GOVERNMENT NOTICES

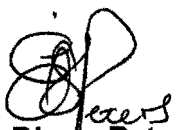
DEPARTMENT OF ENERGY

No. R. 927 **11 November 2011**

NATIONAL NUCLEAR REGULATOR ACT, 1999 (ACT NO. 47 OF 1999)

THE REGULATIONS ON LICENSING OF SITES FOR NEW NUCLEAR INSTALLATIONS

I, Dipuo Peters, Minister of Energy hereby, in terms of section 36 read with section 47, of the National Nuclear Regulator Act, 1999 (Act No. 47 of 1999), and on the recommendation of the Board of Directors of the National Nuclear Regulator, make the regulations in the Schedule.



Dipuo Peters, MP
Minister: Energy
Date: 07/10/2011

SCHEDULE

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Definitions

1. In these Regulations any 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) shall have the meaning so assigned, and unless the context otherwise indicates-

"disaster management infrastructure" means all infrastructure and services, outside the site boundary, necessary for the implementation of an emergency plan, including public communication, protection of the environment and property, transport, personnel, radiation monitoring, decontamination, mass care and medical care.

"dose limits" means dose limits specified in the Regulations on Safety Standards and Regulatory Practices (Government Notice No. R. 388 in Government Gazette 28755 of 28 April 2006).

"emergency planning zone" means the off-site area around the new nuclear installation(s) for which planning and preparation are made in advance to ensure that necessary and effective protective actions can be taken to protect the public, property and the environment in the case of an accident.

"external events" means events not associated with the operation of the nuclear installation(s) that could have an effect on the safety of the installation(s).

"internal events" means events associated with the operation of the nuclear installation(s) that could have an effect on the safety of the installation(s).

"new nuclear installation" means a nuclear installation constructed after the date on which these regulations come into effect.

" probabilistic risk limits" means probabilistic risk limits specified in the Regulations on Safety Standards and Regulatory Practices (Government Notice No. R. 388 in Government Gazette 28755 of 28 April 2006).

"source term" means the amount, and isotopic composition of radioactive material released or postulated to be released from the nuclear installation(s) as well as the release characteristics and associated data required for the impact analysis.

"stochastic effects" means health effects, the probability of occurrence of which is greater for a higher radiation dose and the severity of which, if it occurs, is independent of dose and generally occurs without a threshold.

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

Purpose and scope of regulations

2. The purpose of these Regulations is to establish requirements for applications for nuclear installation site licences for siting.

Lodging of applications

3. (1) Any person wishing to site a nuclear installation in terms of section 21 (1) of the Act must lodge an application for a nuclear installation site licence with the Chief Executive Officer of the National Nuclear Regulator.

(2) An application must-

(a) be supported by a Site Safety Report containing such information as listed in Regulation 5 below, and

(b) be accompanied by the prescribed application fee, if any.

Factors to be considered when evaluating sites for nuclear installation

4. Factors to be considered in evaluating an application for a nuclear installation site licence will include, but not be limited, to -

(1) Factors relating to all nuclear installations in the vicinity.

(2) The proposed nuclear installation design(s), and the characteristics specific to the site. New nuclear installation(s) must reflect through their design, construction and operation an acceptably low probability of postulated events that could result in release of quantities of radioactive material.

(3) The site location and the engineered safety features of all nuclear installations, included as safety measures against the hazardous consequences of postulated events, must ensure an acceptably low risk of public exposure.

(4) The site must be such that radiological doses and risks from normal operation and postulated events associated with all nuclear installations in the vicinity will be acceptably low.

(5) Natural phenomena and potential man-made hazards must be appropriately accounted for in the design of the new nuclear installation(s), and that adequate emergency plans and nuclear security measures can be developed.

(6) The cumulative radiological impact of all nuclear installations and actions, in the vicinity, for which authorizations have already been granted

by the Regulator, including the potential impact of nuclear installation(s) referred to in the scope of the nuclear installation site licence to be granted by the Regulator.

Requirements for a Site Safety Report

5. A Site Safety Report referred to in Regulation 3 (2)(a) must contain the following -

(1) A motivation for the choice of the site to ensure a low risk of public exposure from the operation of the nuclear installation(s).

(2) A statement as to the proposed use of the site in terms of the range of technologies and plant designs being considered for the nuclear installation(s) and use of the site, including where appropriate the maximum thermal power, general design characteristics such as the engineered safety features of the nuclear installation(s) included as safety measures against the hazardous consequences of postulated events, and the layout on the site.

(3) The characteristics of the site relevant to the design assessment, risk and dose calculations, including inter alia:

(a) *external events;*

(b) meteorological data;

(c) land use;

(d) population demographics;

(e) regional development;

(f) projections of the above data commensurate with the design life of the nuclear installation(s).

(4) A *source term* analysis that is representative of the overall potential hazards posed to the public and the environment owing to the *new nuclear installation(s)*. A representative scope of internal and *external events* enveloping the *new nuclear installation(s)* must be taken into consideration.

(5) A Probabilistic Risk Assessment (PRA) using the site characteristics referred to in Regulation 5(3) and the *source terms* referred to in Regulation 5(4) to demonstrate compliance with the *probabilistic risk limits*. This analysis must include the impact of all nuclear installations and actions on the site, existing and proposed, for which authorizations have been granted by the Regulator.

(6) An analysis of the impact on the public due to normal operations of the new nuclear installation(s), including minor occurrences that can be kept under control, to demonstrate compliance with the *dose limits*. This analysis must include the impact of all nuclear installations and actions on

the site, existing and proposed, for which authorizations have been granted by the Regulator.

(7) The identification and determination of *emergency planning zones* using the characteristics of the site, *source term* analysis and PRA established in accordance with Regulations 5(3), 5(4) and 5(5) respectively. In determining the *emergency planning zones* due account must be taken of physical boundaries such as rivers, dams, mountain ranges, as well as municipal boundaries. The *emergency planning zones* must include the following:

(a) An exclusion zone which is a radius determined for the purposes of evacuating persons in the event of a nuclear accident. Within the boundaries of that zone or within any erven intersecting with that zone there must be no members of the public resident, no uncontrolled recreational activities , no commercial activities, or institutions which are not directly linked to the operation of nuclear installations situated within this zone, or for which an authorization has been not been granted;

(b) An overall *Emergency Planning Zone* (EPZ) of such size that emergency or remedial measures must be considered where the potential exists that any members of the public may receive more than an annual effective dose of 1mSv due to the *source term*;

(c) A Long Term Protective Action Planning Zone (LPZ),

where preparations for effective implementation of protective actions to reduce the risk of *stochastic health effects* from long term exposure to deposition and ingestion must be developed in advance consistent with international standards.

(8) An analysis to demonstrate the viability of an emergency plan taking into account relevant data established in accordance with Regulations 5(3), 5(4), and 5(5), including *disaster management infrastructure*. It must be shown that risks to the public, as well as the financial consequences caused by damage and radioactive contamination, are as low as reasonably achievable.

(9) An assessment on the suitability of the *site*, from a nuclear security perspective as determined by the NNR.

Period of Validity

6. (1) The licence issued in terms of these Regulations shall be valid for an indefinite period provided that a person who has been granted such a licence shall, before commencing with the construction of the nuclear installation, be required to provide details contained in Regulation 5(3); (7)

and (8) of these Regulations if a period of 5 years has elapsed since the granting of the licence and the Regulator shall at its own discretion decide whether to confirm the granting of the licence based on the new information or to withdraw the licence.

(2) The granting of the site licence by the Regulator shall not amount to an automatic granting of a nuclear installation licence which must be applied for separately.

Title

7. These Regulation shall be called the Regulations on Licencing of Sites for New Nuclear Installations, 2010.