National Nuclear Regulator Act 1999, Act 47 of 1999, and Regulations

Foreword

The National Nuclear Regulator (NNR) is a public entity which is established and governed in terms of Section 3 of the National Nuclear Regulator Act, (Act No 47 of 1999). The fundamental objective of the NNR is to provide for the protection of persons, property and the environment against nuclear damage through the establishment of safety standards and regulatory practices suited for South Africa. To this end, the NNR provides oversight and assurance that activities related to the peaceful use of nuclear energy in South Africa are carried out in a safe manner and in accordance with international principles and best practices.

As the competent authority in nuclear safety, the NNR is required to fulfill South Africa's obligations with respect to international instruments concerning the International Atomic Energy Agency's Regulations for the Safe Transport of Radioactive Material and to coordinate and implement South Africa's Contracting Party (CP) obligations to the IAEA Convention on Nuclear Safety (CNS) and the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management.

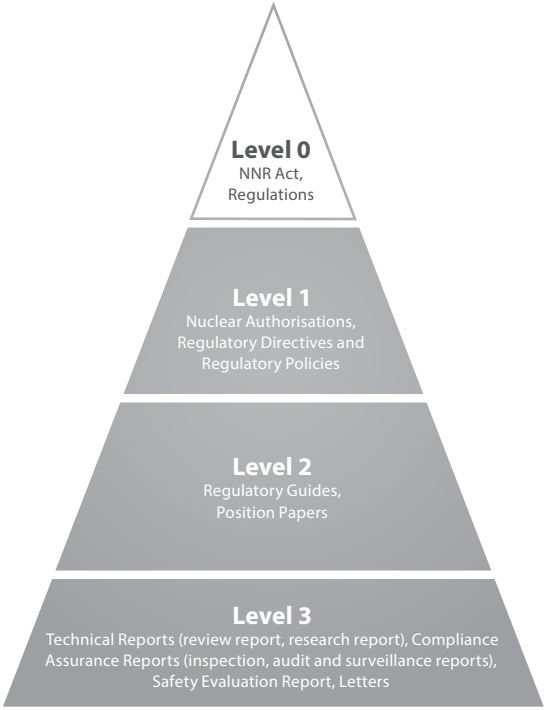
The IAEA safety standards establish fundamental safety principles, requirements and measures to control the radiation exposure of people and the release of radioactive material to the environment, to restrict the likelihood of events that might lead to a loss of control over a nuclear reactor core or a radioactive source and to mitigate the consequences of such events if they were to occur.

The NNR adopts the IAEA safety standards as references and benchmarks for developing nuclear safety regulations for the South African industry. The active participation of NNR experts in the various IAEA Safety Standards Committees contributes towards further enhancing the national nuclear safety regulatory regime in South Africa.

Driven by international, political, economic and social trends that will shape the future of nuclear safety regulation, the NNR continues to reaffirm its commitment towards playing a pivotal role in the nuclear industry in South Africa. The NNR's commitments remain anchored in effective nuclear safety regulation and its top priority is to promote a safety orientated culture in the South African nuclear industry and to respect South Africa's international commitments on the peaceful use of nuclear energy.

Dr M.B Tyobeka
CEO: National Nuclear Regulator
South Africa

NNR Regulatory Document Hierarchy



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National Nuclear Regulator Act 47 of 1999

NATIONAL NUCLEAR REGULATOR ACT No 47, 1999

To provide for the establishment of a National Nuclear Regulator in order to regulate nuclear activities, for its objects and functions, for the manner in which it is to be managed and for its staff matters; to provide for safety standards and regulatory practices for protection of persons, property and the environment against nuclear damage; and to provide for matters connected therewith.

BE IT ENACTED by the Parliament of the Republic of South Africa, as follows:—

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CHAPTER 1
INTERPRETATION

Definitions

1. In this Act, unless the context indicates otherwise—
   (i) **"action"** means—
      (a) the use, possession, production, storage, enrichment, processing, reprocessing, conveying or disposal of, or causing to be conveyed, radioactive material;
      (b) any action, the performance of which may result in persons accumulating a radiation dose resulting from exposure to ionising radiation; or
      (c) any other action involving radioactive material;
   (ii) **"board"** means the Board of Directors as referred to in section 8(1);
   (iii) **"certificate of exemption"** means a certificate referred to in section 22(1);
   (iv) **"certificate of registration"** means a certificate referred to in section 22(1);
   (v) **"chief executive officer"** means the person appointed as such in terms of section 15(1);
   (vi) **"closure"** means the completion of all operations after the emplacement of spent fuel or radioactive waste in a disposal facility;
   (vii) **"Council for Nuclear Safety"** means the Council for Nuclear Safety contemplated in section 33 of the Nuclear Energy Act, 1993 (Act No. 131 of 1993);
   (viii) **"enrich"** means increase the ratio of an isotopic constituent of an element to the remaining isotopic constituents of that element relative to the naturally occurring ratio, and "enrichment" has a corresponding meaning;
   (ix) **"financial year"**, in relation to the Regulator, means the period contemplated in section 18;
   (x) **"inspector"** means the person appointed as such in terms of section 41(1);
   (xi) **"ionising radiation"** means electromagnetic or corpuscular emission emitted from radioactive material

and capable of producing ions, directly or indirectly while passing through matter;

(xii) **"Minister"** means the Minister of Minerals and Energy;

(xiii) **"nuclear accident"** means any occurrence or succession of occurrences having the same origin which—

(a) results in the release of radioactive material, or a radiation dose, which exceeds the safety standards contemplated in section 36; and

(b) is capable of causing nuclear damage;

(xiv) **"nuclear authorisation"** means a nuclear installation licence, nuclear vessel licence, certificate of registration or certificate of exemption;

(xv) **"nuclear damage"** means—

(a) any injury to or the death or any sickness or disease of a person; or

(b) other damage, including any damage to or any loss of use of property or damage to the environment, which arises out of, or results from, or is attributable to, the ionising radiation associated with a nuclear installation, nuclear vessel or action;

(xvi) **"nuclear energy"** means all the energy released by a nuclear fission or nuclear fusion process;

(xvii) **"nuclear incident"** means—

(a) any unintended event at a nuclear installation which causes off-site public exposure of the order of at least one tenth of the prescribed limits; or

(b) the spread of radioactive contamination on a site or exposure of a worker above the prescribed limits or a significant failure in safety provisions, other than a nuclear accident;

(xviii) **"nuclear installation"** means—

(a) a facility, installation, plant or structure designed or adapted for or which may involve the carrying out of any process, other than the mining and processing of ore, within the nuclear fuel cycle involving radioactive material, including, but not limited to—

(i) a uranium or thorium refinement or conversion facility;

(ii) a uranium enrichment facility;
(iii) a nuclear fuel fabrication facility;
(iv) a nuclear reactor, including a nuclear fission reactor or any other facility intended to create nuclear fusion;
(v) a spent nuclear fuel reprocessing facility;
(vi) a spent nuclear fuel storage facility;
(vii) an enriched uranium processing and storage facility; and
(viii) a facility specifically designed to handle, treat, condition, temporarily store or permanently dispose of any radioactive material which is intended to be disposed of as waste material; or

(b) any facility, installation, plant or structure declared to be a nuclear installation in terms of section 2(3);

(xix) **"nuclear installation licence"** means a licence referred to in section 21(1);

(xx) **"nuclear reprocessing facility"** means a facility operated to extract or separate from source material or special nuclear material that has been subjected to radiation, those constituents that have undergone transmutations as a result of the radiation, or those constituents that have not undergone transmutations and are re-usable;

(xxi) **"nuclear vessel licence"** means a licence referred to in section 21(2);

(xxii) **"period of responsibility"**, in relation to the holder of a nuclear authorisation, means the period beginning on the date of the grant of the relevant nuclear installation licence or certificate of registration or, in the case of a nuclear vessel, when it enters South Africa's territorial waters, and ending on whichever of the following dates is the earlier, namely—

(a) the date on which the Regulator gives notice in writing to the holder that in its opinion the risk of nuclear damage from—
(i) anything on the site, or at or in the nuclear installation, in question;

(ii) any act performed in regard to the nuclear installation or site in question;

(iii) any action described in section 2(1)(c), as the case may be, no longer exceeds the safety standards contemplated in section 36;

(b) the date on which a nuclear authorisation in respect of the nuclear installation, site or action in question is granted to some other person;

(c) in the case of a nuclear vessel, the date on which the nuclear vessel leaves South Africa's territorial waters;

(xxiii) **"plant"** means any machinery, equipment or device, whether it is attached to the ground or not;

(xxiv) **"prescribed"** means prescribed by regulation made in terms of section 47;

(xxv) **"previous Act"** means the Nuclear Energy Act, 1993 (Act No. 131 of 1993);

(xxvi) **"radioactive material"** means any substance consisting of, or containing, any radioactive nuclide, whether natural or artificial, including, but not limited to, radioactive waste and spent nuclear fuel;

(xxvii) **"radioactive nuclide"** means any unstable atomic nucleus which decays spontaneously with the accompanying emission of ionising radiation;

(xxviii) **"radioactivity"** means the measure of a quantity of radioactive materials;

(xxix) **"Regulator"** means the National Nuclear Regulator established by section 3;

(xxx) **"site"** means a site on which—

(a) a nuclear installation is situated or is being constructed; or

(b) any action which is capable of causing nuclear damage, is carried out;

(xxxi) **"specified date"** means the date contemplated in section 56(2);

(xxxii) **"this Act"** includes any regulations made in terms of section 47.

Application of Act, and declaration of nuclear installation

2. (1) Subject to subsection (2), this Act applies to—
   (a) the siting, design, construction, operation, decontamination, decommissioning and closure of any nuclear installation;
   (b) vessels propelled by nuclear power or having radioactive material on board which is capable of causing nuclear damage; and
   (c) any action which is capable of causing nuclear damage.

   (2) This Act does not apply to—
   (a) exposure to cosmic radiation or to potassium-40 in the body or any other radioactive material or actions not amenable to regulatory control as determined by the Minister, after consultation with the board and by notice in the Gazette;
   (b) subject to section 41(4), any action where the radioactivity concentrations of individual radioactive nuclides, or the total radioactivity content, are below 10 the exclusion levels provided for in the safety standards contemplated in section 36;
   (c) Group IV hazardous substances as defined in section 1 of the Hazardous Substances Act, 1973 (Act No. 15 of 1973);
   (d) exposure to ionising radiation emitted from equipment, declared to be a Group III hazardous substance in terms of section 2(1)(b) of the Hazardous Substances Act, 1973.

   (3) For the purposes of this Act, the Minister may, after consultation with the board and by notice in the Gazette, declare any facility, installation, plant or structure, including a mine or ore-processing facility, to be a nuclear installation.

CHAPTER 2
NATIONAL NUCLEAR REGULATOR

Establishment of National Nuclear Regulator

3. A juristic person to be known as the National Nuclear Regulator, comprising a board, a chief executive officer and staff, is hereby established.

Regulator successor to assets and liabilities of Council for Nuclear Safety

4. (1) On the specified date, all assets, rights, liabilities and obligations of the Council for Nuclear Safety pass to the Regulator.
   (2) The Registrar of Deeds concerned must make such entries or endorsements as are necessary to give effect to subsection (1) in or on any relevant register, title deed or any other document in his or her office or submitted to him or her.
   (3) No office fees or other moneys are payable in respect of such an entry or endorsement.

Objects of Regulator

5. The objects of the Regulator are to—
   (a) provide for the protection of persons, property and the environment against nuclear damage through the establishment of safety standards and regulatory practices;
   (b) exercise regulatory control related to safety over—
      (i) the siting, design, construction, operation, manufacture of component parts, and decontamination, decommissioning and closure of nuclear installations; and
      (ii) vessels propelled by nuclear power or having radioactive material on board which is capable of causing nuclear damage, through the granting of nuclear authorisations;

(c) exercise regulatory control over other actions, to which this Act applies, through the granting of nuclear authorisations;
(d) provide assurance of compliance with the conditions of nuclear authorisations through the implementation of a system of compliance inspections;
(e) fulfil national obligations in respect of international legal instruments concerning nuclear safety; and
(f) ensure that provisions for nuclear emergency planning are in place.

Co-operative governance

6. (1) To give effect to the principles of co-operative government and intergovernmental relations contemplated in Chapter 3 of the Constitution of the Republic of South Africa, 1996 (Act No. 108 of 1996), all organs of state, as defined in section 239 of the Constitution, on which functions in respect of the monitoring and control of radioactive material or exposure to ionising radiation are conferred by this Act or other legislation, must co-operate with one another in order to—
(a) ensure the effective monitoring and control of the nuclear hazard;
(b) co-ordinate the exercise of such functions;
(c) minimise the duplication of such functions and procedures regarding the exercise of such functions; and
(d) promote consistency in the exercise of such functions.
(2) The Regulator must conclude a co-operative agreement with every relevant organ of state to give effect to the co-operation contemplated in subsection (1).
(3) The Minister must, after consultation with the board and in consultation with the Ministers responsible for the relevant organs of state, make regulations regarding—
(a) time periods and procedures, including procedures for public participation and mechanisms for dispute resolution, in respect of the conclusion of co-operative agreements referred to in subsection (2);

(b) matters that must be provided for in co-operative agreements, including, but not limited to, provision for—
   (i) time periods for the implementation of co-operative agreements;
   (ii) the co-ordination of the functions referred to in subsection (1) in a manner that avoids unnecessary duplication and omissions regarding safety requirements and the issuing of conflicting instructions;
   (iii) measures to be taken in the event of non-compliance with a co-operative agreement;
   (iv) dispute resolution in respect of the interpretation or application of co-operative agreements referred to in subsection (2).

(4) The Minister must publish by notice in the Gazette every co-operative agreement concluded in terms of subsection (2).

Functions of Regulator

7. (1) The Regulator may, subject to this Act, for the purpose of achieving its objects—
   (a) grant or amend nuclear authorisations;
   (b) hire, purchase or otherwise acquire any movable and immovable property and proprietary right, and rent or dispose of property so acquired, but may not acquire or dispose of immovable property without the prior approval of the Minister, granted with the agreement of the Minister of Finance;
   (c) collaborate with any other body or institution or establish and control facilities for the collection and dissemination of scientific and technical information, in connection with any matter regarding nuclear energy falling within the objects of the Regulator;
   (d) collaborate with any educational, scientific or other body, a government or institution in connection with the provision of instruction for, or the training of, persons required by the Regulator;

(e) provide, on such conditions as the Regulator thinks fit, financial or other assistance in connection with the training of persons in so far as in the board's opinion it is necessary to ensure that a sufficient number of trained persons are available to enable the Regulator to perform its functions;

(f) insure itself against any loss, damage, risk or liability which it may suffer or incur;

(g) advise the Minister on matters associated with any action or condition which—

(i) is capable of causing nuclear damage;

(ii) the Minister refers to the Regulator; or

(iii) the Regulator thinks necessary to advise the Minister on;

(h) for purposes of this Act, act as the national competent authority in connection with the International Atomic Energy Agency's Regulations for the Safe Transport of Radioactive Material;

(i) conclude contracts, enter into agreements or perform any act, whether in the Republic or elsewhere, whereby its objects are carried into effect or which is calculated, directly or indirectly, to enhance the value of the services which the Regulator renders towards the achievement of its objects or which may be prescribed;

(j) produce and submit to the Minister an annual public report on the health and safety related to workers, the public and the environment associated with all sites including, but not limited to, the prescribed contents.

(2) The Minister must table in Parliament the annual public report submitted to him or her in terms of subsection (1)(j) within 14 days after it is so submitted if Parliament is then in ordinary session or, if Parliament is not then in ordinary session, within 14 days after the commencement of its next ordinary session.

(3) The functions of the Regulator must be performed by the chief executive officer, as directed by the board, except where otherwise specified in this Act.

Control and management of affairs of Regulator

8. (1) The Regulator is governed and controlled, in accordance with this Act, by a Board of Directors.

(2) The board—

(a) must ensure that the objects of the Regulator referred to in section 5 are carried out; and

(b) exercises general control over the performance of the Regulator's functions.

(3) The board represents the Regulator and all acts performed by the board or on its authority are the acts of the Regulator.

(4) The board consists of—

(a) the following directors appointed by the Minister:

(i) One representative of organised labour;

(ii) one representative of organised business;

(iii) one person representing communities, which may be affected by nuclear activities;

(iv) an official from the Department of Minerals and Energy;

(v) an official from the Department of Environmental Affairs and Tourism; and

(vi) not more than seven other directors; and

(b) the chief executive officer.

(5) The Minister must from among the directors of the board referred to in subsection (4)(a)(vi) appoint a chairperson and a deputy chairperson.

(6) A person may only be appointed as a director in terms of subsection (4)(a) if he or she is suitably qualified.

(7) For the purposes of appointing the directors of the board referred to in subsection (4)(a)(i), (ii), (iii) and (vi)—

(a) the Minister must through the media and by notice in the Gazette invite nominations of persons as candidates for the relevant positions on the board;

(b) a panel, appointed by the Minister, which may include representatives of the relevant committees of Parliament, must compile a shortlist of not more than 20 candidates from the persons so nominated;

(c) the Minister must, from the shortlist so compiled and from other persons nominated as contemplated in paragraph (a), appoint persons to the relevant positions on the board; and

(d) the Minister may, for a director appointed in terms of subsection (4)(a)(i) to (v), appoint a suitably qualified alternate director to act in the place of that director during his or her absence.

(8) A person is disqualified from being appointed or remaining a director of the board if he or she—

(a) is not a South African citizen;

(b) is declared insolvent;

(c) is convicted of an offence and sentenced to imprisonment without the option of a fine;

(d) becomes a member of Parliament, a provincial legislature, a Municipal Council, the Cabinet or the Executive Council of a province;

(e) is a holder of a nuclear authorisation or an employee of such holder.

(9) A director of the board may not be present during, or take part in, the discussion of, or the making of a decision on, any matter before the board in which that director or his or her spouse, life partner, child, business partner or associate or employer, other than the State, has a direct or indirect financial interest.

(10) Upon appointment of a person as a director of the board he or she must submit to the Minister and the board a written statement in which he or she declares whether or not he or she has any interest contemplated in subsection (9).

(11) If any director acquires or contemplates acquiring an interest, which could possibly be an interest contemplated in subsection (9), he or she must immediately in writing declare that fact to the Minister and the board.

(12) (a) The chairperson of the board holds office for a period specified in the letter of appointment but not exceeding three years and may be reappointed upon expiry of that term of office.

(b) A director referred to in subsection (4)(a) holds office for a period specified in the letter of appointment but not exceeding three years and may be reappointed upon expiry of that term of office.

(13) (a) If a director dies or vacates office, the Minister may, subject to subsection (8), appoint another person as a director.

(b) The person so appointed serves for the unexpired portion of the predecessor's term of office.

(14) Despite the preceding provisions of this section—

(a) the persons who, immediately before the specified date, served as members of the council of the Council for Nuclear Safety in terms of the previous Act, must act as the directors of the Regulator's board from the specified date until the day immediately before the Regulator's board, constituted in accordance with subsection (4), meets for the first time; and

(b) the chairperson of that council must act as chairperson of that board for the period contemplated in paragraph (a) and must determine the times and places of its meetings.

Vacation of office of board members

9. (1) The Minister may at any time discharge a director of the board from office—

(a) if the director has repeatedly failed to perform his or her functions efficiently;

(b) if, because of any physical or mental illness or disability, the director has become incapable of performing his or her functions or performing them efficiently; or

(c) for misconduct.

(2) A director vacates office when—

(a) he or she is disqualified in terms of section 8(8);

(b) he or she is discharged in terms of subsection (1);

(c) he or she is absent from three consecutive meetings of the board without the chairperson's permission, unless the board has condoned the absence on good reasons advanced; or

(d) the person's resignation as director takes effect.

Meetings of board

10. (1) The first meeting of the board is held at the time and place determined by the Minister, and thereafter meetings are held at such times and places as the board determines.

(2) The chairperson or, in his or her absence, the deputy chairperson, may at any time call a special meeting of the board to be held at the time and place determined by the chairperson or deputy chairperson.

(3) All directors must be notified in writing of every meeting of the board.

(4) A majority of the directors forms a quorum at any meeting of the board.

(5) Subject to subsection (4), a decision of the majority of the directors present at a meeting of the board constitutes a decision of the board and, in the event of an equality of votes on any matter, the person chairing the relevant meeting has a casting vote in addition to a deliberative vote.

(6) No decision taken by the board or an act performed under its authority, is invalid merely by reason of—

(a) a vacancy on the board; or

(b) the fact that any person not entitled to do so, sat as a director at the time that decision was taken, if that decision was taken or that act was authorised by the required majority of directors present at the meeting who were entitled to sit as directors.

(7) (a) If the chairperson is for any reason unable to act, or the office of chairperson is vacant, the deputy chairperson must act as chairperson.

(b) If both the chairperson and deputy chairperson are for any reason unable to act, or both the offices of chairperson and deputy chairperson are vacant, the board must designate any other director to act as chairperson.

Minutes of board meetings

11. (1) The board must cause minutes of its meetings to be kept and copies of the minutes to be circulated to its members.

(2) Such minutes, when signed at a next meeting by the person who chairs that meeting, are, in the absence of proof of error therein, regarded as a true and correct record of the proceedings and are prima facie evidence of those proceedings before a court of law, any tribunal or a commission of inquiry.

Committees of board

12. The board may—

(a) establish such committees as it considers necessary to assist it in the performance of its functions; and

(b) appoint as members of any such committee such persons, including directors of the board, staff of the Regulator, the holders of nuclear authorisations and employees of such holders, as the board considers appropriate.

Remuneration of directors and committee members

13. A director, or member of a committee, of the board, other than the chief executive officer or a person who is in the full-time employment of the Regulator or other organ of state, is appointed on such conditions, including conditions relating to the payment of remuneration and allowances, as the Minister determines with the agreement of the Minister of Finance.

Delegation and assignment by board

14. (1) Subject to subsections (2), (3), (4) and (5), the board may, by resolution, delegate any power, and assign any duty, conferred or imposed on it by the operation of section 8(1) or (2) or conferred or imposed on it elsewhere by this Act, to its chairperson or a committee of the board.

(2) The board is not divested of any power or relieved of any function it so delegated or assigned.

(3) Such delegation or assignment—

(a) may be made subject to conditions determined by the board;

(b) may, subject to subsection (5), be given together with the power to subdelegate or further assign, subject to conditions determined by the board;

(c) must be communicated to the delegatee or assignee in writing.

(4) The written communication in terms of subsection (3)(c)—

(a) must contain full particulars of the matters being delegated or assigned and of the conditions determined in terms of subsection (3)(a); and

(b) if the power of subdelegation or further assignment is conferred, must state that fact and any conditions determined in terms of subsection (3)(b).

(5) The board may, by resolution—

(a) amend or revoke a delegation or assignment made in terms of subsection (1);

(b) withdraw any decision, other than a decision which confers a right or entitlement on any third party, made by the delegatee or assignee with regard to a delegated or assigned matter, and decide the matter itself.

(6) The Minister may, by notice in the Gazette—

(a) prohibit the delegation by the board of any particular power or its assignment of any particular duty, whether generally or in the circumstances specified in the notice;

(b) limit the circumstances in which any particular power or duty of the board may be delegated, subdelegated, assigned or further assigned;

(c) prescribe conditions for the delegation of any particular power or assignment of any particular duty.

Chief executive officer of Regulator

15. (1) The Minister must, after consultation with the board, appoint a person with suitable qualifications as chief executive officer of the Regulator.

(2) A person is disqualified from being appointed or remaining a chief executive officer if subject to any of the disqualifications mentioned in section 8(8).

(3) A chief executive officer holds office for a period not exceeding three years as specified in the letter of appointment and may be reappointed upon expiry of that term of office.

(4) The Minister may at any time discharge the chief executive officer from office—

(a) if the chief executive officer has repeatedly failed to perform the duties of office efficiently;

(b) if, because of any physical or mental illness or disability, the chief executive officer has become incapable of performing the functions of that office or performing them efficiently; or

(c) for misconduct.

(5) (a) The person who, immediately before the specified date was the executive officer of the Council for Nuclear Safety by virtue of appointment to that office in terms of section 44 of the previous Act, must, from the specified date until the date on which the appointment of the Regulator's first chief executive officer in terms of subsection (1) of this section takes effect, act as the Regulator's chief executive officer.

(b) A person so acting is not precluded from being appointed as the Regulator's chief executive officer in terms of subsection (1).

(6) The chief executive officer must—

(a) ensure that the functions of the Regulator in terms of this Act are performed;

(b) report to the board on the proper functioning of the Regulator;

(c) issue a nuclear authorisation in accordance with this Act;

(d) complete a report on the activities of the Regulator for each financial year in accordance with the Reporting by Public Entities Act, 1992 (Act No. 93 of 1992), and submit the report to the board for approval;

(e) each financial year, after consultation with the board and with the approval of the Minister, publish and distribute a plan of action for the activities of the Regulator.

(7) The board must forward the report mentioned in subsection (6)(d), as approved by it, to the Minister within three months of the end of the financial year concerned.

(8) The chief executive officer is the accounting officer of the board charged with the responsibility of accounting for all money received and payments made by, and the assets of, the Regulator.

(9) The chief executive officer must exercise all the powers and perform all the duties conferred or imposed on the accounting officer by—

(a) this Act, the Reporting by Public Entities Act, 1992, or any other law;

(b) the board.

(10) If the chief executive officer is for any reason unable to perform any of his or her functions, the chairperson of the board must appoint an employee of the Regulator to act as chief executive officer until the chief executive officer is able to resume those functions.

(11) An acting chief executive officer has all the powers and must perform all the duties of the chief executive officer.

Staff of Regulator

16. (1) Subject to the written directions of the board, the chief executive officer may appoint such staff for the Regulator as are necessary to perform the work arising from or connected with the Regulator's functions in terms of this Act.

(2) (a) The terms and conditions of service of the chief executive officer and other staff of the Regulator, including their remuneration, allowances, subsidies

and other service benefits, are determined by the board.

(b) That remuneration and those allowances, subsidies and other service benefits must be determined in accordance with a system approved by the Minister with the agreement of the Minister of Finance.

(3) (a) The persons who, immediately before the specified date, were employees of the Council for Nuclear Safety appointed in terms of section 13(1) of the previous Act, or deemed by section 13(2) of that Act to have been so appointed, are, from that date, deemed to be employees of the Regulator who have been appointed in terms of subsection (1) of this section.

(b) The terms and conditions of service, allowances, subsidies and other service benefits that were applicable to those employees immediately before the specified date, continue, with effect from the specified date, to apply until re-determined by the board in terms of subsection (2).

(c) The terms and conditions of service, allowances, subsidies and other service benefits so re-determined, may not be less than those applicable before the re-determination.

(d) Those employees' respective periods of pensionable service with the Council for Nuclear Safety or its predecessor in terms of any law must be regarded as pensionable service for the purpose of membership of any pension fund or scheme of which they are members after the specified date.

(e) The leave which has been accumulated by each of those employees while in the service of the Council for Nuclear Safety must be regarded as if it were leave accumulated by such an employee in the service of the Regulator.

(4) Subject to subsection (5), the Regulator is regarded to be an associated institution for the purposes of the Associated Institutions Pension Fund Act, 1963 (Act No. 41 of 1963).

(5) The board may, with the approval of the Minister granted with the agreement of the Minister of Finance, establish,

manage and administer any pension or provident fund or medical scheme for the benefit of the staff of the Regulator for the benefit of its employees or have such a scheme or fund managed or administered by any other body or person.

(6) Any pension or provident fund established by the Council for Nuclear Safety in terms of section 13(4)(b) of the previous Act is deemed to be a fund established in terms of subsection (5).

Funds of Regulator

17. (1) The funds of the Regulator consist of—
   (a) money appropriated by Parliament;
   (b) fees paid to the Regulator in terms of section 28; and
   (c) donations or contributions received by the Regulator, with the approval of the Minister, from any source.

(2) The Regulator must, within the constraints of its statement referred to in subsection (7), utilise its funds for the defrayal of the expenses incurred by it in the performance of its functions in terms of this Act.

(3) The chief executive officer must—
   (a) open an account in the name of the Regulator with an institution registered as a bank in terms of the Banks Act, 1990 (Act No. 94 of 1990); and
   (b) deposit therein all money received in terms of subsection (1).

(4) The chief executive officer may, on behalf of the Regulator, invest any money received in terms of subsection (1) which is not required for immediate use—
   (a) with the approval of the Minister, with the Public Investment Commissioners referred to in section 2 of the Public Investment Commissioners Act, 1984 (Act No. 45 of 1984); or
   (b) with such other institution as the board and the Minister, with the agreement of the Minister of Finance, determine.

(5) The Regulator may use interest derived from the investment contemplated in subsection (4) to defray expenses in connection with the performance of its functions in terms of this Act.

(6) The Regulator may, with the approval of the Minister, granted with the agreement of the Minister of Finance—
   (a) authorise the establishment of such reserve funds as it considers necessary or expedient; and
   (b) deposit such amounts therein, as it considers necessary or expedient.

(7) The Regulator must in each financial year, at such time as determined by the Minister, submit a statement of its estimated income and expenditure for the following financial year to the Minister for his or her approval, granted with the agreement of the Minister of Finance.

(8) The Auditor-General must externally audit the Regulator.

Financial year of Regulator

18. The Regulator's financial year is from 1 April in any year to 31 March in the following year, but the first financial year is from the specified date to 31 March in the following year.

Judicial management and liquidation of Regulator

19. Despite the provisions of any other law, the Regulator may not be placed under judicial management or in liquidation except if authorised by an Act of Parliament adopted specially for that purpose.

CHAPTER 3
NUCLEAR AUTHORISATION

Restrictions on certain actions

20. (1) No person may site, construct, operate, decontaminate or decommission a nuclear installation, except under the authority of a nuclear installation licence.

(2) No vessel which is propelled by nuclear power or which has on board any radioactive material capable of causing nuclear damage may—

(a) anchor or sojourn in the territorial waters of the Republic; or

(b) enter any port of the Republic, except under the authority of a nuclear vessel licence.

(3) No person may engage in any action described in section 2(1)(c) other than any action contemplated in subsection (1) or (2), except under the authority of a certificate of registration or a certificate of exemption.

Application for nuclear installation or vessel licence

21. (1) Any person wishing to site, construct, operate, decontaminate or decommission a nuclear installation may apply in the prescribed format to the chief executive officer for a nuclear installation licence and must furnish such information as the board requires.

(2) Any person wishing to—

(a) anchor or sojourn in the territorial waters of the Republic; or

(b) enter any port in the Republic, with a vessel which is propelled by nuclear power or which has on board any radioactive material capable of causing nuclear damage, may apply to the chief executive officer for a nuclear vessel licence and must furnish such information as the board requires.

(3) The chief executive officer must direct the applicant for a nuclear installation or vessel licence to—

(a) serve a copy of the application upon—

(i) every municipality affected by the application; and

(ii) such other body or person as the chief executive officer determines; and

(b) publish a copy of the application in the Gazette and two newspapers circulating in the area of every such municipality.

(4) (a) Any person who may be directly affected by the granting of a nuclear installation or vessel licence pursuant to an application in terms of subsection (1) or (2), may make representations to the board, relating to health, safety and environmental issues connected with the application, within 30 days of the date of publication in the Gazette contemplated in subsection (3)(b).

(b) If the board is of the opinion that further public debate is necessary, it may arrange for such hearings on health, safety and environmental issues as it determines.

(5) Subject to the board's approval, the chief executive officer may—

(a) refuse an application for a nuclear installation or vessel licence and must provide the applicant in writing with the reasons for the refusal; or

(b) grant an application for a nuclear installation licence or nuclear vessel licence subject to such conditions as may be determined in terms of section 23.

Application for certificate of registration or exemption for certain actions

22. (1) Any person wishing to engage in any action described in section 2(1)(c) may apply in the prescribed format to the chief executive officer for a certificate of registration or a certificate of exemption and must furnish such information as the board requires.

(2) The chief executive officer may direct that the applicant for a certificate of registration—

(a) serve a copy of the application upon—

(i) every municipality affected by the application; and

(ii) such other body or person as the chief executive officer determines; and

(b) publish a copy of the application in the Gazette and two newspapers circulating in the area of every such municipality.

(3) The chief executive officer may, with the approval of the board—

(a) refuse to grant an application for a certificate of exemption or a certificate of registration made in terms of subsection (1) and must provide the applicant in writing with the reasons for the refusal; or

(b) issue—

(i) a certificate of registration subject to such conditions as may be determined in terms of section 23; or

(ii) a certificate of exemption if satisfied that the action in question complies with the exemption criteria specified in the safety standards contemplated in section 36.

Conditions relating to nuclear installation licence, nuclear vessel licence or certificate of registration

23. (1) The chief executive officer may establish standard conditions applicable to one or more categories of certificates of registration.

(2) The chief executive officer may, subject to subsection (3), impose any condition in a nuclear installation or vessel licence or certificate of registration which—

(a) is necessary to ensure the protection of persons, property and the environment against nuclear damage; or

(b) provides for the rehabilitation of the site.

(3) The chief executive officer—

(a) may, subject to paragraph (c), amend any condition in a nuclear installation or vessel licence or certificate of registration;

(b) must notify the person in writing to whom the nuclear installation or vessel licence or certificate of registration was issued of such amendment and the reasons therefor; and

(c) must submit to the board any amendments made to a nuclear authorisation as contemplated in paragraph (a) for ratification at the first meeting of the board following the amendments.

Special conditions relating to nuclear vessel licence

24. (1) The chief executive officer may include in a nuclear vessel licence—

(a) conditions relating to—

(i) liability for nuclear damage which may determine, limit or preclude liability, despite any provisions to the contrary in any other law; or

(ii) security for nuclear damage and the manner of providing the security, as determined by the Minister;

(b) any other conditions as the chief executive officer considers necessary to ensure compliance with the safety standards contemplated in section 36;

(c) if the vessel in question is registered outside the Republic, the appropriate terms of any agreement between the Government of the Republic and the government of the country in which the vessel is registered.

(2) Any provision included in an agreement referred to in subsection (1)(c) which could be included in terms of subsection (1)(a) or (b) as a condition of a nuclear vessel licence, is considered to be a condition of that licence, even if it is not expressly embodied in the relevant licence as a condition thereof.

(3) Subject to the terms of any agreement referred to in subsection (1)(c), the chief executive officer may amend or repeal any condition imposed in terms of this section.

(4) A nuclear vessel licence is valid for such period as is determined by the chief executive officer, and may from time to time be renewed for any further period.

(5) The holder of a nuclear vessel licence is not, solely because of the expiry of that licence, relieved of liability for nuclear damage resulting from anything which occurred or which was done or omitted during the currency of that licence.

(6) The chief executive officer must exercise the powers conferred by this section on behalf of the board and subject to the Minister's directions.

Prohibition on transfer of nuclear authorisation

25. A nuclear authorisation is not transferable.

Responsibilities of holders of nuclear authorisations

26. (1) The holder of a nuclear authorisation must, at all times, display copies of that authorisation at such places and in such languages and form as determined by the chief executive officer to ensure public access to the conditions specified in the authorisation.

(2) The holder of a nuclear authorisation must implement an inspection programme to ensure compliance with all conditions of the nuclear authorisation.

(3) The holder of a nuclear authorisation must provide any information or monthly return as required by the chief executive officer.

(4) The holder of a nuclear installation licence must establish a public safety information forum as prescribed in order to inform the persons living in the municipal area in respect of which an emergency plan has been established in terms of section 38(1) on nuclear safety and radiation safety matters.

Revocation and surrender of nuclear authorisation

27. (1) The chief executive officer may, with the approval of the board, revoke a nuclear authorisation.

(2) The holder of a nuclear authorisation may surrender that authorisation.

(3) If a nuclear authorisation has been revoked or surrendered in terms of subsection (1) or (2), the holder of the nuclear authorisation concerned must—

(a) if so directed by the chief executive officer, deliver to the person appointed by the chief executive officer, or account for, such nuclear authorisation; and

(b) for the duration of his or her period of responsibility, display, or cause to be displayed, on the relevant site or the vessel in respect of which a nuclear authorisation has been granted, such notices as directed by the chief executive officer.

(4) On revocation or surrendering of a nuclear authorisation, or at any time during the period of responsibility of the holder of that authorisation, the chief executive officer, in writing, may give any direction to the person liable for nuclear damage in terms of section 30, which the chief executive officer believes is necessary to prevent nuclear damage which—

(a) may be caused by anything which is being done, may be done or was done; or

(b) is or was present,

at or in the relevant nuclear installation or site.

Fees for nuclear authorisation

28. The Minister may, on the recommendation of the board and in consultation with the Minister of Finance and by notice in the Gazette, determine the fees payable to the Regulator in respect of—

(a) any application for the granting of a nuclear authorisation;

(b) an annual nuclear authorisation fee.

CHAPTER 4
FINANCIAL SECURITY AND LIABILITY

Financial security by holder of nuclear installation licence

29. (1) The Minister must, on the recommendation of the board and by notice in the Gazette, categorise the various nuclear installations in the Republic, based on the potential consequences of a nuclear accident.

(2) The Minister must, on the recommendation of the board and in consultation with the Minister of Finance and by notice in the Gazette, determine—

(a) the level of financial security to be provided by holders of nuclear installation licences in respect of each of those categories; and

(b) the manner in which that financial security is to be provided, in order for the holder of a nuclear installation licence to fulfil any liability which may be incurred in terms of section 30.

(3) Despite subsection (2), the Minister may, after consultation with the board, for so long as the holder of a nuclear installation licence may be liable for nuclear damage—

(a) increase or decrease the level of financial security to be provided by that holder as determined in terms of subsection (2);

(b) if financial security has not been required in terms of subsection (2) require that holder to provide financial security;

(c) discharge that holder from the requirement to provide financial security;

(d) amend the manner in which that holder must provide financial security.

(4) If—

(a) nuclear damage occurs and compensation is claimed as a result thereof; or

(b) the Minister is satisfied that such compensation is likely to be so claimed, the Minister may require the holder of the nuclear installation licence in question to give

additional financial security in respect of those claims or possible claims, to an amount which the Minister, after consultation with the board, determines.

(5) The holder of a nuclear installation licence must annually provide proof to the Regulator that any claim for compensation to an amount contemplated in section 30(2), can be met.

Strict liability of holder of nuclear installation licence for nuclear damage

30. (1) Subject to subsections (2), (3), (5) and (6), only a holder of a nuclear installation licence is, whether or not there is intent or negligence on the part of the holder, liable for all nuclear damage caused by or resulting from the relevant nuclear installation during the holder's period of responsibility—

(a) by anything being present or which is done at or in the nuclear installation or by any radioactive material or material contaminated with radioactivity which has been discharged or released, in any form, from the nuclear installation; or

(b) by any radioactive material or material contaminated with radioactivity which is subject to the nuclear installation licence, while in the possession or under the control of the holder of that licence during the conveyance thereof from the nuclear installation, to any other place in the Republic or in the territorial waters of the Republic from or to any place in or outside the Republic.

(2) The liability for nuclear damage by any holder of a nuclear installation licence is limited, for each nuclear accident, to the amounts determined in terms of section 29(2).

(3) The liability contemplated in subsection (1)(b) ends upon the relevant material coming—

(a) onto another site in respect of which a nuclear installation licence has been granted; or

(b) onto a site or into the possession or the control of any person authorised in terms of section 3A of the

Hazardous Substances Act, 1973 (Act No. 15 of 1973), where such material is a Group IV hazardous substance as defined in section 1 of that Act.

(4) For the purposes of subsection (1) radioactive material or material contaminated with radioactivity which is being conveyed on behalf of the holder of a nuclear installation licence is regarded to be in the possession or under the control of the holder of that licence.

(5) Nothing in this section precludes a person from claiming a benefit in terms of the Compensation for Occupational Injuries and Diseases Act, 1993 (Act No. 130 of 1993), but such person may not benefit both in terms of this Act and the Compensation for Occupational Injuries and Diseases Act, 1993.

(6) The holder of a nuclear installation licence is not liable to any person for any nuclear damage—

(a) to the extent to which such nuclear damage is attributable to the presence of that person or any property of that person at or in the nuclear installation or on the site in respect of which the nuclear installation licence has been granted, without the permission of the holder of that licence or of a person acting on behalf of that holder; or

(b) if that person intentionally caused, or intentionally contributed to, such damage.

(7) The holder of a nuclear installation licence retains any contractual right of recourse or contribution which the holder has against any person in respect of any nuclear damage for which that holder is liable in terms of subsection (1).

(8) Any person who, without a nuclear installation licence, carries out an action for which such a licence is required, is, whether or not there is intent or negligence on the part of that person, liable for all nuclear damage.

(9) Nothing in this section affects any right, which any person has in terms of any contract of employment, to benefits more favourable than those to which that person may be entitled in terms of this section.

Special provisions for liability for nuclear damage caused by vessels

31. If the chief executive officer has not determined any conditions for liability for nuclear damage as contemplated in section 24(1)(a)(i) for a holder of a nuclear vessel licence granted in respect of a vessel, the provisions of section 30 apply with the changes required by the context.

Liability of holder of certificate of registration for nuclear damage

32. (1) The liability of a holder of a certificate of registration, for any nuclear damage caused by or resulting from any action carried out by virtue of that certificate during his or her period of responsibility, must be determined in accordance with—
    (a) the common law; or
    (b) the Compensation for Occupational Injuries and Diseases Act, 1993 (Act No. 130 of 1993), as the case may be.

Claims for compensation in excess of maximum liability

33. (1) If—
    (a) the total amount of claims for compensation against a holder of a nuclear installation licence; or
    (b) the total amount of claims for compensation against such holder plus the estimated amount of claims for compensation likely to be required to be paid, exceeds, or is likely to exceed, the amount for which that holder has given security in terms of section 29, the holder must immediately notify the board and the Minister thereof in writing.
    (2) Such notice must include—
    (a) particulars of the total number and amount of all such claims received; and
    (b) an estimate of the number and amount of any other claims which may have to be satisfied.

(3) If on receipt of that notice, the Minister is satisfied that the total amount of claims for compensation against a holder of a nuclear installation licence that is unpaid, and of such claims as are likely to be made thereafter, will exceed the amount of security given by that holder in terms of section 29 in respect of such claims, the Minister must—

(a) table in Parliament a report on the nuclear damage in question, which recommends that Parliament appropriate funds for rendering financial assistance to the holder to the amount by which the claims exceed or are likely to exceed the security which is available; and

(b) by notice in the Gazette suspend the obligation to pay the claims in respect of that nuclear damage until Parliament has decided about the recommendation.

(4) The liability of a person who has provided or must provide financial security as contemplated in section 29, is not affected by any appropriation in terms of subsection (3)(b).

(5) If Parliament has by resolution decided that funds to an amount specified in the report by the Minister be appropriated, no payment of any such claim for compensation arising out of the nuclear damage concerned may be made after the passing of such resolution without the approval of the Minister or an order of court.

(6) The giving of additional security by a holder of a nuclear installation licence in terms of section 29(4) does not affect the application of this section.

Prescription of actions

34. (1) Despite anything to the contrary in any other law, an action for compensation in terms of section 30, 31 or 32 may, subject to subsection (2), not be instituted after the expiration of a period of 30 years from—

(a) the date of the occurrence which gave rise to the right to claim that compensation; or

(b) the date of the last event in the course of that occurrence or succession of occurrences, if a

continuing occurrence or a succession of occurrences, all attributable to a particular event or the carrying out of a particular operation, gave rise to that right.

(2) If the claimant concerned became aware, or by exercising reasonable care could have become aware, of—

(a) the identity of the holder of the nuclear authorisation concerned; and

(b) the facts from which the right to claim compensation arose, during the period of 30 years contemplated in subsection (1), an action for compensation in terms of section 30, 31 or 32 may not be instituted after the expiration of a period of two years from the date on which he or she so became aware or could have become aware.

(3) The running of the period of two years referred to in subsection (2) is suspended from the date negotiations regarding a settlement by or on behalf of the claimant and the relevant holder of the nuclear authorisation are commenced in writing until the date any party notifies the other party that the negotiations are terminated.

Compensation for injuries of Regulator's employees

35. (1) If a person who is employed in any capacity by or on behalf of the Regulator, while so performing services, suffers a personal injury or contracts a disease attributable to ionising radiation from any radioactive material, or to the flammable, explosive, poisonous or special properties of radioactive material, or to the ionising radiation produced by any apparatus, and in respect of which no liability can be established in terms of section 30, 31 or 32, the Regulator must, subject to subsection (2)—

(a) defray all reasonable expenses incurred by or on behalf of such person in respect of any medical treatment, including, but not limited to, the supply and maintenance of any artificial part of the body or other device, necessitated by such injury or disease; and

(b) pay compensation in respect of disablement or death caused by such injury or disease.

(2) Nothing in this section precludes an employee of the Regulator from claiming a benefit in terms of the Compensation for Occupational Injuries and Diseases Act, 1993 (Act No. 130 of 1993), but such employee may not benefit both in terms of this Act and the Compensation for Occupational Injuries and Diseases Act, 1993.

(3) Nothing in this section affects any right, which any person has in terms of any contract of employment, to benefits more favourable than those to which that person may be entitled in terms of this section.

CHAPTER 5
SAFETY AND EMERGENCY MEASURES

Safety standards and regulatory practices

36. (1) The Minister must, on the recommendation of the board, make regulations regarding safety standards and regulatory practices.

(2) Before any regulations are made in terms of subsection (1), the Minister must, by notice in the Gazette, invite the public to comment on the proposed regulations and consider that comment.

Duties regarding nuclear accidents and incidents

37. (1) If a nuclear accident occurs in connection with a nuclear installation, nuclear vessel or action, the holder of the nuclear authorisation in question must immediately report it to the Regulator and to any other person described in that nuclear authorisation.

(2) When the occurrence of a nuclear accident is so reported to the Regulator, it must—

(a) immediately investigate such accident and its causes, circumstances and effects;

(b) in such manner as it thinks fit, define particulars of the period during which and the area within which, in its opinion, the risk of nuclear damage connected with the accident exceeds the safety standards and regulatory practices contemplated in section 36;

(c) direct the holder of the nuclear authorisation in question to obtain the names, addresses and identification numbers of all persons who were during that period within that area; and

(d) if, of the opinion that it has not been informed of all persons who could have been present during that period within that area, publish by notice in the Gazette and in two publications of the daily newspapers in circulation in that area, the fact that a nuclear accident has occurred during that period within that area.

(3) (a) The Regulator must, in the prescribed manner, keep a record of the names of all persons who, according to its information, were within the area so defined at any time during the period so defined, and of such particulars concerning them as may be prescribed.

(b) For the purposes of the proof of claims for compensation for nuclear damage, any such record is on its mere production by any person in a court of law admissible in evidence, and is prima facie proof of the presence of the person in question within the area and during the period so defined.

(4) The right of any person to claim compensation from a holder of a nuclear authorisation in terms of section 30 is not prejudiced by—

(a) the defining of any area or period in terms of subsection (2)(b); or

(b) the failure to record the name of any person in terms of subsection (3).

(5) If a nuclear incident occurs on a site, the holder of the nuclear authorisation in question must report it to the Regulator within the period stipulated in that authorisation.

Emergency planning

38. (1) Where the possibility exists that a nuclear accident affecting the public may occur, the Regulator must direct the relevant holder of a nuclear authorisation, other than a holder of a certificate of exemption, to—
    (a) enter into an agreement with the relevant municipalities and provincial authorities to establish an emergency plan within a period determined by the Regulator;
    (b) cover the costs for the establishment, implementation and management of such emergency plan insofar as it relates to the relevant nuclear installation or any action contemplated in section 2(1)(c); and
    (c) submit such emergency plan for its approval.

    (2) The Regulator must ensure that such emergency plan is effective for the protection of persons should a nuclear accident occur.

    (3) When a nuclear accident occurs, the holder of a nuclear authorisation, other than a holder of a certificate of exemption, in question must implement the emergency plan as approved by the Regulator.

    (4) The Minister may, on recommendation of the board and in consultation with the relevant municipalities, make regulations on the development surrounding any nuclear installation to ensure the effective implementation of any applicable emergency plan.

Record of nuclear installations

39. (1) The Regulator must keep—
    (a) a record of the particulars;
    (b) a map showing the location; and
    (c) where applicable, diagrams showing the position and limits,

    of nuclear installations in respect of which a nuclear installation licence has been granted.

(2) If the Regulator believes that a risk of nuclear damage—
(a) arising from anything done or being done; or
(b) which has been or is present,
at or in any nuclear installation in respect of which a nuclear installation licence is no longer in force, is within safety standards contemplated in section 36, it may remove the particulars in connection therewith from that record.

Record of nuclear accidents and incidents and access thereto

40. The Regulator must—
(a) keep and maintain a record of the details of every nuclear accident and nuclear incident;
(b) store that record safely;
(c) retain that record for 40 years from the date of the nuclear accident or nuclear incident; and
(d) on the request of any person, make that record available to that person.

Appointment and powers of inspectors

41. (1) The chief executive officer must, with the approval of the board and subject to section 16(2), appoint such number of suitably qualified inspectors to enforce compliance with the objects of the Regulator referred to in section 5.
(2) The chief executive officer must issue to every person appointed under subsection (1) a certificate to the effect that such person has been so appointed and restricting such person to the actions in respect of which he or she may exercise the powers and perform the duties conferred or imposed on an inspector in terms of this Act.
(3) When exercising his or her powers or performing his or her duties in terms of this Act, the inspector must on request by any interested person produce that certificate.
(4) Subject to the restrictions in the certificate contemplated in subsection (2), an inspector may—
(a) at all reasonable times enter—

(i) any nuclear installation or site in respect of which an application for a nuclear installation licence has been made or such a licence has been granted;

(ii) any place which the inspector on reasonable grounds suspects to be a site on which there is a nuclear installation;

(iii) any place where parts of a nuclear installation are present or manufactured;

(iv) any place where radioactive material is kept or is present, and in respect of which an application for a nuclear authorisation has been made or a nuclear authorisation has been granted;

(v) any place where the inspector on reasonable grounds suspects that radioactive material is kept or present or any action prohibited in terms of section 20 is being carried out;

(b) carry out inspections and use any applicable equipment during such inspections at any of the nuclear installations, sites or places referred to in paragraph (a) and conduct such investigations as are necessary for the purpose of monitoring or enforcing compliance with this Act;

(c) if necessary for the purposes of monitoring or enforcing compliance with this Act, direct in writing the holder of or the applicant for a nuclear authorisation, or any other person having any power or duty in connection with or on the relevant nuclear installation, site or place referred to in paragraph (a), to—

(i) allow the inspector to take away for investigation the articles or objects pointed out by the inspector;

(ii) allow the inspecting of the documents specified by the inspector, and to make copies thereof;

(iii) furnish to the inspector information which is under his or her control;

(d) after signing for any object or document, or copies thereof, remove it for investigation;

(e) if any action contemplated in section 20, or any condition associated with such action, does not comply with the requirements laid down in the nuclear authorisation, or with the safety standards contemplated in section 32, direct any person in control of the action—
   (i) to discontinue such action or immediately rectify such condition; or
   (ii) to rehabilitate the relevant site or other place to a condition that complies with the requirements laid down in the nuclear authorisation or with the safety standards contemplated in section 36;
(f) if any action contemplated in section 2(2)(b), or any condition associated with such action, does not comply with the exemption criteria specified in the safety standards contemplated in section 36, direct the person in control of the action—
   (i) to discontinue such action or immediately rectify such condition;
   (ii) to rehabilitate the site or other place to a condition that complies with the exemption criteria provided for in the safety standards contemplated in section 36; or
   (iii) to apply for a certificate of registration;
(g) require any person who causes any site or other place to be contaminated with radioactive material to rehabilitate the site or place to a condition that complies with the safety standards contemplated in section 36;
(h) be accompanied by such persons as the inspector considers necessary—
   (i) to assist the inspector in the exercise of his or her powers in terms of this subsection;
   (ii) to exercise such powers, and perform such duties, of the inspector as he or she determines;
(i) exercise any other powers and perform any other duties conferred or imposed by this Act.

(5) An inspector authorised thereto in writing by the Regulator has, in respect of any vessel and subject to the terms of any agreement referred to in section 24(1)(c), has the same powers conferred upon an inspector in respect of nuclear installations, sites and other places contemplated in this section.

Regulator's powers regarding security of property and premises

42. (1) The Regulator may make or cause to be made such arrangements as it considers necessary for the proper protection or security of property which belongs to, or is under the control of the Regulator or is on any premises on which activities of the Regulator are performed.

(2) No unauthorised person may enter any premises which—

(a) are under the control of the Regulator; and

(b) the Regulator has identified as premises where information relating to the safety and security of or on a nuclear installation is kept.

CHAPTER 6
APPEALS

Appeal to chief executive officer against inspector's decision

43. (1) Any person adversely affected by any action or decision of an inspector may appeal to the chief executive officer against that action or decision.

(2) Such appeal must—

(a) be lodged within 60 days from the date of the action or the date on which the decision was made known, as the case may be, or such later date as the chief executive officer permits; and

(b) set out the grounds of appeal.

(3) After considering the grounds of appeal and the inspector's reasons for the action or decision, the chief executive officer must as soon as practicable—

(a) confirm, set aside or amend the action or decision; or

(b) substitute any other decision for the decision.

Appeal to board against chief executive officer's decision

44. (1) Any person adversely affected by a decision of the chief executive officer, either in terms of section 43(3) or in the exercise of any power in terms of this Act, may appeal against that decision to the board.

(2) Such appeal must—

(a) be lodged within 60 days from the date on which that decision was made known by the chief executive officer or such later date as the board permits; and

(b) must set out the grounds for the appeal.

(3) After considering the grounds of appeal and the chief executive officer's reasons for the decision, the board must as soon as practicable—

(a) confirm, set aside or vary the decision; or

(b) substitute any other decision for the decision of the chief executive officer.

Appeal to Minister against board's decision

45. (1) Any person adversely affected by a decision of the board, either in terms of section 44(3) or in the exercise of any power in terms of this Act, may appeal against that decision to the Minister.

(2) Such appeal must—

(a) be lodged within 60 days from the date on which the decision was made known by the board or such later date as the Minister permits; and

(b) set out the grounds for the appeal.

(3) After considering the grounds of appeal and the board's reasons for the decision, the Minister must as soon as practicable—

(a) confirm, set aside or vary the decision; or

(b) substitute any other decision for the decision of the board.

Appeal to High Court against Minister's decision

46. (1) Any person adversely affected by a decision of the Minister, either in terms of section 45(3) or in the exercise of any power in terms of this Act, may appeal against that decision to the High Court.

(2) Such appeal must—

(a) be lodged within 60 days from the date on which the decision was made known by the Minister or such later date as the High Court permits; and

(b) set out the grounds for the appeal.

(3) The appeal must be proceeded with as if it were an appeal from a Magistrate's Court to a High Court.

CHAPTER 7
GENERAL

Regulations

47. (1) The Minister may, after consultation with the board and by notice in the Gazette, make regulations as to any matter—

(a) required or permitted to be prescribed in terms of this Act;

(b) necessary for the effective administration of this Act.

(2) Any regulation made in terms of subsection (1) may provide that—

(a) the contravention of or failure to comply therewith, is an offence; and

(b) a person convicted of that offence is punishable with a prescribed fine or a term of imprisonment not longer than the period so prescribed.

(3) Before any regulations are made in terms of subsection (1), the Minister must, by notice in the Gazette, invite comment on the proposed regulations and consider that comment.

(4) Despite the repeal of the previous Act, the regulations made under section 77 of the previous Act and in force immediately before the specified date, in so far as they relate to matters which are required or permitted to be prescribed as contemplated in subsection (1)(a) or (b), are regarded to have been made in terms of subsection (1).

Delegations and assignment by Minister

48. (1) Subject to subsection (2), the Minister may delegate any power and assign any duty conferred or imposed upon the Minister in terms of this Act to the Director-General: Minerals and Energy.

(2) Any power or duty conferred or imposed upon the Minister in terms of section 2, Chapter 2 and sections 28, 29, 33, 36, 38(4), 45 and 47 may not be delegated or assigned in terms of subsection (1).

(3) A delegation or assignment under subsection (1) must be in writing and may be subject to any conditions or limitations determined by the Minister.

(4) The Minister is not divested of any power nor relieved of any power or duty delegated or assigned in terms of subsection (1).

(5) The Minister may at any time—

(a) amend or revoke a delegation or assignment made in terms of subsection (1);

(b) subject to subsection (5), withdraw any decision made by the delegatee or assignee with regard to a delegated or assigned matter, and decide the matter himself or herself.

(6) A decision made by a delegatee or assignee may not be withdrawn in terms of subsection 5(b) where it confers a right or entitlement on any third party.

Disagreement between Minister and board

49. (1) If the Minister rejects a recommendation of the board contemplated in section 28, 29(1) or (2), 36(1) or 38(4), the Minister and the board must endeavour to resolve their disagreement.

(2) If the Minister and the board fail to resolve their disagreement, the Minister makes the final decision, in consultation with the relevant Minister.

Exemption from duties and fees

50. The Regulator is exempt from the payment of any duty or fee which, were it not for the provisions of this section, would have been payable by it to the State in terms of any law, except the Customs and Excise Act, 1964 (Act No. 91 of 1964), and the Value Added Tax Act, 1991 (Act No. 105 of 1991), in respect of any act or transaction or any document connected with that act or transaction.

Disclosure of information

51. (1) In this section "information" includes anything purporting to be information or containing or providing information.

(2) Subject to subsection (4) and any national legislation contemplated in section 32(2) of the Constitution of the Republic of South Africa, 1996 (Act No. 108 of 1996)—

(a) no person may disclose to any other person or publish any information which relates to any nuclear installation or site or vessel or action described in section 2(1)(c) in respect of which a nuclear authorisation has been issued or is to be issued and not yet public knowledge if the disclosure of that information is likely to jeopardise the physical security arrangements in respect of such installation, site, vessel or action as required by the Regulator

for the protection of persons or the security of the Republic;

(b) no person may be in possession of any documents if not authorised and such possession is likely to jeopardise the physical security arrangements in respect of such installation, site, vessel or action as required by the Regulator for the protection of persons or the security of the Republic;

(c) no person may receive any information knowing or having reasonable grounds to believe that it has been disclosed to him or her in contravention of the provisions of paragraph (a) or (b);

(d) a person must take reasonable steps to safeguard information which he or she has in his or her possession or under his or her control and which he or she is in terms of paragraph (a) or (b) prohibited from disclosing to any person, or publishing, or so conduct himself or herself as not to endanger the secrecy thereof.

(3) No member of the board or a committee of the board or an employee of the Regulator may disclose any information obtained by him or her in the performance of his or her functions in terms of this Act except—

(a) to the extent to which it may be necessary for the proper administration of this Act;

(b) for the purposes of the administration of justice; or

(c) at the request of any person entitled thereto.

(4) Despite the provisions of any other law, no person is civilly or criminally liable or may be dismissed, disciplined, prejudiced or harassed on account of having disclosed any information if—

(a) the person in good faith reasonably believed at the time of the disclosure that he or she was disclosing evidence of a health or safety risk or a failure to comply with a duty imposed by this Act; and

(b) the disclosure was made in accordance with subsection (5).

(5) Subsection (4) applies only if the person concerned—

(a) disclosed the information concerned to—
  (i) a committee of Parliament or a provincial legislature;
  (ii) the Public Protector;
  (iii) the Human Rights Commission;
  (iv) the Auditor-General;
  (v) the National Director of or a Director of Public Prosecutions;
  (vi) the Minister;
  (vii) the Regulator; or
  (viii) more than one of the bodies or persons referred to in subparagraphs (i) to (vii); or

(b) disclosed the information concerned to one or more news medium and on clear and convincing grounds (of which he or she bears the burden of proof) believed at the time of the disclosure—
  (i) that disclosure was necessary to avert an imminent and serious threat to the health or safety of an individual or the public, to ensure that the health or safety risk or the failure to comply with a duty imposed by the Act was properly and timeously investigated or to protect himself or herself against serious or irreparable harm from reprisals; or
  (ii) giving due weight to the importance of open, accountable and participatory administration, that the public interest in disclosure of the information clearly outweighed any need for non-disclosure; or

(c) disclosed the information concerned substantially in accordance with any applicable external or internal procedure (other than the procedures contemplated in paragraph (a) or (b)); or

(d) disclosed information which, before the time of the disclosure of the information, had become available to the public, whether in the Republic or elsewhere.

Offences and penalties

52. (1) Any person who—

(a) contravenes or fails to comply with section 20 or a condition imposed on him or her in terms of section 23;

(b) as a master of a vessel referred to in section 20(2) contravenes or fails to comply with a condition imposed on him or her in terms of section 24;

(c) fails to comply with a directive contemplated in section 41(4);

(d) fails to pay any fee contemplated in section 28;

(e) hinders an inspector in the exercise of his or her powers or the performance of his or her duties in terms of this Act, or fails to comply with any order given to him or her by an inspector in terms of this Act;

(f) contravenes section 42(1) or (2); or

(g) contravenes or fails to comply with section 51, is guilty of an offence.

(2) Any person who contravenes or fails to comply with any provision of this Act or any condition, notice, order, instruction, directive, prohibition, authorisation, permission, exemption, certificate or document determined, given, issued, promulgated or granted in terms of this Act is, if any such contravention or failure is not declared an offence in terms of subsection (1), is guilty of an offence.

(3) Any person convicted of an offence in terms of subsection (1) or (2) is liable on conviction—

(a) in the case of an offence referred to in subsection (1) (a), (b), (c), (d), or (f) or (2) to a fine or to imprisonment for a period not exceeding 10 years;

(b) in the case of an offence referred to in subsection (1) (e), to a fine or to imprisonment for a period not exceeding five years; or

(c) in the case of an offence referred to in subsection

(1)(g), to a fine or to imprisonment for a period not exceeding three years.

Reproduction of documents by Regulator

53. (1) The Regulator may—
(a) reproduce or cause to be reproduced documents in its possession or under its control by—
(i) microfilming;
(ii) electronic means; or
(iii) any other process which in its opinion reproduces such a document in a durable and accurate manner; and
(b) keep or cause to be kept the reproduction instead of the original document in question.

(2) For the purposes of this Act—
(a) any reproduction referred to in subsection (1) is regarded to be the relevant original document; and
(b) a copy obtained by means of that reproduction and certified by the chief executive officer or an officer authorised by the chief executive officer as a true copy,

is *prima facie* evidence of the contents of the original document in any court of law, any tribunal or a commission of inquiry.

Partial repeal of Act 131 of 1993, and savings

54. (1) The following provisions of the Nuclear Energy Act, 1993 (Act No. 131 of 1993), are hereby repealed:
(a) Chapters V and VI;
(b) section 1, in so far as it relates to anything in any of these Chapters; and
(c) the provisions of Chapter VII, in so far as they relate to the Council for Nuclear Safety.

(2) On the specified date anything done before such date in terms of any provision of the previous Act repealed by

subsection (1), and which could be done in terms of this Act, is regarded to have been done in terms of this Act, except where otherwise provided in this Act.

Legal succession to Council for Nuclear Safety

55. (1) The Regulator is substituted for the Council for Nuclear Safety in any contract or agreement entered into by the latter before the specified date, if the contract or agreement—
    (a) relates to any matter which, on the specified date, falls within the Regulator's competence in terms of this Act; and
    (b) has not yet expired or any obligation thereunder has not been fulfilled, whichever is applicable.

    (2) From the specified date, the Regulator—
    (a) is responsible for all projects and work which had been commenced by the Council for Nuclear Safety before that date in terms of the previous Act—
        (i) with regard to matters which, on the specified date, fall within the Regulator's functions in terms of this Act; and
        (ii) which, on the specified date, have not been completed; and
    (b) is competent to continue with any project and work and to carry out those projects and that work or to have them carried out subject to—
        (i) the provisions of this Act; and
        (ii) any contract or agreement, contemplated in subsection (1), relating to the execution of the projects or the performance of the work by the other contracting party.

    (3) (a) The Regulator is substituted for the Council for Nuclear Safety as a party in any legal proceedings instituted by or against the Council for Nuclear Safety before the specified date and still pending on that date, where the legal proceedings are founded on a cause of action relating to or arising from the

exercise or performance of any power or duty of the Council for Nuclear Safety in terms of or purportedly in terms of the previous Act or from its business or operations thereunder, if, on the specified date, the Regulator would have been competent in terms of this Act, to exercise or perform such a power or duty or to conduct any business or operations of a nature substantially the same as those relevant in the proceedings.

(b) Any legal proceedings founded on a cause of action which arose before the specified date, which relates to or arises from the exercise or performance of any power or duty of the Council for Nuclear Safety in terms of the previous Act or from its business and operations thereunder and which is brought after the specified date, must be instituted by or against the Regulator if, on the specified date, the Regulator would have been competent, in terms of this Act, to exercise or perform such a power or duty or to conduct any business or operation of a nature substantially the same as those relevant in the proceedings.

(4) (a) The State, as represented by the Minister, is substituted for the Council for Nuclear Safety in—

(i) any contract or agreement entered into by the Council for Nuclear Safety before the specified date and still pending on that date, in any case where subsection (1) does not apply; and

(ii) any legal proceedings instituted by or against the Council for Nuclear Safety before the specified date and still pending on that date, where the legal proceedings are founded on a cause of action relating to or arising from the exercise or performance of any power or duty or the conducting of any business or operations of the Council for Nuclear Safety, in any case where subsection (3)(a) does not apply;

(b) Any legal proceedings founded on such a cause of action that arose before the specified date and which are brought after the specified date, must be instituted by or against the State, as represented by the Minister, in any case where subsection (3)(b) does not apply.

(c) (i) The Minister is responsible, from the specified date, for all projects and work commenced by the Council for Nuclear Safety before the specified date but not yet completed by that date, in any case where subsection (2)(a) does not apply.

(ii) The Minister is competent to continue with and carry out those projects and that work, subject to the provisions of this Act and any agreement referred to in subsection (2)(b).

Short title and commencement

56. (1) This Act is called the National Nuclear Regulator Act, 1999.

(2) This Act takes effect on the date of commencement of the Nuclear Energy Act, 1999, as contemplated in section 61 of that Act.

Regulation

Cooperative Governance in Respect of Monitoring and Control of Radioactive Material or Exposure to Ionising Radiation

Regulation on Cooperative Governance in Respect of Monitoring and Control of Radioactive Material or Exposure to Ionising Radiation

Published under
GN 709, 24 May 2002

The Minister of Minerals and Energy has, in terms of Section 6)3) of the National Nuclear Regulator Act of 1999 made the regulations set out in the schedule.

SCHEDULE
Definitions

1. In these regulations any word or expression to which a meaning has been assigned in the Act, shall have the meaning so assigned.

Time period for the conclusion of co-operative agreements

2. The regulator shall, within 6 months of these regulations coming into effect, conclude a co-operative agreement in respect of the monitoring and control of radioactive material or exposure to ionising radiation with every relevant organ of state, including but not limited to the following: Department of Health (Directorate Radiation Control), Department of Minerals and Energy (Chief Inspector of Mines; Deputy Director-General: Mineral Development; Deputy Director-General: Energy), Department of Environmental Affairs and Tourism, Department of Water Affairs and Forestry, Department of Labour, Department of Transport.

Procedures, including procedures for public participation

3. The regulator and each relevant organ of state, shall, within 6 months of these regulations coming into effect, and after consultation with any relevant statutory stakeholder body, product a draft co-operative agreement in respect of each of the following objectives of co-operative governance –
   (a) ensuring the effective monitoring and control of the nuclear hazard;
   (b) co-ordinating the exercise of such functions;
   (c) minimising the duplication of such functions and procedures regarding the exercise of such functions; and
   (d) promoting consistency in the exercise of such functions.
   (e) The regulator shall make available such draft co-operative agreement for public comment over a period of 30 days and shall, in consultation with the relevant organ of state, consider such comment and finalise the agreement for submission to the Minister of Minerals and Energy for publication in the Gazette in terms of section 6(4) of the National Nuclear Regulator Act, 1999.

Mechanisms for Dispute Resolution in respect of the conclusion of co-operative agreements

4. Any dispute between the Regulator and another relevant organ of state that cannot be resolved by the parties must be referred to the Minister of Minerals and Energy for determination in consultation with the Minister responsible for the other organ of state.

Matters that must be provided for in co-operation agreements

5. Co-operative agreements must contain the following as a minimum –
   (1) the time period for the implementation of co-operative agreements which shall be within 4 months of it being concluded;
   (2) a description of how the functions in respect of the monitoring and control of radioactive material or exposure to ionising radiation will be co-ordinated in a manner that will avoid unnecessary duplication and omissions regarding safety requirements and the issuing of conflicting instructions;
   (3) measures to resolve non-compliance with a co-operative agreement, which when remaining unresolved shall be reported forthwith to the Minister for determination;
   (4) a description of how any dispute in respect of the interpretation or application of co- operative agreements will be resolved, which when remaining unresolved shall be reported forthwith to the Minister for determination;
   (5) provision to use the same set of safety standards;
   (6) a description of how the monitoring and compliance enforcement functions will be co- ordinated and allocated;
   (7) a record of any delegations, assignments or agency arrangements agreed upon in terms of section 238 of the Constitution or any other law;
   (8) provision for expert assistance and support by one organ of state to the other, as and when required;
   (9) a description of the mechanisms and procedures for co-operation between the parties;
   (10) a description of how relevant information will be shared;
   (11) a description of co-ordinated response to incidents/ accidents;
   (12) a description of the manner in which the co-operative agreement may be amended.

Regulation

Safety Standards and Regulatory Practices

Regulation on Safety Standards and Regulatory Practices

Published under
No. R. 388, 28 April 2006

The Minister of Minerals and Energy has, in terms of Section 36, read with section 47 of the National Nuclear Regulator Act of 1999, made the regulations as set out in the schedule.

SCHEDULE

Sections

Annexures

SECTION 1
DEFINITIONS

1. Terms defined in the Act

In these regulations, any word or expression to which a meaning has been assigned in the Act, shall have the meaning so assigned.

2. Terms not defined in the Act

In these regulations, unless the context indicates otherwise:

(i) **"absorbed dose"** means the fundamental dosimetric quantity D expressed in the unit $J \cdot kg^{-1}$, termed the gray (Gy), defined as:

$$\text{i. } D = \frac{d\bar{\varepsilon}}{dm}$$

where $d\bar{\varepsilon}$ is the mean energy imparted by ionising *radiation* to matter in a volume element and dm is the mass of matter in the volume element;

(ii) **"assessment"** means the process, and the result, of analysing systematically the hazards associated with sources and actions, and associated protection and safety measures, aimed at quantifying performance measures for comparison with criteria;

(iii) **"authorised"** means permitted in writing by the Regulator;

(iv) **"authorised action"** means an action authorised in terms of the National Nuclear Regulator Act, 1999 (Act No. 47 of 1999);

(v) **"average member of the critical group"** means the individual receiving the average effective dose or equivalent dose (as applicable) in the critical group;

(vi) **"becquerel"** (Bq) means the unit of radioactivity in nuclear transformations (or disintegrations) per second;

(vii) **"clearance"** means removal of radioactive materials or radioactive objects within actions authorised by a nuclear installation licence, nuclear vessel licence or certificate of registration from any further control by the Regulator;

(viii) **"collective dose"** means an expression for the total radiation dose incurred by a population, defined as the product of the

number of individuals exposed to a source and their average radiation dose. The collective dose is expressed in person-sievert (person.Sv) (see collective effective dose);

(ix) **"collective effective dose"** means the total effective dose incurred by a population, being the sum of all the individual effective doses to members of the population. Mathematically, the total effective dose to a population, S, is calculated as:

$$\text{i. } S = \sum_i E_i \cdot N_i$$

where E_i is the average effective dose in the population subgroup i and N, is the number of individuals in the subgroup. It can also be defined by the integral:

$$\text{ii. } S = \int_0^\infty E \frac{dN}{dE} \, dE$$

where:

$$\frac{dN}{dE} \, dE$$

is the number of individuals receiving an effective dose between E and E+dE.

The collective effective dose S_k committed by an event, a decision or a finite portion of an action k, during a time interval T, is given by:

$$S_k = \int_0^T \dot{S}_k(t)dt$$

where $\dot{S}_k(t)$ is the collective effective dose rate at time t caused by k;

(x) **"committed equivalent dose"** means the quantity $H_T(\tau)$, defined as:

$$H_T(\tau) = \int_{t_o}^{t_o+t} \dot{H}_T(t)dt$$

where t_o is the time of intake, $\dot{H}_T(t)$ is the equivalent dose rate

at time *t* in organ or tissue T and τ is the time elapsed after an intake of radioactive substances. When τ is not specified, it will be taken to be 50 years for adults and to age 70 years for intakes by children;

(xi) **"critical group"** means a group of members of the public which is reasonably homogeneous with respect to its exposure for a given radiation source and given exposure pathway and is typical of individuals receiving the highest effective dose or equivalent dose (as applicable) by the given exposure pathway from the given source;

(xii) **"decommissioning"**means administrative and technical actions taken to allow the removal of all of the regulatory controls from a facility (except for a repository which is closed and not decommissioned);

(xiii) **"defence in depth"** means the application of more than a single protective measure for a given radiation or nuclear safety objective, so that the objective is achieved even if one of the protective measures fails;

(xiv) **"discharge"** means a planned and controlled release of radioactive nuclides to the environment;

(xv) **"disposal"** means the emplacement of radioactive waste in an approved, specified facility without the intention of retrieval and "dispose of " has the corresponding meaning;

(xvi) **"dose"** means the amount of radiation received, where the use of a more specific term such as "effective dose" or "equivalent dose" is not necessary for defining the quantity of interest;

(xvii) **"dose constraint"** means a prospective and source-related restriction on the individual dose arising from the predicted operation of the authorised action which serves exclusively as a bound on the optimisation of radiation protection and nuclear safety:

(a) to limit the range of options considered in the optimisation process, and

(b) to restrict the doses via all exposure pathways to the average member of the critical group, in order to ensure that the sum of the doses received by that individual from all controlled sources remains within the dose limit, and which, if found retrospectively to have been exceeded, should not be

regarded as an infringement of regulatory requirements but rather as a call for the reassessment of the optimisation of radiation protection.

(xviii) **"dose limit"** means the value of effective dose or equivalent dose to individuals from actions authorised by a nuclear installation licence, nuclear vessel licence or certificate of registration, that must not be exceeded;

(xix) **"effective dose"** means the quantity E expressed in the unit $J \cdot kg^{-1}$, termed the sievert (Sv), defined as the summation of the tissue equivalent doses, each multiplied by the appropriate tissue weighting factor:

$$\text{i} \quad E = \sum_{T} \omega_T H_T$$

where H_T is the equivalent dose in tissue T and w_T is the tissue weighting factor for tissue T; from the definition of equivalent dose, it follows that:

$$\text{ii} \quad E = \sum_{T} W_T \bullet \sum_{R} \omega_R \bullet D_{T,R}$$

where W_R is the radiation weighting factor for radiation R and DT,R is the average absorbed dose in the organ or tissue T;

(xx) **"emergency planning"** means the process of developing and maintaining the capability to take actions that will mitigate the impact of an emergency on persons, property or the environment;

(xxi) **"emergency preparedness"** means the capability to promptly take actions that will effectively mitigate the impact of an emergency on persons, property or the environment;

(xxii) **"emergency response"** means the performance of actions to mitigate the impact of an emergency on persons, property or the environment;

(xxiii) **"equivalent dose"** means the quantity $H_{T,R}$ expressed in the unit $J \cdot kg^{-1}$, termed the sievert (Sv), defined as:

$$\text{i. } H_{T,R} = D_{T,R} \bullet W_R$$

where $D_{T,R}$ is the absorbed dose delivered by radiation type R averaged over a tissue or organ T and W_R is the radiation

weighting factor for radiation type R; when the radiation field is composed of different radiation types with different values of WR, the equivalent dose is:

$$\text{ii. } H_T = \sum_R \omega_R \cdot D_{T,R}$$

(xxiv) **"environmental monitoring"** means the measurement of external dose rates due to sources in the environment and of radioactive nuclide concentrations in environmental media;

(xxv) **"exclusion"** means exclusion from the scope of regulatory control;

(xxvi) **"exemption"** means the determination by the regulator that an action need not be subject to some or all aspects of regulatory control on the basis that the exposure (or potential exposure) due to the action is too small to warrant the application of those aspects;

(xxvii) **"exposure"** means the act or condition of being subject to irradiation;

(xxviii) **"exposure pathway"** means a route by which radioactive material can reach or irradiate humans;

(xxix) **"fertile"** means nuclear material which can be converted into material which is capable of nuclear fission;

(xxx) **"fissile"** means material that undergo fission by neutrons of all energies;

(xxxi) **"IAEA"** means the International Atomic Energy Agency;

(xxxii) **"individual monitoring"** means monitoring using measurements by equipment worn by individual workers, or measurements of quantities of radioactive materials in or on their bodies;

(xxxiii) **"institutional control"** means control of a waste site (for example, disposal site) by a statutory authority or institution; this control may be active (monitoring, surveillance, remedial work) or passive (land use control) and may be a factor in the design of a nuclear facility (for example, near surface disposal facility);

(xxxiv) **"intake"** means the process of taking radioactive nuclides into the body by inhalation or ingestion or through the skin;

(xxxv) **"monitoring"** means the continuous or periodic measurement of radiological and other parameters or determination of the status of a system;

(xxxvi) **"normal operational exposure"** means an exposure which is expected to be received under normal operating conditions, including possible minor mishaps that can be kept under control;

(xxxvii) **"nuclear safety"** means the achievement of safe operating conditions, prevention of nuclear accidents or mitigation of nuclear accident consequences, resulting in the protection of workers, the public and the environment against the potential harmful effects of ionising radiation or radioactive material;

(xxxviii) **"occupational exposure"** means exposure of a worker in the course of his or her work in excess of an annual effective dose of 1 mSv in addition to natural background radiation, and "occupationally exposed" has the corresponding meaning;

(xxxix) **"operational safety assessment"** means a safety assessment undertaken during operations;

(xl) **"prior safety assessment"** means a safety assessment undertaken prior to commencement of operations;

(xli) **"radiation"** means ionising radiation;

(xlii) **"radiation protection"** means the protection of people from the effects of exposure to ionising radiation, and the means for achieving this;

(xliii) **"radiation weighting factor"** means a multiplier of absorbed dose used for radiation protection purposes to account for the relative effectiveness of different types of radiation in inducing health effects, the value of which is that specified in the IAEA International Basic Safety Standards for Protection against Ionising Radiation and for the Safety of Radiation Sources;

(xliv) **"radioactive waste"** means any material, whatever its physical form, remaining from an action requiring a nuclear installation licence, nuclear vessel licence or certificate of registration and for which no further use is foreseen, and that contains or is contaminated with radioactive material and does not comply with the requirements for clearance;

(xlv) **"radioactive waste acceptance criteria"** means the quantitative or qualitative criteria, specified by the operator and approved by the regulator, for radioactive waste to be accepted

by the operator of a repository for disposal, or by the operator of a storage facility for storage;

(xlvi) **"radon"** means the isotope ^{222}Rn of the element of atomic number 86;

(xivii) **"registration"** means the granting of a certificate of registration;

(xiviii) **"risk"** means (qualitatively expressed) the probability of a specified health effect occurring in a person or group as a result of exposure to radiation or (quantitatively expressed) a multiattribute quantity expressing hazard, danger or chance of harmful or injurious consequences associated with actual or potential exposures relating to quantities such as the probability that specific deleterious consequences may arise and the magnitude and character of such consequences;

(xlix) **"risk assessment"** means an assessment of the radiological risks associated with normal operation and potential accidents involving a source or action;

(l) **"safety assessment"** means an analysis to evaluate the performance of an overall system and its impact, where the performance measure is radiological impact or some other global measure of impact on safety;

(li) **"safety culture"** means the assembly of characteristics and attitudes in organisations and individuals which establishes that, as an overriding priority, protection and safety issues receive the attention warranted by their significance;

(lii) **"source"** means anything that may cause radiation exposure, such as by emitting ionising radiation or releasing radioactive substances or materials; a complex or multiple installation situated at one location or site may, as appropriate, be considered as a single source for the purposes of application of these regulations;

(liii) **"storage"** means the holding of spent (used) nuclear fuel or radioactive waste in a facility that provides for its containment, with the intention of retrieval;

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

(lv) **"tissue weighting factor"** means a multiplier of the equivalent dose to an organ or tissue used for radiation protection purposes to account for the different sensitivities of different organs and

tissues to the induction of stochastic effects of radiation, the value of which is that specified in the IAEA International Basic Safety Standards for Protection against Ionising Radiation and for the Safety of Radiation Sources;

(lvi) **"workplace monitoring"** means monitoring using measurements made in the working environment.

SECTION 2
EXCLUSION, EXEMPTION, REGISTRATION, LICENSING AND CLEARANCE

2.1 Exclusion

2.1.1 Exclusion of actions

In terms of the provisions of section 2 (2) (b) of the Act, the Act does not apply where,

2.1.1.1 the level of radioactivity concentration of each radioactive nuclide in materials is below -

(a) 0.2 Bq per gram for artificial radioactive nuclides;

(b) 0.5 Bq per gram for naturally occurring radioactive nuclides of uranium and thorium and their progeny except for radon;

(c) 10 Bq per gram for potassium -40 in materials that are used in building construction or disposed of,

(d) 50 Bq per gram for potassium -40 in all other materials; or

2.1.1.2 the level of total radioactivity content is below 1000 Bq.

2.1.2 Where the provisions of the Act apply to an action but the Regulator is of the opinion that such action is not amenable to regulatory control, the Board must advise the Minister on -

(a) the publication of a notice determining the action as not amenable to regulatory control; and

(b) appropriate steps which can be taken by the relevant level of Government or any person or body.

2.2 Exemption

2.2.1 Principles

The general principles for the issue of a certificate of exemption as contemplated in section 22 (3) (b)(ii) of the Act are as follows:

2.2.1.1 the radiation risk to individuals caused by the action concerned must be sufficiently low not to be of regulatory concern;

2.2.12 the collective radiological impact of the action concerned must be sufficiently low not to warrant regulatory control in the prevailing circumstances; and

2.2.1.3 the action concerned must be inherently safe, with no appreciable likelihood of scenarios that could lead to a failure to meet the criteria in 2.2.1.1 and 2.2.1.2.

2.2.2 Exemption without further consideration

Actions involving radioactive material will qualify for exemption by the Regulator without further consideration where the following criteria are fulfilled in all feasible situations:

2.2.2.1 the effective dose expected to be incurred by any member of the public due to the exempted action is 10 μSv per annum or less; and the collective effective dose committed by performing the action for one year is no more than 1 person-Sv; or

2.2.2.2 an assessment for the optimisation of protection shows that exemption is the optimum option; or

2.2.2.3 either the radioactivity concentration or the total radioactivity content of each radioactive nuclide in the radioactive material is below the levels specified in Annexure 1 and the quantity possessed or processed in a period of one year is less than one tonne; or

2.2.2.4 the radioactivity in the material is associated with naturally occurring radioactive nuclides that are not processed for their radioactive, fissile or fertile

properties, and the ejective dose expected to be incurred by any member of the public due to the exempted action is less than 0.25 mSv per annum.

2.2.3 Exemption with further consideration

Actions which involve radioactive material which do not qualify for exemption without further consideration as envisaged in section 2.2.2 can be given further consideration subject to a case-by-case evaluation by the Regulator based on the specific radioactivity, the total radioactivity of discrete radioactive nuclides or on exposure scenarios.

2.2.4 Exemption for the transport of radioactive material

The exemption criteria for the transport of radioactive material are those provided for in the IAEA Regulations for the Safe Transport of Radioactive Material, applicable in terms of section 4.8.

2.3 Registration

Actions other than those that qualify for a certificate of exemption, or which require a nuclear installation licence or a nuclear vessel licence, must be subject to the process of registration as contemplated in sections 22 and 23 of the Act.

2.4 Licensing

Any nuclear installation or nuclear vessel must be subject to the process of licensing as contemplated in sections 21, 23 and 24 of the Act.

2.5 Clearance

Radioactive materials which fall within a Nuclear Installation Licence, Nuclear Vessel Licence or Certificate of Registration may be cleared from further compliance with the requirements of the nuclear authorisation provided that such materials meet the principles for exemption as detailed in 2.2 or that approval has been given by the Regulator on a case-by-case consideration.

SECTION 3
PRINCIPAL RADIATION PROTECTION AND NUCLEAR SAFETY REQUIREMENTS

The following principal radiation protection and nuclear safety requirements apply to actions authorised by, or seeking authorisation in terms of, a nuclear installation licence, a nuclear vessel licence or a certificate of registration.

3.1 Dose and risk limits

3.1.1 The dose to an individual arising from normal operating conditions must not exceed the limits specified in Annexure 2.

3.1.2 The risk of fatality from any action as defined in the Act must not exceed the limits specified in Annexure 3.

3.2 Optimisation of radiation protection and nuclear safety

The magnitude of doses to individuals, the number of people exposed and the likelihood of incurring exposures must be kept as low as reasonably achievable, economic and social factors being taken into account (ALARA).

3.3 Prior safety assessment

Measures to control the risk of nuclear damage to individuals must be determined on the basis of a prior safety assessment which is suitable and sufficient to identify all significant radiation hazards and to evaluate the nature and expected magnitude of the associated risks, with due regard to the dose and risk limits in Annexures 2 and 3.

Where it can be justified that no credible accident scenarios exist, a risk assessment to demonstrate compliance with Annexure 3 is not required to be included as part of the prior safety assessment.

3.4 Good engineering practice

Installations, equipment or plant requiring a nuclear installation licence, a nuclear vessel licence or a certificate of registration and having an impact on radiation or nuclear safety must be designed, built and operated in accordance with good engineering practice.

3.5 Safety culture

A safety culture must be fostered and maintained to encourage a questioning and learning attitude to radiation protection and nuclear safety and to discourage complacency.

3.6 Retrospective application of regulations

3.6.1 Subject to 3.6.2, where compliance with the applicable requirements cannot be demonstrated for an action which is restricted in terms of section 20 of the Act and which existed before the coming into force of these regulations, the person engaged in that action must within two months of the coming into force of these regulations or within two months of the issuing of the nuclear authorisation, whichever is the later, submit to the Regulator an action plan to bring the action into compliance.

3.6.2 The requirements specified in 4.5.4 do not apply to bulk mineral residue deposits and/or facilities where deposition was discontinued prior to the date of these regulations or prior to the date of such deposits and/or facilities being authorised by the Regulator, whichever date is the earlier. These facilities must nevertheless still be regulated and the doses must be shown to be optimised.

3.7 Regulatory approval of radiation protection and nuclear safety measures

3.7.1 The holder of the nuclear authorisation is responsible for radiation protection and nuclear safety, including compliance with applicable requirements such as the preparation of the required safety assessments, programmes and procedures relating to the siting, design, construction, operation and decommissioning of facilities.

3.7.2 Situations where formal approval of radiation protection and nuclear safety measures by the Regulator is necessary should be limited to those where this is appropriate taking into account the nature and extent of the risk and the need for building stakeholder confidence.

3.8 Accident management and emergency planning, emergency preparedness and emergency response

Where the prior safety assessment or operational safety assessment has identified the reasonable possibility of a nuclear accident, accident prevention and mitigation measures based on the principle of defence in depth and which address accident management procedures including emergency planning, emergency preparedness and emergency response must be established, implemented and maintained. The principle of defence in depth must be applied as appropriate.

3.9 Defence in depth

A multilayer (defence in depth) system of provisions for radiation protection and nuclear safety commensurate with the magnitude and likelihood of the potential exposures involved shall be applied to sources such that a failure at one layer is compensated for or corrected by subsequent layers, for the purposes of -

(a) preventing nuclear accidents;
(b) mitigating the consequences of any such accidents; and
(c) restoring sources to safe conditions after any such accident.

3.10 Quality management

A quality management programme must be established, implemented and maintained in order to ensure compliance with the conditions of the nuclear authorisation.

3.11 Application of radiation protection and nuclear safety

The application of the radiation protection and nuclear safety requirements contained in these regulations to any action should be commensurate with the characteristics of the Action and with the magnitude and likelihood of the exposure, as determined in the safety assessments. Not all the requirements are relevant to every action.

SECTION 4
REQUIREMENTS APPLICABLE TO REGULATED ACTIONS

Subject to 4.12, the following requirements apply to actions authorised by a nuclear installation licence, nuclear vessel licence or certificate of registration.

4.1 Operational safety assessment

4.1.1 Operational safety assessments must be made and submitted to the Regulator at intervals specified in the nuclear authorisation and which must be commensurate with the nature of the operation and the radiation risks involved.

4.1.2 Operational safety assessments must be of sufficient scope and must be conducted and maintained in order to demonstrate continuing compliance with the dose, risk limits and other relevant conditions of the nuclear authorisation.

4.1.3 The operational safety assessment must establish the basis for all the operational safety-related programmes, limitations and design requirements.

4.2 Controls and limitations on operation

4.2.1 The holder of a nuclear authorisation is restricted to the actions within the specified site and within any limitations imposed in the authorisation.

4.2.2 Technical specifications must be established, implemented and maintained, where applicable, in terms of the safety assessment. Such operating technical specifications must provide a link between the safety assessment and the operation and must, as a minimum, include the following:

4.2.2.1 operating safety limitations as imposed by the design or by the safety criteria;

4.2.2.2 surveillance requirements to verify that equipment important to safety is operating satisfactorily or that parameters are within the safety limitations; and

4.2.2.3 limitations on the operation, in the event that equipment important to safety becomes inoperable or in the event that safety limitations are exceeded.

4.2.3 Radioactive waste acceptance criteria in respect of waste disposal or storage facilities must be established.

4.2.4 Operations must be conducted in accordance with formal procedures as required by the conditions of the nuclear authorisation.

4.3 Maintenance and inspection programme

4.3.1 An appropriate maintenance and inspection programme must be established.

4.3.2 The maintenance and inspection programme must be implemented to ensure that the reliability and integrity of installations, equipment and plant having an impact on radiation and nuclear safety are commensurate with the dose limits and risk limits in Annexures 2 and 3.

4.4 Staffing and qualification

4.4.1 An adequate number of competent, qualified and trained staff must be responsible for carrying out the functions associated with radiation protection and nuclear safety and for maintaining an appropriate safety culture.

4.4.2 The appropriate staff must be consulted on all decisions, that may impact on radiation protection and nuclear safety.

4.5 Radiation protection

4.5.1 ***Optimisation of protection***

Measures commensurate with the magnitude and likelihood of exposure must be implemented to ensure that exposures associated with the authorised action are kept as low as reasonably achievable, economic and social factors being taken into account (ALARA).

4.5.2 ***Dose constraints***

4.5.2.1 Where applicable in terms of the prior safety assessment, the optimisation of radiation protection must be subject to dose constraints specific to the authorised action, which must not exceed values that can cause the relevant dose limits to be exceeded and which will ensure as far as practicable that doses are restricted by application of the ALARA principle on a source-specific basis rather than by dose limits.

4.5.2.2 For members of the public, the dose constraint applicable to the average member of the critical group within the exposed population is 0,25 mSv per year specific to the authorised action unless otherwise agreed by the Regulator on a case-by-case basis, taking into account the dose limit specified in Annexure 2 for exposure of members of the public from all sources.

4.5.3 ***Annual authorised discharge quantity***

The Regulator may, for the purposes of controlling radioactive discharges from a single authorised action, determine a source-specific annual authorised discharge quantity in the nuclear authorisation, which must take into account the dose constraint contemplated in section 4.5.2.2.

4.5.4 ***Radiation dose limitation***

The normal operational exposure of individuals must be restricted to ensure that neither the effective dose nor the equivalent dose to relevant organs or tissues, caused by the possible combination of authorised actions, exceeds any relevant dose limit specified in Annexure 2. In order to comply with these regulations holders of nuclear authorisations must, as a precondition for engagement of occupationally exposed workers who are not their employees, obtain from the employers, including self employed individuals, the previous occupational exposure history of such workers.

4.5.5 ***Medical Surveillance and Health Register***

4.5.5.1 A comprehensive medical surveillance programme and health register must be established and maintained for all occupationally exposed workers in a form approved by the NNR. All entries in the health register must be made by an appointed medical practitioner or a person so authorised in writing. The holder must retain the register for a period of 40 years from the date of last entry.

4.5.5.2 An employee must have right of access to his medical records and health register at all times.

4.5.5.3 After consent has been obtained from the employee, the holder must provide the NNR with access to the employee's medical records and health register. The NNR may, with the consent of the employee, appoint an independent medical practitioner to assist in the conduct of a review of said records.

4.5.6 ***Dose register***
A dose register of every occupationally exposed worker must be established and maintained.

4.6 Radioactive waste management

4.6.1 A radioactive waste management programme must be established, implemented and maintained in order to -
- 4.6.1.1 ensure waste generation control;
- 4.6.1.2 ensure the identification, quantification, characterisation and classification of any radioactive waste generated;
- 4.6.1.3 provide for the necessary treatment and other waste management steps leading to safe clearance, or authorised discharge, disposal, reuse or recycling; and
- 4.6.1.4 provide for the safe storage of radioactive waste between any waste management processes.

4.6.2 The safety of long-term radioactive waste storage options must be assured for the envisaged period of storage.

4.6.3 Radioactive material, radioactively contaminated material or radioactive waste may be removed from further compliance with the conditions of the nuclear authorisation if such material is transported to the site of any other authorised action or complies with the requirements for -
- 4.6.3.1 an authorised discharge; or
- 4.6.3.2 authorised recycling or authorised reuse; or
- 4.6.3.3 clearance; or
- 4.6.3.4 the material is transported directly to an authorised waste storage or disposal facility and complies with the applicable waste acceptance criteria.

4.7 Environmental monitoring and surveillance

An appropriate environmental monitoring and surveillance programme must be established, implemented and maintained to verify that the storage, disposal or effluent discharge of radioactive waste complies with the conditions of the nuclear authorisation.

4.8 Transport of radioactive material

Transport of radioactive material or of any equipment or objects contaminated with radioactive material off the site or on roads which are accessible to the public must be carried out in terms of the provisions of the IAEA Regulations for The Safe Transport of Radioactive Material, in the revision specified in the nuclear authorisation.

4.9 Physical security

Physical security arrangements must be established, implemented and maintained in order to demonstrate that all necessary measures are taken to prevent, as far as is reasonable, unauthorised access to sites or diversion, theft or removal of radioactive material that does not meet the requirements for clearance in terms of section 2.5.

4.10 Records and reports

4.10.1 A system of record keeping for all records specified in the nuclear authorisation must be established, implemented and maintained.

4.10.2 Operational reports must be submitted to the Regulator at predetermined periods as specified in the nuclear authorisation and must contain such information as the Regulator may require on the basis of the safety assessments.

4.10.3 A reporting mechanism must be established, implemented and maintained for nuclear incidents and nuclear accidents or any other events that the Regulator may specify in the authorisation.

4.11 Monitoring of workers

4.11.1 In workplaces where workers are liable to receive doses exceeding three tenths of the applicable dose limits in section 1.1.1 of Annexure 2, as identified by the prior safety assessment and confirmed by subsequent operational safety assessments, individual monitoring of workers must be undertaken where appropriate, adequate and feasible.

4.11.2 For workers in the workplaces contemplated in section 4.11.1 for whom individual monitoring is inappropriate, inadequate or not feasible, the occupational exposure of such workers must be assessed from the results of workplace monitoring and information on the locations and durations of the workers.

4.11.3 In workplaces where occupationally exposed workers are unlikely to receive doses exceeding three tenths of the applicable dose limits in section 1.1.1 of Annexure 2, workplace monitoring must be implemented to keep under review the workplace exposure conditions, in order to maintain an awareness of any significant changes in conditions and to enable doses to be assigned to occupationally exposed workers on the basis of general workplace exposure conditions.

4.12 Application to radon exposure

For actions where the prior safety assessment contemplated in section 3.3, or the subsequent workplace monitoring contemplated in section 4.11.3, demonstrates that the occupational exposure to radon does not exceed an action level of 6 mSv/a, the requirements of section 4 applicable to occupational exposure to radon shall be limited to those of sections 4.4, 4.5.5, 4.5.6, 4.10 and 4.11.3.

SECTION 5
DECOMMISSIONING

The following requirements apply to actions authorised by a nuclear installation licence, nuclear vessel licence or certificate of registration which involves the decommissioning of any installation, plant or equipment having an impact on radiation protection and nuclear safety, or the release of radioactively contaminated land for other uses.

5.1 Decommissioning strategy and planning

5.1.1 A decommissioning strategy must be submitted as part of the prior safety assessment and must be updated throughout the operation of the authorised action as a basis for detailed decommissioning planning.

5.12 A decommissioning plan must be submitted to the Regulator as a basis for authorisation of specific actions or phases of decommissioning.

5.1.3 The decommissioning plan must specify any institutional controls that are required to maintain radiation safety after termination of the period of responsibility of the holder of the nuclear authorisation and must minimise as far as reasonable the need for such institutional controls.

5.2 Availability of resources

It must be demonstrated to the Regulator that sufficient resources will be available from the time of cessation of the operation to the termination of the period of responsibility.

5.3 Requirements for decommissioning operations

All decommissioning operations must be conducted in compliance with the applicable requirements of section 4.

5.4 Release of radioactively contaminated land

5.4.1 A site used in the conduct of an authorised action may be released for unrestricted use provided that it is demonstrated-

5.4.1.1 that radioactive contamination and radioactive materials which can reasonably be attributed to the authorised action have been removed from the site or, in the case of naturally occurring radioactive nuclides, have activity concentrations below the levels for exclusion specified in section 2.1.1.1 (b), (c) and (d); or

5.4.1.2 where the provisions in section 5.4.1.1 cannot reasonably be achieved, remedial measures have been implemented in accordance with section 4.5.1 to achieve optimisation of protection constrained in accordance with section 4.5.2 such that the annual ejective dose received by the average member of the critical group for all feasible future situations, arising from the residual radioactive contamination and radioactive materials which can reasonably be attributed to the regulated action, does not exceed the dose constraint that was applicable during the operations.

5.4.2 In the event that the release of a site in accordance with the conditions in section 5.4.1.2 can only be reasonably achieved by imposing restrictions on the use of the site, the Regulator may, subject to the conditions in section 5.4.1.2 being met, approve the release of that site for restricted use.

5.5 Obligations under other statutes

Where there are obligations on the holder of the nuclear authorisation under other statutes with respect to decommissioning, the requirements under 5.1 and 5.2 may be integrated into an overall decommissioning strategy and funding mechanism which may serve to satisfy all relevant

statutes in accordance with the co-operative governance agreements established in terms of section 6 of the Act.

SECTION 6
ACCIDENTS, INCIDENTS AND EMERGENCIES

The provisions of this section are applicable to emergency exposure situations requiring protective action to reduce or avert temporary exposures.

6.1 Criteria for the definition of a nuclear accident

Any occurrence or succession of occurrences having the same origin and resulting in an unintended/unauthorised exposure to radiation or release of radioactive material, which is capable of giving rise to an effective dose in excess of 1 mSv to the public off-site in a year, or in excess of 50 mSv to a worker on site received essentially at the time of the event, is regarded as a nuclear accident as defined in section 1 (xiii) of the Act.

6.2 Criteria for the definition of a nuclear incident

Any unintended event which is reasonably capable of giving rise to an effective dose equal to or in excess of 0,1 mSv to the public off site received essentially at the time of the event, or the unintended spread of radioactive contamination or exposure to radiation, which could reasonably give rise to an effective dose in excess of 20 mSv to a worker on site received essentially at the time of the event, or significant failure of safety provisions, is regarded as a nuclear incident as defined in section 1 (xvii) of the Act.

6.3 Information to be supplied

The holder of a nuclear authorisation must immediately inform the Regulator when a nuclear accident occurs or an incident has arisen or is expected to occur or arise, as the case may be, and shall provide such information as may be required, including -

6.3.1 the current situation and its evolution;

6.3.2 measures taken to terminate the nuclear accident and/

or incident to protect workers and members of the public; and

6.3.3. the exposures that have occurred and those expected to be incurred.

6.4 Emergency or remedial measures

Emergency or remedial measures must be considered in the vicinity of a nuclear accident where the potential exists that any member of the public may receive more than an annual effective dose of 1 mSv resulting from the accident.

SECTION 7
GENERAL

7.1 The safety standards referred to in section 1 (xiii)(a) of the Act are the criteria for a nuclear accident specified in 6.1.

7.2 The exclusion levels provided for in the safety standards referred to in section 2(2)(b) of the Act are the exclusion criteria specified in 2.1.

7.3 The exemption criteria specified in the safety standards referred to in section 22(3)(b)(ii) of the Act are the exemption criteria specified in 2.2.

7.4 The safety standards with respect to the risk of nuclear damage referred to in section 1(xxii)(a)(iii) of the Act are the risk levels corresponding to the release criteria contained in 2.5 and 5.4 for materials and land respectively.

7.5 The safety standard with respect to the risk of nuclear damage referred to in section 37(2)(b) of the Act is the potential dose criterion specified in 6.4.

7.6 The safety standards with respect to the risk of nuclear damage referred to in section 39(2) of the Act are the risk levels corresponding to the release criteria contained in 2.5 and 5.4 for materials and land respectively.

7.7 The safety standards referred to in section 41(4)(e) of the Act are the release criteria contained in 2.5 and 5.4 for materials and land respectively.

7.8 The exemption criteria provided for in the safety standards referred to in section 41(4)(f) of the Act are the exemption criteria specified in 2.2.

7.9 The safety standards referred to in section 41(4)(g) of the Act are the release criteria contained in 2.5 and 5.4 for materials and land respectively.

ANNEXURE 1

Exempt radioactivity concentrations and exempt total radioactivity content

Radioactive Nuclide	Radioactivity Concentration (Bq/g)	Total Radioactivity Content (Bq)
H-3	1E+06	1E+09
Be-7	1E+03	1E+07
C-14	1E+04	1E+07
0-15	1E+02	1E+09
F-18	1E+0l	1E+06
Na-22	1E+0l	1E+06
Na-24	1E+0l	1E+05
Si-31	1E+03	1E+06
P-32	1E+03	1E+05
P-33	1E+05	1E+08
S-35	1E+05	1E+08
Cl-36	1E+04	1E+06
Cl-38	1E+0l	1E+05
Ar-37	1E+06	1E+08
Ar-41	1E+02	1E+09
K-40	1E+02	1E+06
K-42	1E+02	1E+06
K-43	1E+0l	1E+06
Ca-45	1E+04	1E+07
Ca-47	1E+0l	1E+06
Sc-46	1E+0l	1E+06
Sc-47	1E+02	1E+06
Sc-48	1E+0l	1E+05

Radioactive Nuclide	Radioactivity Concentration (Bq/g)	Total Radioactivity Content (Bq)
V-48	1E+0l	1E+05
Cr-51	1E+03	1E+07
Mn-51	1E+0l	1E+05
Mn-52	1E+0l	1E+05
Mn-52m	1E+0l	1E+05
Mn-53	1E+04	1E+09
Mn-54	1E+0l	1E+06
Mn-56	1E+0l	1E+05
Fe-52	1E+0l	1E+06
Fe-55	1E+04	1E+06
Fe-59	1E+0l	1E+06
Co-55	1E+0l	1E+06
Co-56	1E+0l	1E+05
Co-57	1E+02	1E+06
Co-58	1E+0l	1E+06
Co-58m	1E+04	1E+07
Co-60	1E+0l	1E+05
Co-60m	1E+03	1E+06
Co-61	1E+02	1E+06
Co-62m	1E+0l	1E+05
Ni-59	1E+04	1E+08
Ni-63	1E+05	1E+08
Ni-65	1E+0l	1E+06
Cu-64	1E+02	lE+06
Zn-65	1E+0l	1E+06
Zn-69	1E+04	1E+06
Zn-69m	1E+02	1E+06
Ga-72	1E+0l	1E+05
Ge-71	1E+04	1E+08
As-73	1E+03	1E+07
As-74	1E+0l	1E+06
As-76	1E+02	1E+05
As-77	1E+03	1E+06
Se-75	1E+02	1E+06
Br-82	1E+0l	1E+06

Radioactive Nuclide	Radioactivity Concentration (Bq/g)	Total Radioactivity Content (Bq)
Kr-74	lE+02	lE+09
Kr-76	1E+02	1E+09
Kr-77	1E+02	1E+09
Kr-79	1E+03	1E+05
Kr-81	1E+04	1E+07
Kr-83m	lE+05	1E+12
Kr-85	1E+05	1E+04
Kr-85m	1E+03	lE+l0
Kr-87	1E+02	1E+09
Kr-88	lE+02	1E+09
Rb-86	1E+02	1E+05
Sr-85	1E+02	1E+06
Sr-85m	1E+02	1E+07
Sr-87m	1E+02	1E+06
Sr-89	1E+03	1E+06
Sr-90*	1E+02	1E+04
Sr-91	1E+0l	1E+05
Sr-92	1E+0l	1E+06
Y-90	1E+03	1E+05
Y-91	1E+03	1E+06
Y-91m	1E+02	1E+06
Y-92	1E+02	1E+05
Y-93	1E+02	1E+05
Zr-93*	1E+03	1E+07
Zr-95	1E+0l	1E+06
Zr-97*	1E+0l	1E+05
Nb-93m	1E+04	1E+07
Nb-94	1E+0l	1E+06
Nb-95	1E+0l	1E+06
Nb-97	1E+0l	1E+06
Nb-98	1E+0l	1E+05
Mo-90	1E+01	1E+06
Mo-93	1E+03	1E+08
Mo-99	1E+02	1E+06
Mo-101	1E+0l	1E+05

Radioactive Nuclide	Radioactivity Concentration (Bq/g)	Total Radioactivity Content (Bq)
Tc-96	1E+01	1E+06
Tc-96m	1E+03	1E+07
Tc-97	1E+03	1E+08
Tc-97m	1E+03	1E+07
Tc-99	1E+02	1E+07
Tc-99m	1E+02	1E+07
Ru-97	1E+02	1E+07
Ru-103	1E+02	1E+06
Ru-105	1E+01	1E+06
Ru-106*	1E+02	1E+05
Rh-103m	1E+04	1E+08
Rh-105	1E+02	1E+07
Pd-103	1E+03	1E+08
Pd-109	1E+03	1E+06
Ag-105	1E+02	1E+06
Ag-1 l Om	1E+01	1E+06
Ag-111	1E+03	1E+06
Cd-109	1E+04	1E+06
Cd-115	1E+02	1E+06
Cd-115m	1E+03	1E+06
In-111	1E+02	1E+06
In-113m	1E+02	1E+06
In-114m	1E+02	1E+06
In-115m	1E+02	1E+06
Sn-113	1E+03	1E+07
Sn-125	1E+02	1E+05
Sb-122	1E+02	1E+04
Sb-124	1E+01	1E+06
Sb-125	1E+02	1E+06
Te-123m	1E+02	1E+07
Te-125m	1E+03	1E+07
Te-127	1E+03	1E+06
Te-127m	1E+03	1E+07
Te-129	1E+02	1E+06
Te-129m	1E+03	1E+06

Radioactive Nuclide	Radioactivity Concentration (Bq/g)	Total Radioactivity Content (Bq)
Te-131	1E+02	1E+05
Te-131m	1E+0l	1E+06
Te-132	1E+02	1E+07
Te-133	1E+0l	1E+05
Te-133m	1E+0l	1E+05
Te-134	1E+0l	1E+06
I-123	1E+02	1E+07
I-125	1E+03	1E+06
I-126	1E+02	1E+06
I-129	*1*E+02	1E+05
I-130	1E+0l	1E+06
I-131	1E+02	1E+06
I-132	1E+0l	1E+05
1-133	1E+0l	1E+06
I-134	1E+0l	1E+05
1-135	1E+0l	1E+06
Xe131m	1E+04	1E+04
Xe-133	1E+03	1E+04
Xe-135	1E+03	1E+I0
Cs-129	1E+02	1E+05
Cs-131	1E+03	1E+06
Cs-132	1E+0l	1E+05
Cs-134m	1E+03	1E+05
Cs-134	1E+01	1E+04
Cs-135	1E+04	1E+07
Cs-136	1E+0l	1E+05
Cs-137*	1E+0l	1E+04
Cs-138	1E+0l	1E+04
Ba-131	1E+02	1E+06
Ba-140*	1E+0l	1E+05
La-140	1E+0l	1E+05
Ce-139	1E+02	1E+06
Ce-141	1E+02	1E+07
Ce-143	1E+02	1E+06
Ce-144*	1E+02	1E+05

Radioactive Nuclide	Radioactivity Concentration (Bq/g)	Total Radioactivity Content (Bq)
Pr-142	1E+02	1E+05
Pr-143	1E+04	1E+06
Nd-147	1E+02	1E+06
Nd-149	1E+02	1E+06
Pm-147	1E+04	1E+07
Pm-149	1E+03	1E+06
Sm-151	1E+04	1E+08
Sm-153	1E+02	1E+06
Eu-152	1E+0l	1E+06
Eu-152m	1E+02	1E+06
Eu-154	1E+0l	1E+06
Eu-155	1E+02	1E+07
Gd-153	1E+02	1E+07
Gd-159	1E+03	1E+06
Tb-160	1E+0l	1E+06
Dy-165	1E+03	1E+06
Dy-166	1E+03	1E+06
Ho-166	1E+03	1E+05
Er-169	1E+04	1E+07
Er-171	1E+02	1E+06
Tm-170	1E+03	1E+06
Tm-171	1E+04	1E+08
Yb-175	1E+03	1E+07
Lu-177	1E+03	1E+07
Hf-181	1E+0l	1E+06
Ta-182	1E+0l	1E+04
W-181	1E+03	1E+07
W-185	1E+04	1E+07
W-187	1E+02	1E+06
Re-186	1E+03	1E+06
Re-188	1E+02	1E+05
Os-185	1E+0l	1E+06
Os-191	1E+02	1E+07
Os-191m	1E+03	1E+07
Os-193	1E+02	1E+06

Radioactive Nuclide	Radioactivity Concentration (Bq/g)	Total Radioactivity Content (Bq)
Ir-190	1E+01	1E+06
Ir-192	1E+0l	1E+04
Ir-194	1E+02	1E+05
Pt-191	1E+02	1E+06
Pt-193m	1E+03	1E+07
Pt-197	1E+03	1E+06
Pt-197m	1E+02	1E+06
Au-198	1E+02	1E+06
Au-199	1E+02	1E+06
Hg-197	1E+02	1E+07
Hg197m	1E+02	1E+06
Hg-203	1E+02	1E+05
Tl-200	1E+01	1E+06
Tl-201	1E+02	1E+06
Tl-202	1E+02	1E+06
Tl-204	1E+04	1E+04
Pb-203	1E+02	1E+06
Pb-210*	1E+01	1E+04
Pb-212*	1E+01	1E+05
Bi-206	1E+01	1E+05
Bi-207	1E+01	1E+06
Bi-210	1E+03	1E+06
Bi-212*	1E+01	1E+05
Po-203	1E+01	1E+06
Po-205	1E+01	1E+06
Po-207	1E+01	1E+06
Po-210	1E+01	1E+04
At-211	1E+03	1E+07
Rn-220*	1E+04	1E+07
Rn-222*	1E+01	1E+08
Ra-223*	1E+02	1E+05
Ra-224*	1E+0l	1E+05
Ra-225	1E+02	1E+05
Ra-226*	1E+0l	1E+04
Ra-227	1E+02	1E+06

Radioactive Nuclide	Radioactivity Concentration (Bq/g)	Total Radioactivity Content (Bq)
Ra-228*	1E+0l	1E+05
Ac-228	1E+0l	1E+06
Th-226*	1E+03	1E+07
Th-227	1E+0l	1E+04
Th-228*	1E+00	1E+04
Th-229*	1E+00	1E+03
Th-230	1E+00	1E+04
Th-231	1E+03	1E+07
Th-nat* (incl.Th-232)	1E+00	1E+03
Th-234*	1E+03	1E+05
Pa-230	1E+0l	1E+06
Pa-231	1E+00	1E+03
Pa-233	1E+02	1E+07
U-230*	1E+0l	1E+05
U-231	1E+02	1E+07
U-232*	1E+00	1E+03
U-233	1E+01	1E+04
U-234	1E+0l	1E+04
U-235*	1E+0l	1E+04
U-236	1E+0l	1E+04
U-237	1E+02	1E+06
U-238*	1E+0l	1E+04
U-nat*	1E+00	1E+06
U-239	1E+02	1E+07
U-240	1E+03	1E+06
U-240*	1E+0l	1E+03
Np-237*	1E+00	1E+07
Np-239	1E+02	1E+07
Np-240	1E+0l	1E+06
Pu-234	1E+02	1E+07
Pu-235	1E+02	1E+07
Pu-236	1E+01	1E+04
Pu-237	1E+03	1E+07
Pu-238	1E+00	1E+04
Pu-239	1E+00	1E+04

Radioactive Nuclide	Radioactivity Concentration (Bq/g)	Total Radioactivity Content (Bq)
Pu-240	1E+00	1E+03
Pu-241	1E+02	1E+05
Pu-242	1E+00	1E+04
Pu-243	1E+03	1E+07
Pu-244	1E+00	1E+04
Am-241	1E+00	1E+04
Am-242	1E+03	1E+06
Am-242m*	1E+00	1E+04
Am-243*	1E+00	1E+03
Cm-242	1E+02	1E+05
Cm-243	1E+00	1E+04
Cm-244	1E+01	1E+04
Cm-245	1E+00	1E+03
Cm-246	1E+00	1E+03
Cm-247	1E+00	1E+04
Cm-248	1E+00	1E+03
Bk-249	1E+03	1E+06
Cf-246	1E+03	1E+06
Cf-248	1E+01	1E+04
Cf-249	1E+00	1E+03
Cf-250	1E+01	1E+04
Cf-251	1E+00	1E+03
Cf-252	1E+01	1E+04
Cf-253	1E+02	1E+05
Cf-254	1E+00	1E+03
Es-253	1E+02	1E+05
Es-254	1E+01	1E+04
Es-254m	1E+02	1E+06
Fm-254	1E+04	1E+07
Fm-255	1E+03	1E+06

ANNEXURE 2

Dose Limits

1. Occupational exposure

1.1 General dose limits

The occupational exposure of any worker shall be so controlled that the following limits are not exceeded:

1.1.1 an (average) effective dose of 20 mSv per year averaged over five consecutive years; [1]

1.1.2 a (maximum) effective dose of 50 mSv in any single year;

1.1.3 an equivalent dose to the lens of the eye of 150 mSv in a year; and

1.1.4 an equivalent dose to the extremities (hands and feet) or the skin of 500 mSv in a year.

1.1.5 in special circumstances, provided that radiation protection in the action has been optimised as required by 4.5.1 of the regulations but occupational exposures still remain above the dose limit in 1.1.2 above, the Regulator may approve a temporary change in the dose limit subject to the agreement of the affected employees, through their representatives where appropriate, and provided that all reasonable efforts are being made to improve the working conditions to the point where compliance with the dose limits can be achieved. This temporary change shall not exceed 5 years and shall not be renewed.

1.2 Apprentices and students

For apprentices of 16 to 18 years of age who are training for employment involving exposure to radiation and for students of age 16 to 18 who are

1 *The start of the averaging period shall be coincident with the first day of the relevant annual period starting from the date of entry into force of the Regulations with no retroactive averaging.*

required to use sources in the course of their studies, the occupational exposure shall be so controlled that the following limits are not exceeded:

1.2.1 an effective dose of 6 mSv in a year;
1.2.2 an equivalent dose to the lens of the eye of 50 mSv in a year; and
1.2.3 an equivalent dose to the extremities or skin of 150 mSv in a year.

1.3 Women

The annual effective dose limit for women of reproductive capacity is the same as that which is generally specified for occupational exposure under 1.1 above. Following declaration of pregnancy, a limit on the equivalent dose to the abdomen of 2 mSv for the remainder of the pregnancy applies.

1.4 Emergencies

In the event of an emergency or when responding to an accident, a worker who undertakes emergency measures may be exposed to a dose in excess of the annual dose limit for persons occupationally exposed as specified in 1.1 -

1.4.1 for the purpose of saving life or preventing serious injury;
1.4.2 if undertaking actions intended to avert a large collective dose; or
1.4.3 if undertaking actions to prevent the development of catastrophic conditions.

Under any of the circumstances referred to in 1.4.2 or 1.4.3 above, all reasonable efforts must be made to keep doses to the worker below twice the maximum annual dose limit. In respect of life-saving interventions as contemplated in 1.4.1 above, every effort shall be made to keep doses below ten times the maximum annual dose limit. In addition, workers undertaking interventions which may result in their doses approaching or exceeding ten times the annual dose limit may only do so when the benefits to others clearly outweigh their own risk.

2. Exposure of visitors and non-occupationally exposed workers at sites

The annual effective dose limit for visitors to the sites and those not deemed to be occupationally exposed is 1 mSv. The annual dose equivalent limit for individual organs and tissues of such persons is 10 mSv.

3. Public exposure

3.1 The annual effective dose limit for members of the public from all authorised actions is 1 mSv.

3.2 No action may be authorised which would give rise to any member of the public receiving a radiation dose from all authorised actions exceeding 1 mSv in a year.

ANNEXURE 3

Probabilistic risk limits

PUBLIC	
Average annual population risk	10^{-8} fatalities per year per site (one fatality per one hundred million per year per site)
Maximum annual individual risk	5×10^{-6} fatalities per year (one fatality per two hundred thousand per year
WORKERS	
Average annual risk to workers	10^{-5} fatalities per year per site (one fatality per one hundred thousand per year per site)
Maximum annual individual risk to workers	5×10^{-5} fatalities per year per site (one fatality per twenty thousand per year per site)

Regulation

Annual Public Report on the Health and Safety Related to Workers

Regulation on Annual Public Report on the Health and Safety Related to Workers

Published under
No. 716, 28 July 2006

The Minister of Minerals and Energy has, in terms of Section 7(1)(i) of the National Nuclear Regulator Act of 1999, made the regulations set out in the schedule.

SCHEDULE

Definitions

1. In these regulations any word or expression to which a meaning has been assigned in the Act, shall have the meaning so assigned.

Responsibilities of the regulator

2. The regulator must submit within five months of the end of a financial year, to the executive authority, a public report on the health and safety related to workers, the public and the environment associated with all sites on which a nuclear installation is situated or on which any action which is capable of causing nuclear damage is carried out.

Contents of the annual report

3. The contents of the annual report shall include but not be limited to the following aspects where applicable-

(a) List of all authorised actions in the reporting period
(b) List of certificates of exemption issued in the reporting period
(c) Background description of authorised actions and related radioactive material

(d) Occupational exposure to radiation (normal operation)
(e) Projected public exposure to radiation (normal operation)
(f) Safety of plant and operations (nuclear safety)
(g) Competency and sufficiency of the operator workforce to work safely
(h) Transport safety
(i) Radioactive waste safety
(j) Environmental protection (control of radioactive discharges to the environment and environmental surveillance programme)
(k) Nuclear emergency planning and preparedness
(l) Physical security
(m) Safety of sealed radioactive sources under the jurisdiction of the National Nuclear Regulator
(n) Nuclear incidents/accidents reported
(o) Regulatory compliance inspections
(p) Regulatory warnings or directives to stop work
(q) Regulatory independent verification of radiological environmental analysis
(r) Regulatory capacity and number of appointed inspectors
(s) Appeals to the chief executive officer or the board

Offence

4. Failure to comply with these regulations shall constitute an offence as contemplated in section 52(2) of the Act.

Regulation

Keeping of a Record of all Persons in a Nuclear Accident Defined Area

Regulation on Keeping of a Record of all Persons in a Nuclear Accident Defined Area

Published under
GN 778, 4 August 2006

The Minister of Minerals and Energy has, in terms of Section 37(3)(a) of the National Nuclear Regulator Act of 1999, made the regulations set out in the schedule.

SCHEDULE

Definitions

1. In these regulations any word or expression to which a meaning has been assigned in the Act, shall have the meaning so assigned.

Responsibilities of the regulator

2. When a nuclear accident has occurred and the regulator has defined the period and the area of the nuclear accident as contemplated in section 37(2)(b) of the Act the regulator must keep a record of each person who, according to its information, were within the area so defined at any time during the period so defined in the manner as specified in section 3.

Record of persons

3. A documented record of persons shall include but not be limited to the following, where applicable —
   (a) Full name
   (b) Gender
   (c) Age on date of accident
   (d) Date of birth
   (e) Identity number

(f) Passport number
(g) Physical address
(h) Postal address
(i) Telephone number
(j) Cell phone number
(k) Location in the defined area
(l) Time period in the defined area
(m) Reason for being in the defined area
(n) Address and Contact details of a relative

Offence

4. Failure to comply with these regulations shall constitute an offence as contemplated in section 52(2) of the Act.

Regulation

Format for the Application for a Nuclear Installation Licence or a Certificate of Registration or a Certificate of Exemption

Regulation on Format for the Application for a Nuclear Installation Licence or a Certificate of Registration or a Certificate of Exemption

Published under
GN 1219, 21 December 2007

The Minister of Minerals and Energy has, in terms of Section 47 , read with Sections 21 and 22 of the National Nuclear Regulator Act of 1999, made the regulations set out int he schedule.

SCHEDULE

Repeal of Regulations

1. These Regulations shall repeal the regulations published under government Notice No. R 479 of 12 May 2000.

Definitions

2. In these regulations any word or expression to which a meaning has been assigned in the Act, shall have the meaning so assigned.

Address for application

3. The application must be made in block letters or typescript and forwarded to:

   The Chief Executive Officer
   The National Nuclear Regulator
   PO Box 7106
   Centurion 0046

Contents of application

4. The application must contain—
   (1) an indication of whether the application is made for a nuclear installation licence, certificate of registration or certificate of exemption;
   (2) the full name of the applicant;
   (3) if the applicant is a juristic person, a certified copy of the certificate of incorporation or founding document or any other establishing document and physical address of its head office or its domicilium citandi et executandi;
   (4) if the applicant is a natural person, his or her identification number and date of birth;
   (5) the physical address of the proposed nuclear installation or where the proposed action(s) will be carried out;
   (6) the postal address of the applicant;
   (7) a description of the nuclear installation or nature of the proposed action(s) and any other relevant information which may be required by the chief executive officer; and
   (8) a signature by the applicant or, in the case of a juristic person, the signature of a duly authorised person and a certified copy of that authorisation.

Regulation

Establishment of a Public Safety Information Forum by the Holder of a Nuclear Authorisation

Regulation on Establishment of a Public Safety Information Forum by the Holder of a Nuclear Authorisation

Published under
No. R. 968, 12 September 2008

The Minister of Minerals and Energy has, in terms of section 47, read with Section 26(4) of the National Nuclear Regulator Act of 1999, made the regulations set out in the schedule.

SCHEDULE

Definitions

1. In these regulations any word or expression to which a meaning has been assigned in the Act, shall have the meaning so assigned.

Terms not defined in the Act

2. In these regulations-
   (i) "nuclear safety" means the achievement of safe operating conditions, prevention of nuclear accidents or mitigation of nuclear accident consequences, resulting in the protection of workers, the public and the environment against the potential harmful effects of ionising radiation or radioactive material;
   (ii) "radiation safety" means the protection of persons and the environment against the potential harmful effects of ionising radiation or radioactive material, and
   (iii) "relevant municipal area" means that part of a municipal area which falls within the formal emergency planning zone of a nuclear installation.

Responsibilities of holders of a nuclear installation licence

3. A holder of a nuclear installation licence must-
   (a) establish a public safety information forum in order to inform the persons living in the relevant municipal area in respect of which an emergency plan has been established in terms of section 38(1) of the Act on nuclear safety and radiation safety matters related to the relevant nuclear installation;
   (b) provide a venue and facilities for meetings of the forum;
   (c) by public notice call upon interested and affected parties living in the relevant municipal area to register with the Public Safety Information Forum;
   (d) provide a secretariat to facilitate the functioning of the forum and to maintain a contact data base of persons living in the relevant municipal area that have registered with the forum as interested and affected parties;
   (e) provide information to the forum, with due regard to section 51 of the Act, on nuclear/radiation safety matters, including but not limited to nuclear incidents/accidents, and
   (f) cover the costs related to the establishment and management of the forum.

Functioning of the Public Safety Information Forum

4. (1) The Forum shall have a Chairperson and a Deputy Chairperson who shall hold office for a period of two years.
   (2) The Chairperson and Deputy Chairperson shall be appointed by the Board of Directors of the National Nuclear Regulator from persons living in the relevant. municipal area three months prior to the end of the expiring term.
   (3) In order to select a Chairperson and Deputy Chairperson the Board of the National Nuclear Regulator shall invite nominations in at least two local newspapers and from persons registered with the forum as contemplated in 3(c).
   (4) Persons appointed as contemplated in subsection (2) must accept the appointment in writing and perform their duties without payment.

(5) The public safety information forum must-

(a) conduct all meetings open to any member of the public at a minimum frequency of one meeting per quarter;

(b) communicate the date, time and venue of meetings of the forum within the relevant municipal area, not less than 14 days prior to each meeting, by advertising in at least two newspapers circulating in the relevant municipal area;

(c) keep minutes of all meetings as a record, which must be distributed to all attendees and any other interested parties, and

(d) invite the National Nuclear Regulator, the relevant municipality (Disaster Management Centre), the relevant Province (Disaster Management Centre) and relevant national government departments as appropriate, to all meetings to facilitate the sharing of information.

Constitution

5. The Public Safety Information Forum may establish a constitution not inconsistent with these regulations.

Regulation

Licencing of Sites for New Nuclear Power Plants

Regulation on Licencing of Sites for New Nuclear Power Plants

Published under
No. R. 927, 11 November 2011

The Minister of Energy has, in terms of Section 36, read with Section 47 of the National Nuclear Regulator Act of 1999, made the regulations set out in the schedule.

SCHEDULE

CONTENTS

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 authorisations 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 authorisations 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 authorisations 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 authorisation 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.

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