


**DEPARTMENT OF MINERAL RESOURCES AND ENERGY**

NO. R. 266

26 March 2021

**NATIONAL NUCLEAR REGULATOR ACT, 1999 (ACT NO. 47 OF 1999):  
REGULATIONS ON THE LONG TERM OPERATION OF NUCLEAR INSTALLATIONS**

I, Mr. Samson Gwede Mantashe, Minister of Mineral Resources and Energy, in terms of section 36 read with section 47 of the National Nuclear Regulator Act, 1999 (Act No. 47 of 1999), on the recommendation of the Board of Directors of the National Nuclear Regulator, and after public consultation, hereby make the Regulations in the Schedule.



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**S.G. MANTASHE, MP**  
**MINISTER OF MINERAL RESOURCES AND ENERGY**

## SCHEDULE

### Arrangement of Regulations

1. Definitions
2. Purpose and application of Regulations
3. Lodging of applications for operations beyond the established timeframe for an operating nuclear installation
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## Definitions

1. In these Regulations a word or expression to which a meaning has been assigned in the Act or in the Regulations on Safety Standards and Regulatory Practices (Government Notice No. R. 388 in Government *Gazette* 28755 of 28 April 2006) bears the meaning so assigned and, unless the context otherwise indicates—

**"Act"** means the National Nuclear Regulator Act, 1999 (Act No. 47 of 1999);

**"ageing management"** means engineering, operations and maintenance actions to control, within acceptable limits, the ageing degradation of structures, systems and components;

**"current licensing basis"** means the safety case applicable at any time during operation of the nuclear installation, comprising of applicable Regulations and all licence-binding documentation which will include, but may not be limited to, project management documentation, the safety analysis report, and safety related programmes applicable during licensing stages (including all modifications), which shall be retained as records;

**"licensee"** means the authorised holder of a nuclear installation licence granted by the Regulator;

**"Long Term Operation"** means the operation of the nuclear installation beyond an established time-frame set forth by, for example, the licence term, design, standards, licence or regulations, which have been justified by safety assessment, with consideration given to life limiting processes or features of structures, systems, and components;

**"periodic safety review"** means a systematic reassessment of the safety of an existing nuclear installation that is carried out at regular intervals to deal with the cumulative effects of ageing, modifications, operating experience, technical developments and siting aspects, and aims to ensure a high level of safety throughout the service life of the nuclear installation;

**"safety case"** means a logical and hierarchical set of documents that demonstrates compliance with the Regulatory requirements and criteria and describes the radiological hazards in terms of a nuclear installation, site and the modes of operation, including potential undesired modes. It encompasses the authorisation basis, and safety related documentation applicable during different authorisation stages and will include the safety assessment, operational safety related programmes and supporting documentation; and

**"safety related programmes"** collectively refers to all nuclear safety related activities conducted during the operational phase of the nuclear installation and may also be applicable during interim authorisation stages.

## **Purpose and application of Regulations**

2. (1) The purpose of these Regulations is to establish the requirements for Long Term Operation of nuclear installations beyond an established timeframe defined in the respective nuclear installation licence or current licensing basis.

(2) These Regulations are applicable to licensees who want to apply for the Long Term Operation of nuclear installations.

## **Lodging of applications for operations beyond the established timeframe for an operating nuclear installation**

3. (1) Any licensee wishing to operate a nuclear installation beyond an established timeframe defined in the respective nuclear installation licence shall lodge, in terms of section 21(1) of the Act, an application for the operation of the respective nuclear installation beyond an established timeframe with the Chief Executive Officer of the National Nuclear Regulator.

(2) The application shall be done in the format prescribed in the terms of section 21 of the Act in the *Regulations in terms of Section 47, read with Sections 21 and 22 of the National Nuclear Regulator Act, 1999 (Act No. 47 of 1999), on the format for the Application for a Nuclear Installation Licence or a Certificate of Registration or a Certificate of Exemption*, as published by Government Notice No. 1219 of 21 December 2007, within the specified timelines and shall clearly indicate the period of Long Term Operation being applied for.

(3) The application shall be supported by a safety case to demonstrate continued safe operation of the nuclear installation for the period of Long Term Operation and the safety case shall be submitted within the timelines specified by the Regulator.

### **Requirements of safety case for Long Term Operation**

4. The safety case for Long Term Operation shall amongst others—
- (a) demonstrate compliance with relevant regulatory safety criteria and requirements;
  - (b) be prepared using the results of safety analyses, with due consideration of the ageing of structures, systems and components and the periodic safety review;
  - (c) provide an overall assessment of the safety of the nuclear installation and justification for continued safe operation for the intended period of Long Term Operation;
  - (d) demonstrate availability of financial and human resources as well as knowledge management for the period of Long Term Operation, which knowledge management shall include an integrated, systematic approach to identifying, managing and sharing an organisation's knowledge and enabling groups of people to collectively create new knowledge to help achieve the organisation's objectives; and
  - (e) identify necessary safety improvements which may include, but are not limited to, refurbishment, provision of additional structures, systems and components and additional safety analyses and engineering justifications, to ensure that the licensing basis remains valid during the period of Long Term Operation.

## **Factors to be considered for Long Term Operation**

5. Factors to be considered in evaluating an application for Long Term Operation will include, but are not limited to, the following:

- (a) Safety related programmes relevant for ensuring the safe Long Term Operation of the nuclear installation beyond the timeframe established by the current licensing basis or the nuclear installation licence;
- (b) effectiveness of the ageing management programme necessary for ensuring that required safety functions of structures, systems and components are fulfilled over the period of Long Term Operation of the nuclear installation;
- (c) revalidation of the time limited ageing analyses to ensure continued acceptability of the analysed structures, systems or components for the planned period of Long Term Operation; and
- (d) utilisation of the results of the periodic safety review to justify Long Term Operation of the nuclear installation.

## **Requirements for programme for Long Term Operation**

6. (1) The licensee shall ensure that an effective ageing management programme is developed, implemented and maintained to ensure that required safety functions of structures, systems and components are fulfilled over the entire operating lifetime of the nuclear installation.

(2) The licensee shall conduct systematic periodic safety reviews of the nuclear installation throughout its operational lifetime, taking into account the actual status of the facility, including the consequences of the cumulative effects of ageing and modifications to the facility, the operating experience and significant new safety information from relevant sources.

(3) The licensee shall develop and implement a comprehensive programme for ensuring the safe Long Term Operation of the nuclear installation beyond the time-frame established by the design limits in the current licensing basis or the nuclear installation licence.

(4) The comprehensive programme for Long Term Operation shall address the following:

- (a) relevant plant documentation and safety related programmes;
- (b) consideration of the relevant scope of systems, structures and components important to Long Term Operation that must be agreed and approved by the Regulator;
- (c) review of nuclear installation safety related programmes for Long Term Operation;
- (d) ageing management review for Long Term Operation, including the review of existing ageing management programmes and development of new ageing management programmes as necessary;
- (e) revalidation of time limited ageing analysis;
- (f) long term operation documentation; and
- (g) the implementation programme for Long Term Operation.



## Licensing stages

7. (1) The application to operate the nuclear installation beyond the established timeframe shall not create an expectation that the regulatory approval will be granted by the Regulator for the period of Long Term Operation applied for.

(2) The licence issued in terms of these Regulations to operate the nuclear installation beyond the established timeframe, , shall be for the period as determined by the Regulator.

(3) Notwithstanding sub-regulations (1) and (2) above, the application may initiate subsequent licensing stages which may include extended shutdown or decommissioning if the licensee fails to demonstrate the safe Long Term Operation of the nuclear installation.

## Offences and Penalties

8. Any licensee who operates a nuclear installation beyond the period stipulated in the licence, unless granted an exemption by the Regulator, is guilty of an offence and shall be liable, on conviction, to a fine or imprisonment for a period not exceeding 10 years.

**Short title and commencement**

9. These Regulations are called the "Regulations on the Long Term Operation of Nuclear Installations" and will come into operation on the date of promulgation in the *Gazette*.