, the Management System implemented to ensure that all requirements for Safety, security and safeguards are satisfied during the proposed Activity and its strategy for the development, Maintenance and enhancement of a strong Safety culture;
5. A description of the site evaluation including site reference data, evaluation of site specific hazards and information on the proximity of industrial, transport and military facilities and other activities at or near the site that may influence the Safety of the Nuclear Facility. Information on the hydrological, meteorological and seismological conditions of the Nuclear Facility and the surrounding site shall also be included. Further, it shall describe the radiological conditions due to external sources, site-related issues in Emergency planning and Accident management, the radiological and non-radiological impact of the Nuclear Facility during Operation and Accident conditions, and monitoring of site-related parameters and an Emergency Plan during Operation including consideration of fire, flooding, sand storms and Hostile Events;
6. A description of the Design of the Nuclear Facility including Safety objectives and criteria, design principles, applicable codes and standards, the classification of SSCs, descriptions of the civil engineering works, structures and equipment qualification, and environmental factors relating to Nuclear Safety. Design information shall also be provided on human factors, engineering and proposed Nuclear Facility protection against internal and external hazards;
7. A description of the SSCs of the Nuclear Facility in line with their importance to Nuclear Safety including a discussion of their Safety objectives, design bases, Safety classification, Design and Construction codes and the Inspection, tests and analysis that provide reasonable assurance that the system will meet its design objectives;
8. A description of the lessons learned from the Construction and of how recent lessons learned and experience from the Commissioning, initial testing, Operation, Maintenance and surveillance of the reference Facility and other similar Facilities as well as scientific and technical developments and the results of any relevant research on protection and Safety have been applied to resolve potential Safety issues;
9. A summary of the results of the Safety analyses performed to assess the Safety of the Nuclear Facility on the basis of Safety criteria and authorised limit on radioactive releases including Safety objectives and acceptance criteria, identification and classification of Postulated Initiating Events, deterministic Safety analysis in support of normal Operation, analysis of anticipated operational occurrences, Design Basis Accident, beyond Design Basis Accidents, selected Severe Accidents and level 1 and level 2 PRAs;



10. Information on the Commissioning programme that will be used to provide assurance that the as-built Nuclear Facility satisfies the Authority's requirements and can be operated safely, including:
  - (a) a summary of the results of the non-nuclear Commissioning tests carried out; and
  - (b) a commitment to a nuclear Commissioning test programme to be conducted
11. Information on operational aspects relevant to Safety including a description of the processes and procedures to be implemented to ensure safe Operation of the Facility;
12. Information on operational limits and conditions to ensure the safe Operation of the Facility;
13. Information on the Radiation Protection programme including a description of all onsite Radiation Sources, the application of the 'as low as reasonably achievable' principle (known as the ALARA principle) for the optimisation of protection and Design features for Radiation Protection of personnel and the Nuclear Facility;
14. Information on the programme for pre-Disposal management of Radioactive Waste including arrangements for identification and control of Radioactive Waste streams, proposals for authorised Discharges of Radioactive Waste, and arrangements for pre-treatment, treatment, conditioning and Storage of residual Radioactive Waste pending Disposal;
15. Information on the capability for performing actions necessary to protect the public, workers and the environment in the event of any unplanned releases during normal Operation or a nuclear or radiological Emergency;
16. A summary of the Physical Protection Plan describing how the Licence applicant will protect Nuclear Material and the Nuclear Facility against the unauthorised removal of Nuclear Material and radiological sabotage up to and including the Design Basis Threat;
17. An overview of the Facility Safeguards Plan (FSP). The overview must cover all non-proliferation tasks (safeguards and import/export related tasks) that are outstanding at the point in time the Licence application for the Operation of a Nuclear Facility is submitted to the Authority;
18. Information on Decommissioning and end-of-life aspects including how the Design, Operation and Maintenance support safe Decommissioning.

## **Disclosure of Information**

### **Article (6)**

This Article is not applicable to sensitive nuclear information or classified information.

1. A Licence applicant seeking to have information in a Licence application for the Operation of a Nuclear Facility withheld from public disclosure in accordance with Article 9(B) of the Law must prominently mark the information the Licence applicant seeks to protect and provide a statement that:
  - a. identifies the parts of the application sought to be withheld and indicates the location(s) in the application of all information sought to be withheld; and
  - b. declares the basis for proposing the information to be withheld in accordance with the provisions of Article 9(B) of the Law and a specific statement of the harm that would result if the information sought to be withheld is disclosed to the public.
2. The Authority may grant or deny the Licence applicant's request to withhold certain information. In either case, the Authority will notify the Licence applicant, and if denied, the Authority will also provide a statement of the reasons for that determination and allow a thirty (30) day period in which the Licence applicant may through a written request to the Authority withdraw the information. During this period, the Authority will not use the information and after the expiry of the period, the information will be returned.
3. During the thirty (30) day period the Authority may elect to release the information to the public if it has been released by the owner to the public or if the basis for seeking to restrict public disclosure of the information is no longer valid.
4. If the Authority decides to release the information to the public for any reason, it will notify the Licence applicant thirty (30) days prior to releasing the information. Unless the Authority has released the information to the public for the reasons described in the previous paragraph, the Licence applicant may request to withdraw the information, and the information will be returned unless the information is required for reasonable use by the Authority.