NRRC Technical Regulations

Licensing and Regulatory Oversight of Nuclear Facilities

NRRC-R-03

2022

هيئة الرقابة النووية والإشعاعية
Nuclear and Radiological Regulatory Commission

Regulation

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Preamble

In accordance with the provisions of the Law of Nuclear and Radiological Control issued by Royal Decree No. (M/82) dated 25/7/1439 AH, and NRRC's Statue issued by the Minsters' Cabinet Resolution No. (334) dated 25 /6/1439 AH, the NRRC prepared regulations that ensure control over radiological activities and practices as well as nuclear and radiological facilities.

This regulation has been prepared on the basis of International Atomic Energy Agency (IAEA) standards, international best practices and the experiences of similar international regulatory bodies, and in accordance with the Kingdom's international commitments. This Regulation has been presented in "the Public Consultation Platform" for the public review, comments, feedback.

This regulation has been approved by the NRRC's Board of Directors in resolution No. (R/1/1/2022), dated 20/04/2022.

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Chapter 1: Objectives, Scope, and Definitions

Section 1: Objectives

1. To define the general requirements and process for any nuclear facility licensing, including the responsibilities of the licensee and the conditions for applying for, amending, suspending or revoking a license.

2. To list the required document submittals and authorizations during the lifetime of a facility.

3. To define the process and requirements for the main licensing steps which consist of site license, construction license, operating license, decommissioning license, closure license for disposal facility.

Section 2: Scope

4. This regulation applies to the licensing and regulatory authorization of all nuclear facilities during their entire lifetimes.

5. The transportation of radioactive and nuclear material is provided in the Regulation on Safe Transport of Radioactive Materials (NRRC-R-15).

6. The import and export of nuclear material is provided in the Regulation on Notification on and Authorization of Facilities and Activities with Radiation Sources (NRRC-R-02)

Section 3: Definitions

Approval

The granting of consent by the NRRC. Typically used to represent any form of consent that does not meet the definition of authorization.

Authorization

A written permission granted by the NRRC for a person to conduct specified activities.

Closure

Administrative and technical actions directed at a disposal facility at the end of its operat-ing lifetime—e.g., covering of the disposed waste (for a near-surface disposal facility) or backfilling and/or sealing (for a geological disposal facility and the passages leading to it)—and the termination and completion of activities in any associated structures.

Commencement of construction

Construction of a nuclear facility is considered to begin with the concrete casting of structures affecting the safety demonstration or with the construction of underground facilities affecting the long-term safety of final disposal.

Commencement of operation

Operation of a nuclear power plant or research reactor is considered to begin with the first loading of nuclear fuel into the reactor. For other nuclear facilities, operation is considered to begin when nuclear material or certain types of radioactive material are introduced into the nuclear facility.

License applicant

Person or organization who is planning to submit a license application or who has submitted a license application but has not yet been granted a license.

Licensing

Process to obtain a license, including applying for a license, the related assessment by the (NRRC) and the granting of the license.

Chapter 2: General Principles

Section 4: Principles and obligations of the applicant or licensee

7. The safety of nuclear facilities shall be maintained at as high a level as reasonably achievable following the principle of Safety as High as Reasonably Achievable (SAHARA). For the further development of safety during the life cycle of the facility, measures shall be implemented that can be considered technically and economically feasible, taking into account operating experience, as well as safety research and related advances in science and technology.

8. The safety requirements and the measures to ensure safety shall be scaled and allocated according to the risks related to the use of nuclear energy.

9. The licensee retains the prime responsibility for safety throughout the lifetime of facilities and activities, and this responsibility cannot be delegated.

10. The licensee shall actively evaluate progress in science and technology, as well as relevant experiential feedback, in order to identify and make those safety improvements that are considered practicable.

11. The license applicant shall inform the NRRC about its intention to establish a nuclear facility as early as possible, at the latest when an investment decision is made.

12. The licensee or license applicant shall submit an adequate demonstration of safety in support of an application for the authorization of a facility or an activity.

Chapter 3: Licensing

Section 5: Licenses

13. The following licenses are required:

    a. Site license before commencing excavation or earthmoving works on the site, excluding works necessary to carry out investigations related to the site evaluation.

    b. Construction license before commencing nuclear-safety-related construction work.

    c. Operating license before commencing the operation of the facility.

    d. Decommissioning license before commencing decommissioning activities, except for disposal facilities.

    e. Closure license for disposal facilities before closure of the facility.

Section 6: Amending, renewing, suspending or revoking licenses

14. The license may be amended if there is a need to change the content of the license to ensure safe use of nuclear energy, to secure nuclear waste and spent-fuel management, to implement security measures or emergency planning, to meet international contractual obligations in the nuclear energy sector or to prevent proliferation of nuclear weapons. Such a need may arise if there is new information gleaned from research or operating experience, if there are changes in the regulatory framework or if the way the facility is operated or the site conditions will be changed.

15. NRRC may suspend or revoke a license wholly or partly, if

    a. The licensee violates the Nuclear and Radiological Laws, regulations issued by the NRRC or license conditions.

    b. The licensee loses legal capacity or the corporation or foundation holding the license is dissolved, otherwise discontinues operations or goes into bankruptcy.

    c. The facility's structure or ownership changes in a way that affects the licensee's capability to fulfil their obligations.

16. Revoking or suspending a license requires that a reasonable period of time has been allowed for the licensee to correct the deficiency, when possible by means of the licensee's actions.

17. Suspending or revoking a license or the expiration of its validity shall not exempt the licensee from compliance with the provisions outlined by the license.

18. The licensee's obligations under the license are terminated only by a decision by the NRRC or if another party is granted a license to take over the licensee's activities.

19. A license can be transferred to another organization only with approval from the NRRC. A similar safety assessment can be made for granting a new license. However, a graded approach shall be applied, and the safety assessment shall be focused on matters that will change in the process.

20. An operating license is issued for a fixed term and shall be renewed before the end of the term. The renewal application shall be submitted well in advance of the end of the validity period of the previous license. The procedure to be followed is the same as that for applying for an operating license for a new nuclear facility, described in Chapter 6.

Chapter 4: Site License

Section 7: Applying for a site license

21. A site license shall be applied for via application. It shall include at least the following information:

    a. Applicant's name used in business operations, and the corresponding legal address.

    b. Type of license being applied for.

    c. Location, size and borders of the site.

    d. Description of the ownership of the site.

e. Nature of the planned activities; type and number of the nuclear facilities to be constructed on the site.

f. Description of the competence and expertise of the organizations involved in the siting process.

g. Description of the organizational structure of the license applicant, and, if applicable, the ownership structures of the license applicant with regard to parent bodies.

h. Other specific requirement made by the NRRC for the purpose of this Regulation.

22. When applying for a site license, the applicant shall submit the documents listed in Appendix 1 and shall ensure that the documents are accepted by NRRC.

Section 8: Prerequisites for granting a site license

23. The applicant shall ensure the satisfactory submission of the following information for the site license application:

a. The NRRC has approved the Radiological Environmental Impact Assessment;

b. The natural hazards and human-induced hazards are characterized, and the resulting design bases for the nuclear facility are clearly defined and can be used in the design, taking into account the uncertainties;

c. The required security, safeguards and emergency arrangements can be implemented;

d. The potential radiological impacts on people and environment, with due consideration to population distribution, have been evaluated and the results are acceptable;

e. The site is otherwise deemed suitable for a nuclear facility;

f. The requirements established in the siting regulation are achieved;

g. The person responsible for safeguards and his/her deputy have been approved by the NRRC and they have been appointed by the licensee, as prescribed by Regulation on Nuclear Material Accountancy and Control (NRRC-R-12);

h. The person responsible for nuclear security and his/her deputy have been approved by the NRRC, as prescribed by Regulation on Nuclear security (NRRC-R-11);

i. The NRRC has approved the Preliminary Site Evaluation Report described in Appendix 1.

j. All NRRC's requirements for the purpose of this regulation are achieved.

Chapter 5: Construction License

Section 9: Applying for a construction license

24. A license to construct a nuclear facility shall be applied for via application. It shall include at least the following information:

    a. Applicant's name used in business operations, and the corresponding legal address.

    b. Type of license being applied for.

    c. Location site of the nuclear facility and reference to the site license.

    d. Intended use and type of nuclear facility.

    e. Quality and extent of the operations carried out at the nuclear facility or, if the nuclear facility is intended for the generation of nuclear energy, its power range and the planned service life.

    f. The timetable of construction, especially the planned start time for construction.

    g. Description of the quality and maximum amounts of the nuclear materials or nuclear waste that will be fabricated, produced, handled, used or stored at the nuclear facility.

    h. Description of the expertise and resources available to the applicant and the organization implementing the construction project, as well as an outline of the operating organization planned for the nuclear facility.

i. Cost estimate and financing plan of the nuclear facility project.

j. Applicant's financial statements from the preceding five years or as specified by the NRRC.

k. Financial guarantees for decommissioning, waste management and spent-fuel management.

l. Other specific requirement made by the NRRC for the purpose of this regulation.

25. When applying for a construction license, the applicant shall submit the documents listed in Appendix 2 and shall ensure that the documents are accepted by NRRC.

Section 10: Prerequisites for granting a construction license

26. The applicant shall ensure the satisfactory submission of the following information for the construction license application:

a. The design of the nuclear facility meets the radiation and nuclear safety requirements prescribed by the NRRC;

b. The applicant's plans and arrangements for security, safeguards, waste management, spent-fuel management, decommissioning and emergency preparedness meet the requirements prescribed by the NRRC as appropriate at the construction license phase;

c. The applicant's plans and arrangements for other items mentioned in Appendix 2 meet the requirements prescribed by the NRRC;

d. The site license has been granted for the facility and the site-related design parameters have been taken into account in the design;

e. The applicant has the necessary expertise and human resources available and has sufficient financial prerequisites to implement the project;

f. The Responsible Manager and his/her deputy have been appointed by the licensee and have been approved NRRC, as requested by the Regulation on Leadership and Management for Safety (NRRC-R-04);

g. The person responsible for emergency arrangements and his/her deputy have been approved by the NRRC, as requested by Regulation on Nuclear Facilities Emergency Preparedness and Response (NRRC-R-14);

h. The applicant's arrangements for enabling the oversight and control by the NRRC are sufficient.

i. All NRRC's requirements for the purpose of this regulation are achieved.

Chapter 6: Operating License

Section 11: Applying for an operating license

27. A license to operate a nuclear facility shall be applied for via application. It shall include at least the following information:

    a. Applicant's name used in business operations, and the corresponding legal address.

    b. Type of license being applied for.

    c. Location site of the nuclear facility.

    d. Intended use of the nuclear facility.

    e. Quality and extent of the operations carried out at the nuclear facility or, if the nuclear facility is intended for the generation of nuclear energy, its power range and the planned service life.

    f. Reference to the construction license or previous operating license of the nuclear facility.

    g. Proposed length of the term of the operating license.

    h. Description of the quality and maximum amounts of the nuclear materials, nuclear waste and spent fuel that will be fabricated, produced, handled, used or stored at the nuclear facility.

    i. Description of the operating organization, expertise and resources available for operation of the facility.

j. Description of how the provisions in the site license and construction license have been complied with or, if the nuclear facility has previously been granted an operating license, how the provisions in the previous operating license have been complied with.

k. Description of the applicant's financial status, the plan for the administration of the finances of the nuclear facility and the production plan for the nuclear facility.

l. Proof of liability insurance.

m. Financial guarantees for decommissioning, waste management and spent-fuel management.

n. Applicant's financial statements for the year when the construction license was applied for and any subsequent years; or, if the nuclear facility has previously been granted an operating license, the financial statements for the year when the previous operating license was applied for and any subsequent years.

o. Other specific requirement made by the NRRC for the purpose of this regulation.

p. Any other information prescribed by the NRRC.

28. When applying for an operating license, the applicant shall submit the documents listed in Appendix 3 and shall ensure that the documents are accepted by NRRC.

29. When an application for an operating license is made for a nuclear facility that has already been in operation, the documents mentioned need be submitted to the NRRC only to the extent that they have been modified or have not previously been submitted.

Section 12: Prerequisites for granting an operating license

30. The applicant shall ensure the satisfactory submission of the following information for application of the operating license:

    a. The as-built nuclear facility meets the radiation and nuclear safety requirements as prescribed by NRRC;

    b. The as-built nuclear facility meets the conditions given in the construction license and in the final site evaluation report;

    c. The applicant's plans and arrangements for security, safeguards, waste management, spent-fuel management, decommissioning and emergency preparedness shall meet the requirements as prescribed by NRRC;

    d. The applicant's plans and arrangements for other items mentioned in Appendix 3 meet the requirements as prescribed by NRRC;

    e. The applicant has the necessary expertise and human resources available and has sufficient financial prerequisites to operate the facility safely.

    f. All NRRC's requirements for the purpose of this regulation are achieved.

Chapter 7: Decommissioning License

Section 13: Applying for a decommissioning license

31. A license for the decommissioning of a nuclear facility shall be applied for via application. It shall include at least the following information:

    a. Applicant's name used in business operations, as well as the corresponding legal address.

    b. Type of license being applied for.

    c. Reference to the operating license of the nuclear facility.

    d. Summary description of the decommissioning, including the timetable of decommissioning and summary of spent-fuel and waste-management plans.

    e. Description of the expertise and human resources available to the applicant upon decommissioning a nuclear facility.

    f. Cost estimate and financing plan for the decommissioning.

    g. Description of the applicant's financial status and the applicant's financial statements for the preceding five years or as specified by the NRRC.

    h. Other specific requirement made by the NRRC for the purpose of this regulation.

32. When applying for a decommissioning license, the applicant shall submit the documents listed in Appendix 4 and shall ensure that the documents are accepted by NRRC.

Section 14: Prerequisites for granting a decommissioning license

33. The applicant shall ensure the satisfactory submission of the following information for the decommissioning license:

    a. The planned decommissioning operations meet safety requirements;

    b. The applicant's plans for security, safeguards, waste management and spent-fuel management shall meet the requirements prescribed by the NRRC as appropriate for a decommissioning phase;

    c. Waste-management plans regarding interim storage, disposal of waste and spent-fuel management are appropriate and in accordance with NRRC regulations;

    d. The applicant has sufficient expertise and resources available and, in particular, employs competent decommissioning staff and the appropriate decommissioning organization of the nuclear facility;

    e. The applicant is considered to have the financial prerequisites to safely engage in decommissioning operations;

    f. All NRRC's requirements for the purpose of this regulation are achieved.

Chapter 8: Closure License

Section 15: Applying for a closure license

34. A license for the closure of a disposal facility shall be applied for via application. It shall include at least the following information:

    a. Applicant's name used in business operations, as well as the corresponding legal address.

    b. Type of license being applied for.

    c. Reference to the operating license of the disposal facility.

    d. Summary description of the closure, including the timetable of closure and summary of post-closure activities.

    e. Description of the expertise and human resources available to the applicant upon closure of a disposal facility.

    f. Cost estimate and financing plan for the closure.

    g. Description of the applicant's financial status and the applicant's financial statements for the preceding five years or as specified by the NRRC.

    h. Other specific requirement made by the NRRC for the purpose of this regulation.

35. When applying for a closure license, the applicant shall submit the documents listed in Appendix 5 and shall ensure that the documents are accepted by NRRC.

Section 16: Preconditions for granting closure license

36. The applicant shall ensure the satisfactory submission of the following information for the closure license application:

    a. The planned closure operations meet safety requirements;

    b. The applicant has sufficient expertise and resources available and, in particular, employs competent closure staff and the appropriate closure organization of the disposal facility;

    c. The applicant is considered to have the financial prerequisites to safely engage in closure operations;

    d. All NRRC's requirements for the purpose of this regulation are achieved.

Chapter 9: Modifications

Section 17: Modifications and changes to a nuclear facility, organization and documents

37. The licensee shall categorize modifications according to their safety significance.

38. If the licensee intends to carry out safety significant modifications to its organization, to the nuclear facility, its systems, structures, components, nuclear fuel or the way the facility is operated that influence safety, security or safeguards and involve changes in the plans or documents approved by the NRRC the licensee shall obtain approval from the NRRC for such modifications before their implementation.

39. The cumulative effects of minor changes shall be appropriately analyzed.

40. The licensee shall ensure that the documents mentioned in the appendices are revised accordingly.

Chapter 10: Other Regulatory Authorizations and Approvals

Section 18: Approval of persons

41. The licensee shall apply for the approval of persons to be appointed to the positions of Responsible Manager as prescribed by Regulation on Leadership and Management for Safety (NRRC-R-04), person responsible for safeguards as prescribed by Regulation on Nuclear Material Accountancy and Control (NRRC-R-12), person responsible for emergency preparedness and response as prescribed by Regulation on Nuclear Facilities Emergency Preparedness and Response (NRRC-R-14) and person responsible for security as prescribed by Regulation on Nuclear Security (NRRC-R-11), as well as for their deputies.

    a. The persons responsible for safeguards and security and their deputies shall be appointed to the positions before the site license is granted.

    b. The Responsible Manager and the person responsible for emergency arrangements, as well as their deputies, shall be appointed to the positions before the construction license is granted.

42. The licensee shall apply for the approval of persons to be appointed as control room operators as prescribed by Regulation on Operations of Nuclear Facilities (NRRC-R-09). The control room operators shall be appointed before the commencement of the operation of the facility.

Section 19: Approval of organizations

43. The following organizations require approval from the NRRC:

    a. Inspection Organization regarding its duties pertaining to the control of pressure equipment, other mechanical components, as well as steel and concrete structures at nuclear facilities within the scope determined by the NRRC.

    b. Qualification Body regarding its duties pertaining to the qualifications of non-destructive inspection systems used for pressure equipment at nuclear facilities within the scope determined by the NRRC.

    c. Testing Organizations regarding their duties pertaining to non-destructive and destructive testing of structures and components at nuclear installations within the scope determined by the NRRC.

    d. Manufacturer of nuclear pressure equipment regarding its duties.

44. The Inspection Organization shall apply for approval from the NRRC.

45. The Licensee shall apply for approval by the Qualification Body, Testing Organization and Manufacturer of nuclear pressure equipment from the NRRC.

46. The Inspection Organization, Qualification Body and Testing Organization shall be operationally and economically independent from the Licensee and their cooperative organizations.

47. The Inspection Organization, Qualification Body, Testing Organization and Manufacturer shall have an advanced quality system, competent and experienced personnel and appropriately qualified methods, facilities and equipment for the carrying out of their duties.

48. The approved organizations shall observe other national legislative requirements obligated by the NRRC.

Section 20: Documents Submitted to the Nuclear and Radiological Regulatory Commission (NRRC)

49. In addition to the documents required in the main licensing steps, specified in the appendices of this regulation, the licensee shall submit other documents, as specified below, to the NRRC. The role and content of the documents are defined in the respective regulations.

50. Documents that are required to be established by the licensee under the various regulations but that are not required by the regulations to be submitted to NRRC shall be available to the NRRC upon request.

51. The documents listed in Appendices shall be kept up to date during the respective phases, and the updates shall be submitted to the NRRC.

52. Regarding site characterization

    a. A final site evaluation report shall be submitted to the NRRC

before applying for a construction license. The final site evaluation report shall include site-related design parameters and must be approved by the NRRC before a construction license application can be submitted.

53. Documents related to construction and commissioning, Regulation on Construction and Commissioning of Nuclear Facilities (NRRC-R-08):

    a. The scope of the design reviews by an approved inspection organization or the licensee and procedures to carry out the reviews shall be approved by NRRC.

    b. The licensee shall report significant non-conformances during construction and commissioning to the NRRC.

    c. The investigation reports of significant events shall be submitted to the NRRC for approval.

    d. The commissioning program shall be submitted to the NRRC for approval.

    e. Safety-related commissioning test procedures shall be submitted to NRRC for review before performing the tests.

    f. Safety-related commissioning test reports and summary test reports for each stage shall be submitted to the NRRC for approval.

    g. For construction and commissioning, other documents submitted to the NRRC or available during inspections shall be defined in the context of reviewing the licensing plan.

54. Documents related to operation:

    a. An annual report of operation shall be submitted to the NRRC (Regulation on Operations of Nuclear Facilities (NRRC-R-09)).

    b. The periodic safety review shall be submitted to the NRRC for approval.

    c. Any modifications to or departures from the Operational Limits and Conditions shall be submitted to the NRRC for approval prior to their implementation (Regulation on Operations of Nuclear Facilities (NRRC-R-09)).

    d. Event reports of events significant to safety shall be submitted to NRRC for approval (Regulation on Operations of Nuclear Facilities (NRRC-R-09)).

55. Documents related to waste management and decommissioning:

    a. A plan for the general clearance of nuclear waste shall be submitted to the NRRC for approval (Regulation on Management of Radioactive Waste (NRRC-R-16)).

    b. A description of the methods for determining the activity content and other safety-related parameters of the nuclear waste shall be submitted to the NRRC for approval (Regulation on Management of Radioactive Waste (NRRC-R-16)).

    c. After the operating license has been granted, the decommissioning plan shall be updated every five years or as specified

by the NRRC, and sent to NRRC for approval (Regulation on Decommissioning of Nuclear Facilities (NRRC-R-10), Regulation on Management of Radioactive Waste (NRRC-R-16)).

d. The periodic safety review shall be submitted to the NRRC for approval.

56. Documents related to safeguards:

a. For activities taking place before submittal of a construction license application, the Nuclear Material Accountancy and Control (NMAC) manual shall be submitted for approval to the NRRC prior to the activity as prescribed by the NRRC, and shall be kept up to date at all times (Regulation on Nuclear Material Accountancy and Control (NRRC-R-12)).

b. The following documents shall be submitted to NRRC (Regulation on Nuclear Material Accountancy and Control (NRRC-R-12)):

i. Design Information Questionnaire.
ii. Accounting And Operational Records.
iii. Activity Program.
iv. Notification Of Activities.
v. Inventory Change Report.
vi. Material Balance Report.
vii. Physical Inventory Listing.
viii. Annual Report.
ix. Special Reports.

57. Documents related to security (Regulation on Nuclear Security (NRRC-R-11)):

    a. A sustainability program shall be submitted to the NRRC.

    b. A quality assurance policy and program shall be submitted to the NRRC.

    c. Documentation of corrective actions shall be submitted to the NRRC for approval.

    d. An analysis of the inventory of all radioactive materials in the facility shall be submitted to the NRRC for approval.

Section 21: Authorizations and hold-points

58. If regulations or decisions by the NRRC require authorization by the NRRC for an activity, the activity shall not be performed until authorized by the NRRC.

59. Manufacturing of components or structures with a long lead time and site preparation activities may begin before the construction license is issued, if approved by the NRRC (Regulation on Construction and Commissioning of Nuclear Facilities (NRRC-R-08)).

60. During the entire lifetime of the facility, the licensee shall apply for approval from the NRRC for significant safety modifications.

61. The following hold-point and authorization concern the construction phase:

a. The construction of the nuclear facility shall not be commenced before the construction license has been issued.

62. The following hold-points and authorizations concern the commissioning phase:

a. Safety-related commissioning test procedures shall be submitted to NRRC for review before performing the tests (Regulation on Construction and Commissioning of Nuclear Facilities (NRRC-R-08)).

b. Safety-related commissioning test reports and summary test reports for each stage shall be approved by the NRRC before entering the next stage (Regulation on Construction and Commissioning of Nuclear Facilities (NRRC-R-08)).

c. The licensee shall apply for authorization to bring fresh fuel to the site for the first time (Regulation on Construction and Commissioning of Nuclear Facilities (NRRC-R-08)).

d. The licensee shall apply for authorization to start the initial fuel loading (Regulation on Construction and Commissioning of Nuclear Facilities (NRRC-R-08)).

e. After fuel loading, the licensee shall apply for authorization to transfer to the next stage of commissioning (Regulation on Construction and Commissioning of Nuclear Facilities (NRRC-R-08)).

63. The following hold-points and authorizations concern the operation phase:

a. The operation of the nuclear facility shall not be commenced before:

   i. The operation license has been issued;

   ii. The NRRC has authorized the initial fuel loading.

b. In the event that a license to operate a facility is granted for a term considerably longer than ten years the licensee shall carry out periodic safety reviews on the facility with a maximum interval of ten years or as specified by the NRRC.

c. Modifications to or departures from the Operational Limits and Conditions shall be approved by the NRRC before their implementation (Regulation on Operations of Nuclear Facilities (NRRC-R-09)).

64. The following hold-points and authorizations concern the decommissioning phase:

a. In the event that decommissioning takes considerably longer than ten years, the licensee shall carry out periodic safety reviews with a maximum interval of ten years or as specified by the NRRC. A graded approach shall be used in carrying out the review, taking into account the safety significance and status of the decommissioning.

b. The licensee shall apply to the NRRC for the release of the facility from regulatory control. A nuclear facility is considered decommissioned when the NRRC has confirmed that the quantity of radioactive materials remaining at the facil-

ity site complies with the state requirements (Regulation on Management of Radioactive Waste (NRRC-R-16)).

Section 22: Inspections

65. The licensee shall file an inspection request to the NRRC for the inspections related to the safety of classified components, systems and structures.

Appendix 1: Documents to be submitted when applying for a site license

The content of these documents may be divided or combined into different documents to the satisfaction of the NRRC.

The documents to be submitted are as follows:

1. Preliminary site evaluation report, including a site description, site-related design bases and the reasoning and justification for these bases. The requirements of the Regulation on Site Evaluation of Nuclear Facilities (NRRC-R-05); shall be taken into consideration in the report to the extent necessary for establishing the suitability of the site for the planned purpose. The site evaluation report should cover (at least) the following topics:

    a. General geography of the site and the surrounding region.

    b. Geological, geotechnical and seismic conditions and the related design bases.

    c. Meteorological and hydrological conditions (including sea water, precipitation, groundwater, etc.) and the related design bases.

    d. Vegetation and animal life in the area.

    e. Human activities in the vicinity of the site with potential to affect the facility (industry, storage, transport) or which could be affected by the plant.

    f. Radiological effects of the facility on the population and en-

vironment in the vicinity of the site during normal operation and accident conditions.

g. Description of the population (density, distribution, evolution) in the region.

h. Schools, hospitals and other installations that would be difficult to evacuate or protect in case of an accident.

i. Land-use plans in the region.

j. The potential for heat dissipation (including the ultimate heat sink).

k. Other site-related factors with the potential to affect the safety or design requirements of the facility and the related design bases where relevant.

l. Evaluation of the site from the point of view of security and emergency arrangements.

m. For the site of a disposal facility, consideration of effects of local conditions on post-closure safety.

2. Radiological Environmental Impact Assessment report.
3. Initial Emergency preparedness plan.
4. Initial Security plan.

Appendix 2: Documents to be submitted when applying for a construction license

The content of these documents may be divided or combined into different documents to the satisfaction of the NRRC.

The documents to be submitted are as follows:

a. Preliminary safety analysis report (PSAR).

b. Probabilistic risk assessment of the design stage.

c. Proposal for a classification document, which shows the classification of structures, systems and components important to the safety of the nuclear facility on the basis of their significance with respect to safety.

d. Management system manual describing the management of quality and safety during the construction phase.

e. Description of the license applicant's and main suppliers' organization, competence and resources for pursuing the construction project in compliance with requirements. The description shall include demonstration and justification of the adequacy of the organization structure, resources and competencies defined.

f. Preliminary plans for security arrangements, including security plans, cyber security plans and contingency plans.

g. Preliminary plan for emergency arrangements.

h. NMAC manual.

i. Preliminary waste-management plan.

j. Preliminary spent-fuel management plan (for facilities producing spent fuel).

k. Decommissioning plan, as appropriate for the construction license phase.

l. Program for determining the baseline environmental conditions of the nuclear facility.

m. Conceptual plan for in-service inspections.

n. Conceptual plan for aging management.

o. Strategic plan for fuel supply (for nuclear reactors).

p. Post-closure safety case (for disposal facilities).

q. Preliminary closure plan (for disposal facilities).

r. Licensing plan.

s. Verification of measures to enable regulatory oversight and control.

t. License applicant's evaluation of compliance with safety requirements.

u. Any other information considered necessary by the NRRC, including but not limited to:

    i. Design certification from the country of the origin of the reactor type. The certification should state that the reactor fulfills the requirements of the country of origin.

ii. Analyses of the differences between the nuclear safety requirements of the country of origin and in the Kingdom.

iii. Evaluation of whether the design basis resulting from the site characteristics used for the basic design is applicable also to the planned location in the Kingdom.

Appendix 3: Documents to be submitted when applying for an operating license

The content of these documents may be divided or combined into different documents, to the satisfaction of the NRRC.

The documents to be submitted are as follows:

a. Final safety analysis report (FSAR).

b. Probabilistic risk assessment.

c. Classification document, showing the classification of structures, systems and components important to the safety of the nuclear facility on the basis of their significance with respect to safety.

d. Management system manual describing the management of quality and safety during the operating phase.

e. Description of the licensee's organization and duties, resources, competencies, and the responsibilities of the personnel whose actions have the potential to impact safety. The description shall include the demonstration and justification of

the adequacy of the organizational structures, roles, resources, and competencies defined.

f. Operational Limits and Conditions, which shall at least define the limits for the process quantities that affect the safety of the facility in various operating states, provide regulations on operating restrictions that result from component failures and set forth requirements for the testing of components important to safety.

g. Results of non-nuclear testing.

h. Plans for security arrangements, including security plans, cyber security plans and contingency plans.

i. Plan for emergency arrangements.

j. NMAC manual.

k. Occupational radiation protection programme, including arrangements for designation of areas, local rules and procedures, monitoring of workers and the workplace, the health surveillance programme, and provision and maintenance of personal protective equipment.

l. Radiological baseline study and a program for radiation monitoring in the environment of the nuclear facility.

m. Summary program for periodic in-service inspections.

n. Programs for maintenance and aging management.

o. Waste-management plan.

p. Spent-fuel management plan (for facilities producing spent fuel).

q. Post-closure safety case (for disposal facilities).

r. Preliminary closure plan (for disposal facilities).

s. Decommissioning plan.

t. License applicant's evaluation of the compliance with safety requirements.

u. Any other information considered necessary by the NRRC.

Appendix 4: Documents to be submitted when applying for a decommissioning license

The content of these documents may be divided or combined into different documents, to the satisfaction of the NRRC.

The documents to be submitted are as follows:

a. Final decommissioning plan.

b. Final Safety Analysis Report (FSAR) as relevant to the decommissioning phase.

c. Operational Limits and Conditions as applicable to the decommissioning phase.

d. Plans for security arrangements, including security plans, cyber security plans and contingency plans.

e. Plan for emergency arrangements.

f. NMAC manual.

g. Waste-management plan.

h. Spent-fuel management plan.

i. Update of the radiological baseline study and a program for radiation monitoring in the environment of the nuclear facility.

j. Management system manual describing the management of quality and safety during the decommissioning phase.

k. Description of the licensee's organization, duties, competencies and the responsibilities of the personnel necessary for the decommissioning of the facility. The description shall include the demonstration and justification of the adequacy of the organization structure, resources and competencies defined.

l. Maintenance program, in case of deferred dismantling.

m. Program for ageing management.

n. License applicant's evaluation of compliance with safety requirements.

o. Any other information considered necessary by the NRRC.

Appendix 5: Documents to be submitted when applying for a closure license

The content of these documents may be divided or combined into different documents, to the satisfaction of the NRRC.

The documents to be submitted are as follows:

a. Final closure plan.

b. Plan for post-closure activities.

c. Post-closure safety case.

d. Final Safety Analysis Report (FSAR) as relevant to the closure phase.

e. Operational Limits and Conditions if applicable to the closure phase.

f. Plans for security arrangements, including security plans, cyber security plans and contingency plans.

g. Plan for emergency arrangements.

h. NMAC manual.

i. Update of the radiological baseline study.

j. Management system manual describing the management of quality and safety during the closure phase.

k. Description of the licensee's organization, duties, competencies and the responsibilities of the personnel necessary for

the closure of the facility. The description shall include the demonstration and justification of the adequacy of the organization structure, resources and competencies defined.

l. License applicant's evaluation of compliance with safety requirements.

m. Any other information considered necessary by the NRRC.

Superseded by NRRC-R-03 Rev. 0.1 2024

King Fahd National Library Cataloging-in-Publication Data

L.D. no. 1443/12863
ISBN: 978-603-04-1953-1

Superseded by NRRC-R-03 Rev. 0.1 2024

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هيئة الرقابة النووية والإشعاعية
Nuclear and Radiological Regulatory Commission