

## **Regulation**

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# **Regulation for the Certification of Operating Personnel at Nuclear Facilities (FANR-REG-17)**

## **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 capitalized 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):

<b>Equipment Operator (EO)</b>	An Operator who works in a Nuclear Facility, normally outside the control room, under the direction of Reactor Operators and Senior Reactor Operators.
<b>FSAR</b>	Final Safety Analysis Report
<b>Items Important to Safety</b>	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: <ul style="list-style-type: none"><li>• Those SSCs whose malfunction or failure could lead to undue radiation exposure of site personnel or members of the public</li><li>• Those SSCs that prevent anticipated operational occurrences from leading to Accident conditions</li><li>• Those features that are provided to mitigate the consequences of malfunction or failure of SSCs</li></ul>
<b>Operating Personnel</b>	The Senior Reactor Operators, the Reactor Operators, or the Equipment Operators at a Nuclear Facility.
<b>Reactor Operator (RO)</b>	A control room Operator who normally manipulates the Nuclear Facility controls, particularly the controls affecting reactor reactivity.
<b>Senior Reactor Operator (SRO)</b>	A senior control room Operator who oversees and directs the activities of Reactor Operators and Equipment Operators.

## Scope

### Article (2)

This regulation establishes the training, qualifications, and certification requirements for Operating Personnel. The requirements of this regulation shall apply to Nuclear Facilities that have Nuclear Fuel on site, have loaded, or are in the process of loading, Nuclear Fuel into the reactor vessel, spent fuel pool, or dry storage Facility, or otherwise handling Nuclear Materials, or as specified by the Authority.

## **General Requirements**

### **Article (3)**

1. The Licensee shall establish and maintain a suitable programme for the training and qualification of Operating Personnel and describe such programme in a comprehensive plan for Operating Personnel which shall be submitted to the Authority for approval.
2. The plan shall:
  - a. Define the qualifications and experience necessary for Operating Personnel;
  - b. describe a formal qualification process for RO's, SRO's and EO's.
  - c. emphasise the paramount importance of Safety in all aspects of operating the Nuclear Facility;
  - d. describe provisions for periodic confirmation of competence and refresher training on a regular basis; and
  - e. provide the basis, including the identification of any industry standard used, for ensuring that a high degree of fidelity exists between the Nuclear Facility control room and the simulator used to train and qualify Operating Personnel.
3. Only personnel certified by the Authority shall perform the duties of a RO or SRO. Only personnel qualified by the Licensee shall perform the duties of an EO.
4. The Licensee may only make changes to the plan approved by the Authority if these changes do not reduce the programme's effectiveness or safety standard.

## **Training and Qualification Programme Structure**

### **Article (4)**

1. The Licensee shall develop performance-based programmes for initial and continuing training and qualification of Operating Personnel. The content of each programme shall be based on a systematic approach to training. The training programmes shall promote attitudes which help to ensure that safety issues receive the attention that they warrant.
2. Qualification shall be complete before Operating Personnel are assigned duties related to or involving Items Important to Safety.
3. The training programme shall ensure that the following minimum requirements are met:
  - a. The programme shall provide the necessary training and instruction to enable Operating Personnel to perform their duties correctly for the different operational states of the Nuclear Facility and in the event of an Accident, in accordance with the appropriate operating or emergency procedures.
  - b. Operating Personnel shall have a sufficient understanding of the Nuclear Facility, its safety features and technical specifications.
  - c. Operating Personnel shall have sufficient relevant competences, such as managerial and supervisory skills, communications, and language skills to perform their duties properly and with due attention to Safety.

- d. ROs and SROs shall be familiar with the symptoms of Accidents beyond the Design basis and with the procedures for Accident management.
  - e. Operating experience from events at the Nuclear Facility where the Operating Personnel expect to work as well as relevant events at other Nuclear Facilities shall be appropriately factored into the training programme. The programme shall ensure that training is conducted on the root cause(s) of the events and on the implementation of corrective actions to prevent their recurrence.
  - f. Training shall be on-going after the initial certification of Operating Personnel.
4. A system shall be implemented to assess and improve the training programme. In addition, a system shall be in place for timely modification and updating of the training facilities and materials to ensure that they accurately reflect the conditions of the Nuclear Facility.
  5. All Operating Personnel shall be medically examined on certification and at subsequent intervals to ensure their fitness for the duties and responsibilities assigned to them.
  6. The Licensee shall ensure that the highest standards of examination security and integrity are maintained throughout the training programme.

## **Training Programme Resources**

### **Article (5)**

1. Adequate facilities shall be provided for classroom training and for individual study. Appropriate educational training material shall be provided to assist trainees in understanding the Nuclear Facility and its systems and procedures.
2. Representative simulator facilities shall be used for the training of Operating Personnel certified to operate the reactor. Simulator training shall incorporate training for all operational states and for the most risk significant accident sequences.
3. Training instructors shall be technically competent in their assigned areas of responsibility and have the necessary instructional skills.

## **Reactor Operator and Senior Reactor Operator Certification**

### **Article (6)**

1. The Licensee shall conduct a comprehensive selection, training and qualification programme for ROs and SROs involving written examinations and performance based operating tests.
2. Certification of ROs and SROs may only be granted by the Authority.
3. An authorised representative of the Licensee may request that the Authority certify a person to perform the duties of a RO or SRO by providing the Authority with an application stating that the Licensee has high confidence in the person's trustworthiness, reliability, and competence, that the Licensee has a need for the person to perform the duties of a RO or SRO and that the person has successfully passed the Licensee's RO

or SRO training and qualification programme. Details of the person(s) education, training and qualifications along with a statement of medical fitness, to perform the duties of an RO or SRO, shall also be included in the application. If the person has completed a qualification and training programme different from the one approved by the Authority described in Articles (3) and(4) of this regulation, then the application shall also include:

- a. A description of the nature and date of the different training received;
  - b. the details of the RO's or SRO's qualifications;
  - c. a description of the course of instruction administered by the Licensee, to account for any differences needed for qualification; and
  - d. a description of the start-up and shutdown and Incident/Accident experience received both in the Nuclear Facility and in the Nuclear Facility reference simulator.
4. An authorised representative of the Licensee may request that the Authority renew the certification of a person to perform the duties of a RO or SRO by providing the Authority with an application showing that such person has completed the provisions for periodic confirmation of competence and refresher training and that their medical condition and fitness for duty remain satisfactory to perform their duties safely.
  5. The written examinations and performance based operating tests will contain a representative selection of questions and actions pertaining to the knowledge, skills, and abilities needed to perform RO and SRO duties. The knowledge, skills, and abilities will be identified, in part, from learning objectives derived from a systematic analysis of Operating Personnel duties and from information in the FSAR, system description manuals, and operating procedures, and the Licence.
  6. The performance based operating tests shall comprise scenarios conducted in a Nuclear Facility reference simulator and job performance measures conducted in the Nuclear Facility and in the simulator. The scenario portion of such tests will test candidates on communication skills and teamwork, the ability to use and implement normal and Emergency procedures, and knowledge of immediate action required for certain Nuclear Facility Emergencies.
  7. The Licensee shall notify the Authority at least 60 days in advance of the conduct of the certification examinations for RO's and SRO's. The Authority may request to review the written examinations and operating tests prior to their administration. The Authority may also request to be present during the operating tests.
  8. The Licensee shall prepare, proctor, and grade the written examinations and shall prepare and evaluate the performance based operating tests.
  9. The Licensee shall ensure qualification tests are substantially different from the last qualification test given to each candidate.
  10. The Licensee shall ensure that the RO, SRO and all nuclear personnel are medically examined every 6 months including all occupational tests required by the competent health authority and all the results are satisfactory and within the approved limits.

## **Refusal to Certify**

### **Article (7)**

1. The Authority may refuse to issue an initial certification or a renewal of a certification after reviewing the application for certification if it is not satisfied with the submitted evidence of the competence and qualifications of the candidate.
2. The Authority shall notify a Licensee who has applied for such certification of a proposed decision not to certify the person, as well as the basis for the proposed decision.

## **Decertification**

### **Article (8)**

1. The Authority may decertify any person who does not comply with the conditions of his or her certificate.
2. The Authority shall notify the Licensee and any person for whom a certificate has been issued of a proposed decision to decertify the person, as well as the basis for the proposed decision, at least 30 days before decertifying the person.
3. If a person has been decertified, the licensee may apply for reinstatement under Article (6), by providing additional evidence showing that the reason for decertification has been corrected.

## **Conditions of Validity of Certificates**

### **Article (9)**

1. Certificate holders must be medically fit for this occupation as per the competent health authority requirements.
2. The certificate holder shall participate in the fitness for duty programme of the Licensee.
3. A certificate expires five years after the date of issuance or renewal
4. The certificate is limited to the Nuclear Facility for which it is issued.
5. The certificate is limited to those controls of the Nuclear Facility specified in the certificate.
6. The certificate is subject to, and the certificate holder shall observe, all applicable rules, regulations, and orders of the Authority.
7. The certificate holder shall actively perform the functions of a RO or SRO on a minimum of seven 8-hour or five 12-hour shifts per calendar quarter in order to maintain validity and proficiency.
8. The certificate holder shall complete an approved continuing training and qualification programme.

## **Equipment Operator Qualification**

### **Article (10)**

The Licensee shall conduct a qualification programme for EO's involving written examinations and performance based operating tests. The performance based operating tests shall comprise job performance measures conducted in the Nuclear Facility.

### **Records**

#### **Article (11)**

1. The Licensee shall prepare and maintain records necessary to show that Operating Personnel were trained and qualified in a manner consistent with this regulation.
2. The Licensee shall maintain up to date records for each certified RO and SRO showing the date of original certification; status of periodic confirmation of competence and refresher training; and date of verification of an acceptable medical condition.
3. Records that must be maintained under this Article, and as described in the Licensee's Management System (as required under FANR-REG-01, Regulation for Management Systems for Nuclear Facilities), may be the original, a hard copy, or electronic form with reliable backup storage. Records such as letters, drawings, and specifications, must include all pertinent information such as dates, stamps, initials, and signatures. The Licensee shall maintain adequate security of the records against tampering or loss of such records.