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## 6 PLANNING AND LEGISLATIVE CONTEXT

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### 6.1 Introduction

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This section of the EIR details applicable legal provisions. It provides a review of relevant international legal instruments as well as national legislation, regulations and policy documents, which are applicable to (or have implications for) the proposed construction and operation of a nuclear power station in South Africa.

One of the main foci of this section is on the provisions of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA). NEMA is the primary South African legislation governing the requirements for environmental assessment. In the context of Eskom's initiative to build the required infrastructure, and to provide electricity by generating electricity using nuclear energy, the provisions of NEMA and associated EIA Regulations (regarding Scoping and EIA) are of fundamental relevance. In addition to an analysis of NEMA, this chapter considers the provisions of other relevant legislation, including legislation governing:

- nuclear installations and their licensing;
- the mining and energy sectors;
- national key points; and
- hazardous materials.

This chapter also describes a myriad of other legislation relevant to constitutional and administrative legal precepts in South African law, as well as environmental legislation of specific relevance to water resources; biodiversity; the coastal zone; and land use planning.

The main purpose of the legal chapter therefore, is to provide a comprehensive but succinct review of all planning, development, environmental, electricity-generation and distribution legislation, as well as to provide an overview of that legislation, which is of particular relevance with regard to the regulation of the nuclear energy industry.

The proposed development of a nuclear installation for use in electricity generation entails a number of applications for discrete authorisations, which authorisations will need to be obtained from various departments in the three spheres of government, and including the DEA, the NNR (or the "Regulator" in this section), the NERSA, the Department of Energy (DoE), and the Department of Water Affairs (DWA). Authorisation in regard to environmental impacts (and specifically, listed activities under NEMA) will be sought from the DEA, while permits for water use licenses will be sought from DWA, and (insofar as borrow pits need to be excavated and utilised in the context of construction activities relevant to the proposed nuclear power station) permits in that regard will be obtained from the Department of Mineral Resources. The licensing of nuclear installations (in the context of their siting, construction, operation, decontamination and decommissioning) must be obtained from the Chief Executive Officer of the NNR.

This chapter is structured as follows:

- The first section explores the applicable constitutional and administrative legal dispensation;
- The second section sets out relevant international legal instruments, international and domestic policies and guidelines, and relevant co-operative agreements;
- The third section analyses various South African environmental laws (with a principal focus on NEMA and its EIA Regulations) but with reference to other legislation of relevance; and
- The final section discusses how the NEMA principles have been taken into account in the specialist studies.

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## 6.2 The constitutional law dimension and supporting framework legislation regulating just administrative action and access to information

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### 6.2.1 The Constitution (1996)

The Constitution of the Republic of South Africa<sup>1</sup> is the supreme law of South Africa and is the statute against which all other law (both statutory instruments and the common law) must be measured. To the extent that other laws conflict with the Constitution, they are as a general rule invalid, subject to the provisions of the limitations clause.<sup>2</sup>

The Constitution provides for a single sovereign state in which three distinct spheres of government (national, provincial and local government<sup>3</sup>) operate. The powers and the functions of each sphere are stipulated in the Constitution. The principles of co-operative government and intergovernmental relations are articulated in section 41 of the Constitution. It provides furthermore that an act of parliament must be enacted that establishes or provides for structures and institutions to promote and facilitate intergovernmental relations, and in addition, provides for appropriate mechanisms and procedures to facilitate settlement of intergovernmental disputes. The national legislature has duly enacted such a statute – it is the Intergovernmental Relations Framework Act<sup>4</sup>, which commenced on 15 August 2005.

The Constitution regulates the powers and obligations of national, provincial and local government. These fall, broadly speaking, within two categories, namely those that are dealt with in the Bill of Rights and those which deal with legislative competence. These are discussed in the sections that follow.

The Bill of Rights<sup>5</sup> forms the cornerstone upon which the constitutional dispensation in South Africa is built. It applies to all law, and binds the legislature, the executive, the judiciary and all organs of state. A provision of the Bill of Rights binds a natural or a juristic person if, and to the extent that, it is applicable, taking into account the nature of the right and the nature of any duty imposed by the right.

Of particular importance in relation to Eskom's initiatives with regard to its planned construction of nuclear-powered electricity generation infrastructure, are those sections contained in the Bill of Rights dealing with the environmental rights, the right of access to information and the right to just administrative action.

#### (a) The environmental clause

The environmental clause in the Bill of Rights<sup>6</sup> provides as follows:

Everyone has the right –

- (a) to an environment which is not harmful to their health or well-being;
- (b) to have the environment protected for the benefit of present and future generations through reasonable legislative and other measures that:

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<sup>1</sup> Act No. 108 of 1996, hereinafter referred to as the "Constitution"

<sup>2</sup> Section 2 of the Constitution titled "Supremacy of Constitution" and section 36 is titled "Limitation of rights"

<sup>3</sup> Section 40(1) describes government in the Republic as being constituted as "national, provincial and local spheres of government which are distinctive, interdependent and interrelated." All spheres of government are obliged to observe and adhere to the principles in Chapter 3 of the Constitution (titled "Co-operative government") and must conduct their activities within the parameters provided in Chapter 3 of the Constitution.

<sup>4</sup> Act No. 13 of 2005

<sup>5</sup> Chapter 2 (sections 7 to 39) of the Constitution

<sup>6</sup> Chapter 2 (section 24)

- (i) prevent pollution and ecological degradation;
- (ii) promote conservation; and
- (iii) secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.

What is clear from this clause is that organs of state are obliged to comply with all existing environmental laws. They must also ensure that any of their activities which are not controlled by law do not negatively impact on human health and well-being.

#### **(b) The right of access to information**

Section 32 of the Constitution confers on every person the right of access to:

- (a) any information held by the State; and
- (b) any information that is held by another person and that is required for the exercise or protection of any rights.

This right underpins the principles of accountability and transparency of government action that permeate the Constitution. The right to information has further been given effect to by the Promotion of Access to Information Act<sup>7</sup> which is discussed in **Section 6.2.1 (i)**.

#### **(c) The right to just administrative action**

The Constitution entrenches the right to lawful, reasonable and procedurally fair administrative action.<sup>8</sup> It also entrenches the right to written reasons for administrative action which adversely affects any person's rights. It follows that any administrative action taken by any organ of state with regard to the various authorisations required for developing infrastructure for the generation and distribution of electricity generated by means of nuclear-energy should be lawful, reasonable and procedurally fair, in order for it to withstand challenge. The provisions of the Constitution relating to administrative action have also been supplemented and given effect to, by the enactment of the Promotion of Administrative Justice Act<sup>9</sup>, discussed in more detail in **Section 6.2.1 (h)**.

#### **(d) Enforcement of rights**

The Constitution also introduces so-called class actions, previously recognised in other jurisdictions (notably, the United States of America) but not in South African law.<sup>10</sup> Where any right contained in the Bill of Rights has been infringed or is threatened, a person may act either individually; or on behalf of an incapacitated person; or on behalf of a class of persons; or in the public interest; or as a representative of an association and in the interest of its members.

Accordingly, an individual acting on behalf of a group of neighbours may bring an application to curtail an organ of state's activities, if that person can show the infringement of a Constitutional right, such as the environmental right or the right to just administrative action. The application must be made to a competent court (that is, one with jurisdiction to hear the matter), and that court may grant appropriate relief, including a declaration of rights.

#### **(e) Limitation of rights**

It is important to bear in mind that none of the rights included in the Bill of Rights is absolute, and that all are limited by section 36 of the Constitution, which provides that the rights contained in it may be curtailed by a law of general application provided that the limitation is

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<sup>7</sup> Act No. 2 of 2000

<sup>8</sup> Section 33 of the Constitution

<sup>9</sup> Act No. 3 of 2000

<sup>10</sup> Section 38

“reasonable and justified in an open and democratic society based on human dignity, equality and freedom”.<sup>11</sup> It follows that no-one has an absolute right to an environment not harmful to health or well-being or of access to any information held by a public body like Eskom. In the event of conflict, the competing rights must be balanced.

The Constitution provides that the Bill of Rights applies to all law and is binding on the legislature, the executive, the judiciary and all organs of State.<sup>12</sup> This provision also binds natural or juristic persons.<sup>13</sup> It follows that organs of state in the national, provincial and local spheres of government are bound by the provisions of the Bill of Rights and must regulate their activities in accordance with these rights.

#### **(f) Provincial competence**

Aside from the Bill of Rights it is important to understand the administrative framework established in the Constitution.

The national Government and provincial Government are both entitled to legislate on matters stipulated in Schedule 4 to the Constitution. Both spheres of government have legislative competence over areas that will impact on management in the natural/urban interface, like disaster management, nature conservation and pollution control. It should also be noted that the Constitution contemplates the assignment, by national Government to the provinces, of functions that would normally be the exclusive preserve of the former.

The Constitution provides further that the provincial legislature is empowered to enact legislation with regard to any matter outside its traditional functional areas of control, if that power is expressly assigned to the province by national legislation.<sup>14</sup> Provincial Government may exercise certain competences in relation to public works, but only in respect of the needs of provincial government departments in the discharge of their responsibilities to administer functions specifically assigned to them in terms of the Constitution or any other law.

#### **(g) Local authority competence**

National and provincial government are both obliged, by legislative and other measures, to support and strengthen the capacity of municipalities to manage their own affairs, to exercise their powers, and in performing their functions.<sup>15</sup> Municipalities' powers and functions are further delineated in the Constitution, which provides that each municipality has executive authority in respect of, and the right to administer, certain listed local government matters.<sup>16</sup> In addition, municipalities have the right to administer any other matter assigned to them by national or provincial legislation. Municipalities are further charged with making and enforcing by-laws for the effective administration of the matters which they have the right to administer. Any by-law that conflicts with national or provincial legislation is deemed invalid.<sup>17</sup>

National and provincial government are also obliged to assign to a municipality, by agreement and subject to any conditions, the administration of matters listed in the Schedules to the Constitution (which are either functional areas of concurrent national and provincial legislative competence or functional areas of exclusive provincial legislative competence) where that matter would most effectively be administered on a local level, and importantly, where the municipality has the capacity to administer it.<sup>18</sup> Included in Part B of Schedule 5 to the Constitution are matters like the control of public nuisances; municipal roads; and municipal parks and recreation.

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<sup>11</sup> Section 36(1)

<sup>12</sup> Section 8(i)

<sup>13</sup> Section 8(ii)

<sup>14</sup> Section 104(1)

<sup>15</sup> Section 154(1)

<sup>16</sup> These are listed in Part B of Schedule 4 and Part B of Schedule 5 in the Constitution

<sup>17</sup> Section 156(3)

<sup>18</sup> Section 156(4)

Those areas of the urban/natural interface zone that fall within the legislative and jurisdictional competence of provincial or local authorities (for example a road reserve or urban areas that border a park) fall to be regulated by those authorities. The Constitution aims to co-ordinate the different levels of government and the management of the issues that the public institutions constituted or confirmed by them are charged with governing. This requires co-operation on the part of different organs of state.

#### **(h) The Promotion of Administrative Justice Act, 2000 (Act No. 3 of 2000)**

The purpose of the Promotion of Administrative Justice Act, 2000 (PAJA) is principally to give effect to the right to administrative action that is lawful, reasonable and procedurally fair, to the right to written reasons for administrative action as contemplated in section 33 of the Constitution, and to provide for matters incidental thereto.

Administrative law governs the relationships between public bodies, and between public and private bodies and/or individuals. Because so many activities affecting the environment require authorisation from a public body, and environmental conflicts usually arise from the exercise of administrative decision-making powers, administrative law principles are of particular relevance to environmental law generally, and specifically in the context of the environmental authorisation requirements stipulated by the provisions of section 24 of the NEMA read with its subordinate legislation regulating environmental impact assessment (or EIA). Features of the PAJA include:

#### **(i) Definitions**

“Administrative action” in terms of PAJA means:

*Any decision taken or any failure to take a decision, by-*

- (a) an organ of state, when-
  - (i) exercising a power in terms of the Constitution or a provincial constitution; or
  - (ii) exercising a public power or performing a public function in terms of any legislation;or
- (b) a natural or juristic person, other than an organ of state, when exercising a public power or performing a public function in terms of an empowering provision, which adversely affects the rights of any person and which has a direct, external legal effect

The definition of administrative action contains an extensive list of exclusions, which is applicable to various organs of state and private bodies.

A “decision” as defined in terms of PAJA is:

*Any decision of an administrative nature made, proposed to be made, or required to be made, as the case may be, under an empowering provision, including a decision relating to –*

- (a) *making, suspending, revoking or refusing to make an order, award or determination;*
- (b) *giving, suspending, revoking or refusing to give a certificate, direction, approval, consent or permission;*
- (c) *issuing, suspending, revoking or refusing to issue a licence, authority or other instrument;*
- (d) *imposing a condition or restriction;*
- (e) *making a declaration, demand or requirement;*
- (f) *retaining, or refusing to deliver up, an article; or*
- (g) *doing or refusing to do any other act or thing of an administrative nature, and a reference to failure to take a decision must be construed accordingly.*



## **(ii) Procedural fairness**

PAJA gives effect to the Constitutional right to procedurally fair administrative action. It distinguishes between administrative action affecting “any person” and administrative action that affects “the public”,<sup>19</sup> and applies slightly different standards in respect of each.

Administrative action that “materially and adversely affects the rights or legitimate expectations of any person”, or the “rights of the public”, must be procedurally fair.<sup>20</sup> What is fair depends on the circumstances of each case.<sup>21</sup> However, PAJA provides guidance in this regard. In the case of administrative action that affects “any person”, a person undertaking the administrative action is obliged to:

- Give notice of the nature and purpose of the action;
- afford involved persons a reasonable opportunity to make representations about the action;
- give a clear statement of the administrative action;
- give adequate notice of the right of review or appeal; and
- give adequate notice of the right to request reasons.<sup>22</sup>

Departures from these provisions are allowable only where “reasonable and justifiable in the circumstances”<sup>23</sup> or where a law, agreement or other instrument lays down a different, but fair, procedure.<sup>24</sup>

Where administrative action could be said to affect the public, the decision-maker has discretion to decide what steps to follow to give effect to fair procedure, including holding public enquiries, following notice and comment procedures, or following other fair procedures.<sup>25</sup>

Failure to follow fair procedures by a decision-maker when undertaking administrative action results in an infringement of the Constitutional right to just administrative action and a violation of PAJA, and renders the administrative action open to administrative appeal (if provided for in the legislation that empowers the decision-maker to act), and to judicial review under the Constitution read with PAJA.<sup>26</sup>

## **(iii) Right to reasons for decisions**

PAJA also gives effect to the Constitutional right to request reasons for administrative action, by providing for a procedure in terms of which a person can request written reasons where their rights have been adversely and materially affected.<sup>27</sup> Administrators who fail to furnish adequate reasons will be presumed, if the administrative action is judicially reviewed, to have taken the action without good reason.<sup>28</sup> Decision-makers must therefore be aware that they may be requested to provide written reasons for any administrative action, and that they will be required to provide the reasons in accordance with the procedure stipulated in PAJA.

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<sup>19</sup> The public is defined to include “any group or class of the public”.

<sup>20</sup> Section 3(1) and section 4(1)

<sup>21</sup> Section 3(2)(a)

<sup>22</sup> Section 3(2)(b). An administrator also has discretion to give people an opportunity to obtain assistance, including legal representation, to present and dispute legal arguments and to appear at hearings in person (section 3(3)).

<sup>23</sup> Section 3(4)(a).

<sup>24</sup> Section 3(5)

<sup>25</sup> Section 4(1)

<sup>26</sup> Section 6

<sup>27</sup> Section 5

<sup>28</sup> Section 5(3)

#### **(iv) Judicial review**

PAJA provides numerous grounds on which administrative action may be reviewed by a Court,<sup>29</sup> of which decision-makers undertaking administrative action must take account. The review grounds in PAJA are the following:

- (a) *The administrator who took it-*
  - (i) *was not authorised to do so by the empowering provision;*
  - (ii) *acted under a delegation of power which was not authorised by the empowering provision; or*
  - (iii) *was biased or reasonably suspected of bias;*
- (b) *a mandatory and material procedure or condition prescribed by an empowering provision was not complied with;*
- (c) *the action was procedurally unfair;*
- (d) *the action was materially influenced by an error of law;*
- (e) *the action was taken-*
  - (i) *for a reason not authorised by the empowering provision;*
  - (ii) *for an ulterior purpose or motive;*
  - (iii) *because irrelevant considerations were taken into account or relevant considerations were not considered;*
  - (iv) *because of the unauthorised or unwarranted dictates of another person or body;*
  - (v) *in bad faith; or*
  - (vi) *arbitrarily or capriciously;*
- (f) *the action itself-*
  - (i) *contravenes a law or is not authorised by the empowering provision; or*
  - (ii) *is not rationally connected to-*
    - (aa) *the purpose for which it was taken;*
    - (bb) *the purpose of the empowering provision;*
    - (cc) *the information before the administrator; or*
    - (dd) *the reasons given for it by the administrator;*
- (g) *the action concerned consists of a failure to take a decision;*
- (h) *the exercise of the power or the performance of the function authorised by the empowering provision, in pursuance of which the administrative action was purportedly taken, is so unreasonable that no reasonable person could have so exercised the power or performed the function; or*
- (i) *the action is otherwise unconstitutional or unlawful.*

Courts have wide powers to grant remedies when undertaking review of administrative action, including: Setting aside the administrative action; directing the provision, by the administrator, of reasons for the decision or directing the administrator to act in the manner required by the court; and in exceptional cases, either substituting or varying the administrative action or correcting a defect resulting from the administrative action; or directing the administrator or any other party to the proceedings to pay compensation. The court can also grant a declaration of rights; a temporary interdict or other temporary relief; or make an order as to costs.<sup>30</sup>

In a situation where there has been an omission to act by the administrator (i.e. he/she failed to make a decision, and that is the cause for complaint to the court in question) the court, in proceedings for judicial review, may grant any order that is just and equitable. These orders would include:

- Orders directing the taking of a decision;
- a declaration of the rights of the parties in relation to the taking of a decision;

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<sup>29</sup> Section 6

<sup>30</sup> Section 8(1)(c).

- directing any of the parties to do, or to refrain from doing, any act or thing that the doing (or the refraining from doing) of which the court considers necessary “to do justice between the parties”<sup>31</sup>; or
- as to costs.

## 6.2.2 Promotion of Access to Information Act, 2000 (Act No. 2 of 2000)

Closely linked to the notion of administrative justice is the right of access to information. Without access to information, a person may be unable to determine whether or not his or her right to just administrative action (or to an environment not harmful to human health or well-being or, for that matter, any other Constitutional right) has been infringed.

The purpose of the Promotion of Access to Information Act, 2000 (PAIA) is to give effect to the Constitutional right of access to any information held by the State and any information that is held by another person and that is required for the exercise or protection of any rights, and to provide for matters connected therewith.

Under the Constitutional right of access to information, everyone has the right of access to all information held by the State, and any information held by non-State parties which is required for the exercise or protection of rights.<sup>32</sup> This right prevails over statutory provisions that unreasonably limit disclosure of information.

PAIA gives effect to the Constitutional right of access to information, and lays down detailed procedures in respect of access to the records of public and/or private bodies. Only in certain circumstances, laid down in PAIA,<sup>33</sup> may access to information be refused.

Decision-makers who take decisions in respect of the environment are obliged to take particular note of the following aspects of PAIA:

- If a public or private record reveals an imminent and serious environmental or safety risk, or substantial contravention of, or non-compliance with, the law, then the public interest may over-ride grounds for refusing disclosure;<sup>34</sup>
- Commercial confidentiality is not a basis for refusing access to the results of environmental tests and investigations that reveal a serious environmental or public safety risk;<sup>35</sup> and
- The consequences of intentional non-disclosure of information are serious. It is an offence to destroy, damage, alter, conceal or falsify a record with the intent to deny a right of access in terms of PAIA.<sup>36</sup>

Eskom, as a “public body” under PAIA, must be aware particularly of the provisions of PAIA relevant to the right and manner of access to records of public bodies.<sup>37</sup> Information officers of public bodies<sup>38</sup> are charged with ensuring compliance with the provisions of PAIA, and are assisted by deputy information officers, to be designated for that purpose.<sup>39</sup> Persons who make requests for information (“requesters”) are entitled to records of public bodies where they comply with the procedural requirements of PAIA and there is no ground under PAIA for

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<sup>31</sup> Section 8(2)(c).

<sup>32</sup> Section 32(1)

<sup>33</sup> Part 2, Chapter 4 and Part 3, Chapter 4

<sup>34</sup> Section 46 and Section 70

<sup>35</sup> Sections 36(2), 42(5), 64(2) and 68(2). The results of preliminary testing or other investigations conducted for the purpose for developing methods of testing or other investigations, need not be disclosed (sections 36(3), 42(6), 64(3) and 68(3)).

<sup>36</sup> Section 90

<sup>37</sup> Contained in Part 2 of PAIA

<sup>38</sup> Section 1 of PAIA (definition of “information officer”) specifies the identity of information officers of public bodies.

<sup>39</sup> Section 17

refusing the request.<sup>40</sup> Public bodies are obliged to assist requesters to obtain information in accordance with the procedure laid down in PAIA.<sup>41</sup>

Various duties are imposed upon public bodies under PAIA, including publishing a manual containing detailed information about the body and the information held by it.<sup>42</sup>

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## 6.3 Policy and planning context

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Within the policy and planning context, consideration is given to various local and international policies, plans, guidelines, co-operative agreements, conventions and treaties which are relevant to the project.

### 6.3.1 The Nuclear Non-Proliferation Treaty and domestic implementation arrangements

The Treaty on the Non-Proliferation of Nuclear Weapons, also known as the Nuclear Non-Proliferation Treaty ("The Treaty"), is an international legal instrument (in the form of a treaty) that is aimed at limiting the spread of nuclear weapons. It was opened for signature on 1 July 1968. South Africa is a signatory to this Treaty, having acceded to it on 10 July 1991. The Treaty consists of a preamble and 11 articles. It is sometimes interpreted practically as having three pillars, namely: non-proliferation; disarmament; and the right to use nuclear technology for peaceful purposes.

Since very few of the states possessing nuclear weapons (as well as those states using nuclear reactors for energy generation) are willing to abandon completely their possession of nuclear fuel, the third pillar of the Treaty (under Article IV) provides other states with a possibility to do the same, but under conditions intended to make it difficult to develop nuclear weapons. The Treaty recognises the inalienable rights of sovereign states to use nuclear energy for peaceful purposes, but restricts this right for contracting parties, to be exercised "in conformity with Articles I and II" (the basic non-proliferation obligations that constitute the first pillar of the Treaty).

In regard to implementing South Africa's international legal obligations in the domestic legal regime, it should be noted that the Non-Proliferation of Weapons of Mass Destruction Act was enacted and the Nuclear Energy Act devotes a chapter<sup>43</sup> to the issue of nuclear non-proliferation.

The Act provides that South Africa's Minister of Minerals and Energy "acts as the national authority of the Republic for the purposes of the implementation and application of the Safeguards Agreement<sup>44</sup> and any additional protocols in order to timeously detect and identify nuclear material intended to be used for peaceful nuclear activities and deter the diversion of such nuclear material to the manufacture of nuclear weapons or other nuclear explosive devices or for use in connection with any other purpose that is unknown".

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<sup>40</sup> Section 11

<sup>41</sup> Section 19

<sup>42</sup> Section 14. The manual had to be completed by 28 February 2003. (GN R1094 in *Government Gazette* 23765 of 21 August 2002.)

<sup>43</sup> Chapter 3

<sup>44</sup> Which is defined to mean the "comprehensive safeguards agreement entered into on 16 September 1991 between the Republic and the International Atomic Energy Agency with regard to the application of safeguards for the purpose of the Nuclear Non-Proliferation Treaty pursuant to the Republic's accession to that Treaty on 10 July 1991".

In order to fulfil those responsibilities, the Minister is obliged to liaise regularly with the International Atomic Energy Agency including in the context of “the furnishing and updating of information regarding the design of nuclear installations and sites.” This amounts to a requirement on the Minister that would be applicable in the context of the siting of a nuclear installation (as well as other nuclear facilities planned for the Republic). The Minister may also issue instructions relating to the furnishing of information regarding the design, and changes to the design of nuclear installations and sites.<sup>45</sup>

Other obligations imposed in this context relate to any person in possession of, using, handling or processing what is referred to as “nuclear material” which is defined in the Act to mean “source material and special nuclear material”.

The IAEA’s Safety Standards Series includes a document setting out the safety requirements for the site evaluation for nuclear installations.<sup>46</sup>

A myriad of general and specific requirements are stipulated in the context of achieving compliance with the required safety standards. The requirements of the IAEA safety requirements for site evaluation for nuclear installations will be of fundamental relevance in the context of any application for the licensing of a nuclear installation made under the provisions of South Africa’s national nuclear licensing regime.<sup>47</sup>

South Africa is signatory to a variety of other international legal instruments that are relevant to the issue of nuclear energy and/or controls regarding the use of nuclear energy in certain contexts. Those international instruments include the Treaty Banning Nuclear Weapons Tests in the Atmosphere, in Outer Space and Under Water, 5 August 1963<sup>48</sup>; the Treaty on the Prohibition of the Emplacement of Nuclear Weapons and Other Weapons of Mass Destruction on the Sea-bed and the Ocean Floor and in the Subsoil thereof, 11 February 1971<sup>49</sup>; the Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency, 26 September 1986<sup>50</sup>; the Convention on Nuclear Safety<sup>51</sup>; the African Nuclear Weapon-Free Zone Treaty (Treaty of Pelindaba), 11 April 1996<sup>52</sup>; the Comprehensive Nuclear-Test-Ban Treaty, 10 September 1996<sup>53</sup>.

### **6.3.2 United Nations Declaration on the Rights of Indigenous People, 2008**

The United Nations Declaration on the Rights of Indigenous People, 2008 was adopted by United Nations General Assembly 13 September 2007 but remains a non-legally binding instrument under international law. There is no corresponding legal instrument in South Africa to give effect to this Declaration. The stated purpose of the Declaration is that it “represents the dynamic development of international legal norms and it reflects the commitment of the UN’s member states to move in certain directions”. Owing to the occurrence of Khoi and San heritage features on some of the alternative sites for Nuclear-1, some interested and affected parties claiming descent from Khoi and San people have argued that the Declaration is relevant to the possible removal and/or excavation of heritage artefacts from the sites, with specific reference to the requirements for Informed Consent under this Declaration.

The Declaration contains two articles relative to informed consent of Indigenous People, namely Articles 10 and 11.

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<sup>45</sup> Section 33(2)(b)(vi).

<sup>46</sup> No. NS-R-3 in the IAEA Safety Standards series.

<sup>47</sup> As set out principally in the National Nuclear Regulator Act (where relevant) with the Nuclear Energy Act.

<sup>48</sup> South Africa acceded to this on 10 October 1963.

<sup>49</sup> Which treaty was signed by the Republic on 11 February 1971 and ratified by the Republic on 14 November 1973.

<sup>50</sup> Which was signed by the Republic on 10 August 1987 and ratified on the same date.

<sup>51</sup> Which was signed by the Republic on 20 September 1994 and ratified by the Republic on 24 December 1996.

<sup>52</sup> Which was signed by the Republic on 11 April 1996 and ratified on 27 March 1998.

<sup>53</sup> Signed by the Republic on 24 September 1996 and ratified by the Republic on 30 March 1999.

Article 10: Indigenous peoples shall not be forcibly removed from their lands or territories. No relocation shall take place without the free, prior and informed consent of the indigenous peoples concerned and after agreement on just and fair compensation and, where possible, with the option of return.

Article 11:

1. Indigenous peoples have the right to practise and revitalize their cultural traditions and customs. This includes the right to maintain, protect and develop the past, present and future manifestations of their cultures, such as archaeological and historical sites, artefacts, designs, ceremonies, technologies and visual and performing arts and literature.

2. States shall provide redress through effective mechanisms, which may include restitution, developed in conjunction with indigenous peoples, with respect to their cultural, intellectual, religious and spiritual property taken without their free, prior and informed consent or in violation of their laws, traditions and customs.

The informed consent requirements could not be regarded to be applicable in the case of Nuclear-1, since all the site alternatives for Nuclear-1 are legally owned by Eskom and the sites are not occupied by any indigenous peoples. Any possible removal and/or excavation of heritage artefacts from the sites will take place in terms of conditions laid down by the SA Heritage Resource Agency in terms of the National Heritage Act, 1999.

### **6.3.3 Nuclear Energy Policy for the Republic of South Africa**

The Nuclear Energy Policy for the Republic of South Africa (DME, 2008) represents South Africa's vision for the coordinated development of the nuclear energy sector. The vision is premised on article IV of the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) which, the policy states, affirms South Africa's inalienable right to research, develop, produce and use nuclear energy for peaceful purposes.

The document is structured into two sections:

- Section A: Nuclear Energy Policy Framework; and
- Section B: Nuclear Energy Governance Framework.

#### **a) Section A: Nuclear Energy Policy Framework**

Section A of the document highlights the need for the diversification of primary energy sources in South Africa and increased international interest in nuclear energy (the latter as a result of climate change and the need to reduce greenhouse gas emissions) as important factors motivating the consideration of nuclear energy in South Africa.

The objectives of the policy document are as follows:

- Promotion of nuclear energy as an important electricity supply option through the establishment of a national industrial capability for the design, manufacture and construction of nuclear energy systems;
- Establishment of the necessary governance structures for an extended nuclear energy programme;
- Creation of a framework for safe and secure utilisation of nuclear energy with minimal environmental impact;
- Contribution to the country's national program of social and economic transformation, growth and development;
- To guide in the actions to develop, promote, support, enhance, sustain, and monitor the nuclear energy sector in South Africa;
- Attainment of global leadership and self-sufficiency in the nuclear energy sector in the long term;
- Exercise control over un-processed uranium ore for export purposes for the benefits of the South African economy; and

- Establishing of mechanisms to ensure the availability of land (nuclear sites) for future nuclear power generation;
- Allow for the participation of public entities in the uranium value chain;
- Promoting energy security for South Africa;
- Improvement of the quality of human life and to support the advancement of science and technology;
- Reduction of greenhouse gas emissions; and
- Skills development related to nuclear energy.

The document provides a policy position which clearly indicates the South African Government's intention to actively pursue nuclear energy over the next two decades. The following reasons for the attractiveness of nuclear energy are provided in the document:

- South Africa has sizeable uranium reserves (and other potential nuclear material) and a vibrant mining industry;
- The extraction of uranium ore does not present any major challenges;
- Value addition in the form of beneficiation of uranium ore and the implementation of a strong nuclear energy programme would lead to job creation and the development of skilled workforce;
- A solid regulatory framework, which would facilitate a structured development of the nuclear sector, already exists in South Africa;
- South Africa's non-proliferation credentials, policy and legislative framework allows for the pursuit of a peaceful nuclear energy programme consistent with national and international nuclear non-proliferation obligations;
- Low carbon emissions based on full life cycle and significant role in achieving clean air by avoiding polluting emissions as compared to fossil fuels;
- The availability of safer more efficient new generation nuclear power technologies; and
- Available energy resources for bulk electricity generation.

Eskom is recognised in section 6.3 of the document as the institution in which the country's management, operation and maintenance of nuclear power plant expertise resides. Sixteen (16) policy principles are identified in section 7 of the document. The policy indicates that these principles will guide the South African Government's vision for nuclear energy.

#### **(b) Section B: Nuclear Energy Governance Framework**

The governance framework identifies a number of institutional arrangements which are deemed to be necessary in order for the policy to be implemented. The following institutional arrangements are of particular importance to the nuclear power station:

- Eskom shall be the main owner and operator of nuclear power plants in South Africa. Ownership of nuclear power plants may also take the form of Public Private Partnerships with Eskom retaining the controlling shareholding as the public sector player; and
- In terms of the Radioactive Waste Management Policy and Strategy, the National Radioactive Waste Management Agency (NRWMA) shall be responsible for the management of radioactive waste disposal on a national basis.

Section 13 of the document outlines the strategic intent for South Africa to implement or obtain interests in the complete nuclear fuel cycle. A summary of the strategic initiatives intended to achieve this objective is provided below:

- Government shall ensure that the exploitation of our mineral resources and the securing of a long term supply of these resources are balanced in a sustainable fashion, bearing in mind the country's own needs and the creation of a viable market for local investors. In addition, government shall actively promote investment in uranium exploration and mining, and in very specific instances shall make investments in these industries, as a way of ensuring security of the nuclear fuel supply for South Africa;

- The South African Nuclear Energy Corporation (NECSA) shall be encouraged to participate in the uranium value chain, beneficiation thereof and will be responsible for storing of uranium supplies acquired by the State;
- Government, through NECSA, shall undertake and lead the development of uranium conversion capabilities as part of the beneficiation of uranium. Private sector participation in the conversion process will be promoted;
- Government, through NECSA, shall investigate the viability of developing its own uranium enrichment capabilities and will simultaneously actively seek to obtain access to established uranium enrichment technologies to ensure security of supply;
- Government, through NECSA, shall design a strategy to develop nuclear fuel fabrication capabilities. Government will in the intervening period actively seek to obtain access to established fuel fabrication programmes to ensure security of supply;
- Radioactive waste including used nuclear fuel shall be managed in terms of the radioactive waste management policy and strategy; and
- Government, through NECSA, shall investigate the viability of building an indigenous reprocessing facility. In the short-term South Africa shall make use of existing commercial reprocessing facilities in other countries.

A three-phased approach to meeting the national objectives on nuclear energy is proposed over the next 18 years.

#### **6.3.4 White Paper on the Energy Policy of the Republic of South Africa**

The White Paper on the Energy Policy of the Republic of South Africa (The Energy Policy) was published by the DoE in December 1998.

The Energy Policy governs development within the energy sector in South Africa, and has five policy objectives which are as follows:

- Increased access to affordable energy services;
- Improved energy governance;
- Stimulating economic development;
- Managing energy related environmental and health impacts; and
- Securing supply through diversity.

In order to achieve a balance between energy demand and resource availability, the Energy Policy identifies the need to undertake an Integrated Energy Planning process, while also taking into account health, safety and environmental parameters. The need for the implementation of a National Integrated Resource Plan (NIRP) is also identified in the Energy Policy.

This approach would provide a long-term cost-effective recourse plan for meeting electricity demand that is consistent with reliable electricity supply and environmental, social and economic policies.

#### **6.3.5 Radioactive Waste Management Policy and Strategy**

The purpose of the Radioactive Waste Management Policy and Strategy for the Republic of South Africa (2005) is to ensure the establishment of a comprehensive radioactive waste governance framework by formulating, additional to nuclear and other applicable legislation, a policy and implementation strategy in consultation with all stakeholders.

The scope of the policy relates to all radioactive wastes, except operational radioactive liquid and gaseous effluent (waste discharges), which is permitted to be released to the environment routinely under the authority of the relevant regulators. The policy provides for a coordinated and cooperative approach to the management of radioactive waste from nuclear facilities such



as the Nuclear Power Plant and radioactive waste from the mining, industrial, medical, commercial, agricultural, educational and defence sectors.

The policy is underpinned by the following principles:

- *Polluter pays principle:* The financial burden for the management of radioactive waste shall be borne by the generator of that waste;
- *Transparency regarding all aspects of radioactive waste management:* All radioactive waste management activities shall be conducted in an open and transparent manner and the public shall have access to information regarding waste management where this does not infringe on the security of radioactive material;
- *Sound decision-making based on scientific information, risk analysis and optimisation of resources:* Decision-making shall be based on proven scientific information and recommendation of competent national and international institutions dealing with radioactive waste management;
- *Precautionary principle:* Where there are threats of serious irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation (Rio Principle 15);
- *No import or export of radioactive waste:* In principle South Africa will neither import nor export radioactive waste;
- *Co-operative governance and efficient national co-ordination:* Due to their crosscutting nature, all activities involving radioactive waste management shall be managed in a manner that prevents duplication of effort and maximises coordination;
- *International cooperation:* The government recognises that it shares a responsibility with other countries for global and regional radioactive waste management issues. Its actions shall follow the principles in this policy and in relevant regional and international agreements;
- *Public Participation:* Radioactive waste management shall take into account the interests and concerns of all interested and affected, when decisions are being made; and
- *Capacity building and education:* The government shall create opportunities to develop people's understanding, skills and general capacity concerning radioactive waste management.

### 6.3.6 Nuclear Governance

#### a) International Atomic Energy Agency (IAEA)

The IAEA has unique statutory responsibilities within the United Nations (UN) family for establishing standards for protecting people and the environment from harmful effects of ionising radiation and for the safety of facilities and activities that give rise to radiation risks.

Member States can apply these standards by means of its regulatory provisions for nuclear and radiation safety. In doing so, they rely heavily on the work of the United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR) and the International Commission on Radiological Protection (ICRP).

The IAEA safety standards, comprising Safety Fundamentals, Safety Requirements and Safety Guides, are applied by the IAEA and joint sponsoring organisations to their own operations, and are recommended for use by States and national authorities and by other international organizations in relation to their own activities. Regulating nuclear and radiation safety is a national responsibility, and many Member States, including South Africa, have decided to adopt the IAEA's safety standards for use in their national regulations.

#### b) DEA - NNR Co-operative Governance Agreement

The legislative requirements for nuclear facilities in South Africa are extensive. In the case of the nuclear power station, two key authorisations are needed from two different regulatory

authorities namely DEA and the National Nuclear Regulator (NNR). These authorisations are needed prior to construction activities commencing on the site.

In terms of the National Nuclear Regulator Act 1999 (Act No. 47 of 1999, "the NNRA"), the NNR is responsible for managing radiation hazards from nuclear facilities. The National Nuclear Regulator Act therefore regulates nuclear activities. As specified in Chapter 2, section 5 of the NNRA (1999), the object/mandate of the NNR is 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 authorizations through the implementation of a system of compliance inspections;*
- (e) *fulfill national obligations in respect of international legal instruments concerning nuclear safety; and*
- (f) *ensure that provisions for nuclear emergency planning are in place.*

However, in terms of the NEMA, the DEA has a responsibility for assessing the impacts of the nuclear power station on the environment, which impacts are likely to include those relating to certain aspects of the radiological hazards of the facility.

In recognition of the dual but distinct responsibility with respect to the assessment of radiation hazards, the NNR and the then DEAT signed a Cooperative Governance Agreement (CGA) on 15 June 2006. This CGA has subsequently been superseded by a new DEAT-NNR Cooperative Agreement that was signed on 31 August 2007 and 6 September 2007 by DEAT and NNR respectively (**Appendix B4**). According to the CGA, the scope of the agreement was intended to achieve the following:

- Ensuring the effective monitoring and control of the nuclear hazard;
- Coordinating the exercise of such functions;
- Minimising the duplication of such functions and procedures regarding the exercise of such functions; and
- Promoting consistency in the exercise of such functions.

The CGA essentially provides a framework within which DEAT will consult with NNR on issues related to radiological aspects of the proposed nuclear power station.

In addition, the CGA signed in June 2006 provided a basis for the classification of radiological issues as follows:

- *Category 1:* Radiological/radiation issues of a generic nature and not necessarily directly related to the project;
- *Category 2:* Radiological/radiation issues directly related to the proposed project;
- *Category 3:* Issues directly related to the proposed project with a radiological/radiation and non-radiological/radiation dimension; and
- *Category 4:* Issues related to the NNR process e.g. safety standards etc.

It was decided that radiological issues pertaining to the nuclear power station EIA should be classified in terms of the CGA in order to specify to what extent certain radiological issues would be considered in the EIR.

The DEA issued an explanatory statement on the content of the CGA on 10 February 2009 (Appendix B4). This statement indicates that the NNR and DEA agreed that there needs to be

streamlining of processes in terms of radiological issues identified in an EIA, provided such an approach:

- prevents unnecessary duplications;
- does not compromise the mandates and independence of the respective organs of state;
- facilitates integration of processes; and
- is conducive to efficient and effective decision-making.

The statement says that the consideration of radiological issues in an EIA process would result in unnecessary and avoidable duplication. Accordingly it is stated that the DEA will not make a decision on the acceptability of radiological impacts. GIBB requested a written clarification on the difference between the CGA and the statement issued in February 2009. However, at the time of updating this report, such clarification had not yet been issued and attempts to arrange a meeting between the NNR and the DEA to explore the implications of the legislation and the CGA have been unsuccessful.

As indicated in Chapter 1 of this EIR, the approach in the EIA process (up to and including the Revised Draft EIR that was released for public comment in 2011) was that radiological issues will not be assessed in detail in the EIA. However, in recognition of requirements in the NEMA, associated legislation such as the Promotion of Administrative Justice Act, 2000 (Act No. 3 of 2000) and other legal precedents that require the consideration of all relevant socio-economic factors in an EIA process (even if they are being considered in other approval processes), an assessment of radiological impacts of the proposed power station is included in the current version of the EIR (Version 2). This approach of including an assessment of the radiological impacts of the proposed power station could be seen as a duplication between the EIA and the NNR licensing processes. The current version of the EIR therefore departs substantially from the approach in the previous versions of the EIR in terms of the consideration of radiological impacts. It must however be noted that although the terms of reference for the Radiological study was drawn from the guidelines drafted by the NNR, this Radiological Assessment provides enough information for the environmental assessment process, but it should not be used as is for the NNR licensing process in terms of the safety case application.

### **6.3.7 Integrated Energy Plan**

The Integrated Energy Plan (IEP) was commissioned by DME during 2003 to provide a framework in which specific energy policies, development decisions and energy supply trade-offs can be made on a project-by-project basis.

The intention of the IEP was to create a balance in providing affordable electricity to assist social and economic development and to ensure a security of supply and the minimisation of associated environmental impacts.

Section 6 of the IEP contains information of relevance to this project. This information is summarised below.

#### **a) Diversification**

It is important to diversify energy resources to other energy forms such as natural gas and renewable energies to improve supply security, improve environmental performance and facilitate regional development. The associated cost implications of these alternative energy sources must be traded off against other benefits on a project-by-project basis.

#### **b) Nuclear power generation**

In order to determine if a nuclear power station could be a viable future source of electricity generation, the technical and economic feasibility studies should be completed. Additionally, the possible beneficial role that the nuclear power station could play in the diversification of supply, replacement of fossil fuel as its use diminishes, contribution to the reduction of carbon

dioxide emissions and the possibility of establishing a nuclear export industry must also be determined.

### c) Electricity Generation

While coal-based electricity production is the most cost effective option, there is the potential for hydro, natural gas and nuclear electricity generation. These alternatives to coal will have associated cost implications; however a trade-off for these costs can be made against other benefits on a project-by-project basis.

The use of natural gas as an alternative electricity generator must be considered in moderation due to limited reserves and higher efficiencies obtainable through burning gas directly at the point of application for thermal applications. Switching from electricity to gas will also alleviate the demand on electricity. However, a gas-fired electricity generation station could provide a test-case for gas to be introduced into a region.

## 6.3.8 National Integrated Resource Plan

In order to address electricity demand and supply scenarios, the National Energy Regulator of South Africa (NERSA) developed a National Integrated Resource Plan (NIRP) in accordance with the Energy Policy. The objective of the NIRP is to provide information to market participants on opportunities for investment in new power stations, determine the lowest cost supply options and evaluate the security of supply.

Two plans have been completed and published to date. The first plan (NIRP1) was completed in 2002. An updated plan (NIRP2) was completed in 2004 and it indicated that additional “peaking electricity generating capacity” and “base load electricity generating capacity” is required from 2006 and 2012 respectively.

The promulgation of the New Generation Regulations in August 2009 identified the Department of Energy (DoE) as the Energy Planner responsible for developing and publishing the Integrated Resource Plan (IRP). This has effectively replaced the NIRP process.

As part of the Regulations the System Operator (formerly a division of Eskom Holdings) was tasked with producing the IRP on behalf of the DoE. The proposed IRP was developed in October 2009 from Eskom’s Integrated Strategic Electricity Planning (ISEP) process, taking into account additional requirements from the DoE. The first three years of this IRP were promulgated as the first IRP on 31 December 2009 (with a corrected version promulgated on 29 January 2010).

The second round of the IRP (IRP2) was promulgated on 06 May 2011 and it provides a full 20-year electricity expansion plan for the country. The IRP is revised on a regular basis to reflect the change in circumstances, hence the DoE has completed an IRP update 2013.

The IRP 2013 update indicates the policy adjusted plan and the results of the Ministerial Determinations (in 2011 and 2012), which identified the capacity to be procured from independent power producers (IPPs). In addition 800 MW of co-generation capacity was added to that preferred in the IRP plans. Of these determinations the Renewable Bid Programme has already contracted 2470 MW of renewable capacity and the contracts with the DoE OCGT peakers have been finalised.

The IRP update 2013 is intended to provide insight into critical changes for consideration on key decisions in the interim. In particular it considers:

- The changed landscape over the past three years (2010-2013), in particular in electricity demand and the underlying relationship with economic growth;
- New developments in technology and fuel options (locally and globally);
- Scenarios for carbon mitigation strategies and the impact on electricity supply beyond 2030; and

- The affordability of electricity and its impact on demand and supply beyond 2030.

The IRP update 2013 aims at:

- Developing a new Base Case from the IRP 2010 by updating some of the underlying assumptions based on new information;
- Considering different scenarios or test cases based on alternative government policies or strategies and differences in future economic and resource terrains;
- In order to ensure that the proposed resource choices under some of the key scenarios can meet demand adequately in the future (under most foreseeable circumstances), additional adequacy studies have been concluded, as well as an assessment of the impact on transmission network expansion. These are both included as appendices to the report; and
- The intention is to develop a proposed path of least regret, incorporating the benefits of flexibility, and identify decision trees that consider the key determinants in decisions required and the proposed solutions under different outcomes of these determinants.

The IRP update 2013 was available for public comment until the 07 February 2014. The IRP update 2013 indicated that the revised demand projections suggest that no new nuclear base-load capacity is required until after 2025 and that there are alternative options, such as regional hydro, that can fulfil the requirement and allow further exploration of the shale gas potential before prematurely committing to a technology that may be redundant if the electricity demand expectations do not materialise (especially in the face of widespread embedded photovoltaic generation). Therefore the nuclear decision can possibly be delayed. At the time of writing, the IRP 2010 still remains the official government plan for new generation capacity until the 2013 update has been approved by Cabinet.

### **6.3.9 Energy Efficiency Strategy of the Republic of South Africa**

The vision of the DME Energy Efficiency Strategy (2005) is to contribute towards affordable energy for all, and to minimise the negative effects of energy usage upon human health and the environment.

The goals of the strategy are as follows:

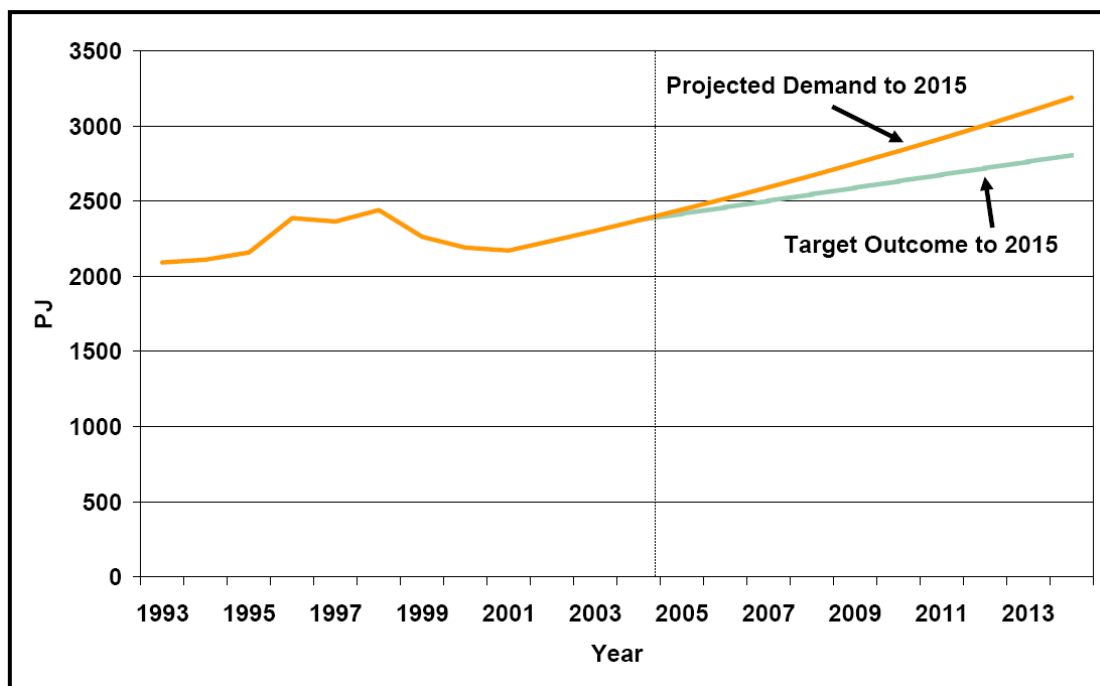
- Improve the health of the nation;
- Job creation;
- Alleviate energy poverty;
- Reduce environmental pollution;
- Reduce CO<sub>2</sub> emissions;
- Improve industrial competitiveness;
- Enhance energy security; and
- Reduce the necessity for additional power generation capacity.

The strategy includes an energy efficiency target of a reduction in final energy demand of 12% by 2015 (Figure 6-1)

The strategy proposes achieving the target through a three-phase approach as follows:

- Phase 1: March 2005 to February 2008;
- Phase 2: March 2008 to February 2011; and
- Phase 3: March 2011 to February 2015.

Sub-targets are also set for various energy consumers including industry and mining, power generation, commercial and public building sector, residential sector and transport sector.



**Figure 6-1: Final energy demand-target outcome to 2015 (DME, 2005)**

### 6.3.10 Energy Security Master Plan – Electricity (2007-2025)

The Electricity Master Plan was compiled by the DME. The plan addresses all aspects of the electricity sector including generation, transmission and distribution as well as Demand Side Management and energy efficiency initiatives for the period 2007-2025. The goals of the Master Plan are as follows:

- Supporting economic growth and development;
- Improving the reliability of electricity infrastructure;
- Providing a reasonably priced electricity supply;
- Ensuring the security of electricity supply as set by a security of supply standard;
- Diversifying the primary energy sources of electricity;
- Meeting the renewable energy targets as set in the Energy White Paper (EWP);
- Increasing access to affordable energy services;
- Reducing energy usage through energy efficiency interventions;
- Accelerating household universal access to electricity; and
- Clarifying some of the policy issues in the context of an evolving electricity sector.

The Master Plan identifies nuclear energy as a viable alternative to coal in that it would diversify the primary energy sources currently in use in South Africa and would also lead to a significant reduction in greenhouse gases.

The Master Plan also considers standards for ensuring security of supply. Three key recommendations within the Master Plan in this regard are as follows:

- The reliability standard for power generation should be the “1 day in 10 years” standard. This means only one day blackout in ten years will be an acceptable standard. This is consistent with the reserve margin of 19% over time;
- For the transmission network, there must always be more than one transmission line to ensure that bulk transportation of power is not interrupted in the case of one line being out of service for Western Cape, Eastern Cape and Kwa-Zulu Natal; and
- The level of investment in the maintenance and rehabilitation of transmission and distribution infrastructure should be regulated, in line with the objects of the Electricity Regulation Amendment Act.

### 6.3.11 National Response to South Africa's Electricity Shortage

This document, dated January 2008, provides the government's proposed interventions to address electricity shortages in South Africa, specifically for the period 2008 – 2013.

The immediate need identified within the document is to bring the electricity system back into balance by restoring a workable reserve margin, thereby alleviating the strain on the generation assets and the primary energy supply chain and allowing "breathing space" for maintenance to be done. The document notes that 3 000 MW of capacity needs to be released to provide the necessary "breathing space".

Two options are identified to address the need, namely the Supply Side option and the Demand Side Option.

#### a) Supply Side

Figure 6-2 summarises the planned capacity expansion envisaged in South Africa from 2007 to 2015.

Current Planned Capacity Expansion (MW)										
Project	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total
Camden (Return-to-Service)	390	390								780
Grootvlei (Return-to-Service)		585	585							1 170
Komati (Return-to-Service)		120	240	320	285					965
Ankerlig (Open Cycle Gas Turbines)	589		740							1 329
Gourikwa (Open Cycle Gas Turbines)	439		296							735
Arnot Upgrade (Coal-fired)	75	60	60	30						225
Medupi (Coal-Fired)						798	1 596	798	1 596	4 788
Ingula (Pumped Storage)						666	666			1 332
Bravo (Coal-fired)							803	1 606	803	3 212
Wind Farm (Renewable)				100						100
Co-generation*			500	1 000	1 000	1 000				3 500
IPP (OCGT)				1 000						1 000
<b>Annual Total</b>	<b>1 493</b>	<b>1 155</b>	<b>2 421</b>	<b>2 450</b>	<b>1 285</b>	<b>2 464</b>	<b>3 065</b>	<b>2 404</b>	<b>2 399</b>	<b>19 136</b>

**Figure 6-2: Capacity expansion programme (Source: DME, 2008)**

Based on Figure 6-2 the document notes that the capacity expansion programme will address the electricity supply problem in the long-term but that the immediate need requires a reduction in the demand to allow more time for maintenance and a reduction in the levels of stress at which power plants are being operated.

## **b) Demand Side**

The core demand reduction programme comprises of the following components:

- Immediate implementation of the Power Conservation Programme;
- Immediate implementation of specific demand side behavioural change programmes; and
- Fast tracking of medium and long term initiatives.

The Power Conservation Programme utilises initiatives such as quota allocations, penalties and cut-offs, incentives, trading and built-in flexibility to reduce demand by 10 % to 15 %. Behavioural change programmes involve the introduction of various projects to try and reduce demand in the medium to long term (18 months and longer). Examples of behavioural change projects identified in the document are as follows:

- The efficient lighting roll-out programme;
- Solar water heating programme; and
- National housing specifications.

In terms of medium and long term initiatives, the document identifies the following options:

- Smart metering for residential customers;
- Fuel switching;
- Implementing the Electricity Regulation Act as amended, especially on the issues pertaining to energy efficiency;
- Adjusting the tariff regime to reflect the actual cost of providing electricity;
- Regulation of the maintenance regime of the electricity infrastructure especially at Distribution level;
- Availability of primary energy (especially coal) for power generation including the holding of strategic reserves by the State;
- Traffic lights and public lighting; and
- Various sectoral industry (government buildings, hospitality industry, transport industry) interventions.

### **6.3.12 National Nuclear Disaster Management Plan**

The stated objective of the National Disaster Management Act, 2002 (Act No. 57 of 2002) (DMA) is to provide for:

- An integrated and co-ordinated disaster management policy that focuses on preventing or reducing the risk of disasters, mitigating the severity of disasters, emergency preparedness, rapid and effective response to disasters and post-disaster recovery;
- the establishment of national, provincial and municipal disaster management centres;
- disaster management volunteers; and
- matters incidental thereto.

The DMA defines a “disaster” as:

*“... a progressive or sudden, widespread or localised, natural or human-caused occurrence which –*

- (a) *causes or threatens to cause-*
  - (i) *death, injury or disease;*
  - (ii) *damage to property, infrastructure or the environment; or*
  - (iii) *disruption of the life of a community; and*
- (b) *is of a magnitude that exceeds the ability of those affected by the disaster to cope with its effects using only their own resources.”*



The DMA further defines “disaster management” as:

*“... a continuous and integrated multi-sectoral and multi-disciplinary process of planning and implementation of measures aimed at –*

- (a) preventing or reducing the risk of disasters;*
- (b) mitigating the severity or consequences of disasters;*
- (c) emergency preparedness;*
- (d) a rapid and effective response to disasters; and*
- (e) post-disaster recovery and rehabilitation”.*

The DMA requires an integrated and co-ordinated policy that focuses on preparedness for disasters, rapid and effective response to disasters and post-disaster recovery and rehabilitation. When a significant event or disaster occurs or is threatening to occur, it is imperative that there should be no confusion as to roles, responsibilities, funding arrangements and the procedures to be followed.

Disaster risk management is a collaborative process that involves all spheres of government, non-governmental organisations, the private sector, a wide range of capacity-building partners and communities. Integrated disaster risk management depends on access to reliable hazard and disaster risk information as well as effective communication systems to enable the receipt, dissemination and exchange of information. It therefore requires capabilities to manage risks on an on-going basis, and to effectively anticipate, prepare for, respond to and monitor a range of natural and other hazards. It further requires systems and processes that will enable all role players to make timely and appropriate decisions during emergencies. These systems and processes must also inform disaster risk management and development planning processes by all stakeholders.

The provision of funding for disaster risk management is likely to constitute the single most important factor contributing to the successful implementation of the DMA by national, provincial and municipal spheres of government. The DMA, with the exception of Chapter 6 (on funding of post-disaster recovery and rehabilitation), does not provide clear guidelines for the provision of funding for disaster risk management. In order to give effect to the requirements of the Act, four key performance areas and three enablers have been identified in the disaster risk management framework to guide the implementation of the DMA. Accordingly, funding from a range of sources for the different aspects of disaster risk management outlined in the key performance areas and enablers will be required. Enabler 3 builds on the recommendations made by the Financial and Fiscal Commission on funding arrangements in its Submission on the Division of Revenue 2003/04, and describes the disaster risk management funding arrangements for organs of state in the national, provincial and local spheres of government.

The legal requirements for the preparation of disaster management frameworks and plans by national, provincial and municipal organs of state are specified in sections 25, 38 and 52 of the DMA. The successful implementation of the DMA critically depends on the preparation and alignment of disaster management frameworks and plans for all spheres of government. The DMA requires every national organ of state indicated in the national disaster management framework to prepare a disaster management plan to address the following:

- The way in which the concept and principles of disaster management are to be applied in the function area;
- Its role and responsibilities in terms of the national disaster management framework;
- Its role and responsibilities regarding emergency response and post-disaster recovery and rehabilitation;
- Its capacity to fulfil its role and responsibilities;
- Particulars of its disaster management strategies; and
- Contingency strategies and emergency procedures in the event of a disaster, including measures to finance these strategies.

The DoE prepared the National Nuclear Disaster Management Plan (DME, 2005b) in response to section 25 of the DMA. The Plan indicates that the DoE is responsible for

coordination and management of matters related to nuclear disaster management at the national level of government. Although the National Nuclear Regulator Act, 1999 (Act No. 47 of 1999, the NNRA) provides for most aspects of nuclear emergency planning, the Plan identifies the application of the DMA in cases of off-site nuclear emergency management for the following reasons:

- Although the NNRA requires the holder of a nuclear authorisation to enter into an agreement with the relevant municipal and provincial authorities to establish an emergency plan, the nuclear emergency planning provisions of the NNRA are applicable to the holder of the nuclear authorisation only and not directly to the three spheres of government. By contrast, the DMA is directly applicable to all spheres of government; and
- The NNRA has no provision to ensure that resources are made available at national level to respond to a nuclear emergency affecting the public living in the vicinity of a nuclear installation. This is however provided for in terms of the DMA whereby national resources and personnel can be made available following the declaration of a “national disaster” (contingency basis) or declaration of a “National State of Disaster” (legal directive) via the National Disaster Management Centre.

The Plan focuses on nuclear disaster management at the national government level and is applicable to any radiological emergency as a result of exposure to radioactivity in the following areas:

- Nuclear Reactors and other Nuclear Fuel Cycle facilities requiring nuclear emergency plans;
- Nuclear powered vessels;
- Transport of radioactive material within the nuclear fuel cycle (air, land and sea);
- Radioactive contamination from nuclear powered satellites; and
- Radioactive fallout from nuclear weapons.

The objective of the Plan is to prevent both early (e.g. vomiting, cataracts, sterility) and late (e.g. cancer and hereditary defects) health effects arising from exposure to radiation by implementing protective actions before the dose levels at which early health effects become evident are accrued by members of the public. The Plan identifies the following protective actions:

- Notification (Authorities and Affected Public);
- Isolation of Affected Area;
- Sheltering;
- Evacuation;
- Use of Thyroid Prophylaxis;
- Relocation; and
- Control of foodstuff and water.

To ensure effective emergency response, the Plan identifies the need for effective emergency preparedness. The key responsibilities of all the role players in a nuclear emergency as outlined in the Plan are summarised in Table 6-1.

**Table 6-1: Key responsibilities of various role-players with respect to nuclear emergency management**

Role player	Key responsibilities
National Executive	<ul style="list-style-type: none"> <li>▪ The National Executive is primarily responsible for the coordination and management of any national disaster and must deal with such a disaster in terms of existing legislation and contingency arrangements</li> </ul>
National Disaster Management Centre	<ul style="list-style-type: none"> <li>▪ The Centre is responsible for declaring a National Disaster on the recommendation of the affected municipality or</li> </ul>

Role player	Key responsibilities
	<ul style="list-style-type: none"> <li>province</li> <li>▪ Execute its powers and duties as per the DMA</li> </ul>
Minister of Co-operative Governance and Traditional Affairs	<ul style="list-style-type: none"> <li>▪ May declare a National State of Disaster if existing legislation and contingency arrangements are inadequate to effectively deal with a National Disaster</li> <li>▪ The Minister may then make regulations or issue directives after consultation with the responsible Cabinet member in connection with the release of national resources and personnel, etc.</li> </ul>
Minister of Energy	<ul style="list-style-type: none"> <li>▪ Make regulations related to nuclear emergency planning and assume a leading role in the National Executive's oversight during a nuclear disaster</li> <li>▪ Responsible to address claims in excess of the financial security provided by the holder of the nuclear authorisation</li> </ul>
Department of Energy	<ul style="list-style-type: none"> <li>▪ Service the Minister's (M&amp;E) obligations regarding nuclear emergency planning matters under the NNR Act (Issue regulations on Financial Security, Public Safety Information Forum and Safety Standards)</li> <li>▪ Ensure compliance with section 25 of the DMA regarding the obligations of the National Organ of State to prepare and maintain a National Nuclear Disaster Management Plan and coordinate its implementation</li> <li>▪ Ensure establishment and chair Nuclear Emergency Planning Steering and Oversight Committees (EPSOC) for relevant nuclear installations as per a formal Terms of Reference</li> <li>▪ Represent DoE at meetings of the Intergovernmental Committee on Disaster Management established in terms of the DMA</li> <li>▪ In case of a National Disaster declared as a result of a nuclear emergency, deploy a DoE representative to the Joint Operations Centre (JOC) of the relevant local government authority (or other appropriate centre) and deploy a DoE representative to the National Disaster Management Centre</li> <li>▪ Responsible for Joint Coordination of post-disaster recovery and rehabilitation with other two levels of government and with the necessary input from the holder of the nuclear authorisation and the nuclear regulator</li> <li>▪ Responsible for notifying, through official channels, South Africa's bordering States about a nuclear emergency</li> <li>▪ Responsible for establishing any procedures required in terms of the National Nuclear Disaster Management Plan</li> </ul>
Department of Cooperative Governance and Traditional Affairs	<ul style="list-style-type: none"> <li>▪ Establish and implement a Provincial Disaster Management Plan and establish a Provincial Disaster Management Centre</li> <li>▪ Execute powers and duties as per the DMA and formal procedures</li> </ul>
Municipal Government	<ul style="list-style-type: none"> <li>▪ Establish and implement a Municipal Disaster Management Plan and establish a Municipal Disaster Management Centre</li> <li>▪ Execute powers and duties as per the DMA and formal procedures</li> </ul>

Role player	Key responsibilities
Holder of the Nuclear Authorisation	<ul style="list-style-type: none"> <li>▪ Enter into an agreement with relevant municipalities and provincial authorities to establish a nuclear emergency plan and submit such plan for approval by the National Nuclear Regulator</li> <li>▪ The holder is responsible for technical and radiological assessment during all phases of the emergency and based on such assessment the holder is responsible for implementing on-site protective actions and recommending off-site public protective actions to the relevant government authority(ies) based on formal procedures</li> <li>▪ The holder is responsible for providing financial security as per regulations in case of nuclear damage</li> <li>▪ The obligation of “prevention” under the DMA is addressed by the holder of the nuclear authorisation through the implementation of the regulatory requirements under the NNRA</li> </ul>
National Nuclear Regulator	<ul style="list-style-type: none"> <li>▪ In terms of the NNR Act the regulator must ensure that the nuclear emergency plan, of the holder of a nuclear authorisation , is effective for the protection of persons should a nuclear accident occur</li> <li>▪ The regulator must recommend standards for the protection of workers and the off-site public to be published as regulations by the Minister of Minerals and Energy</li> <li>▪ The NNR Act provides for certain duties of the regulator regarding nuclear accidents (section 37) and the keeping of records of nuclear accidents (section 40)</li> </ul>
Nuclear Energy Corporation of SA (NECSA)	<ul style="list-style-type: none"> <li>▪ NECSA acts as the National Competent Authority and Contact Point (24 hour Emergency Control Centre) for the Convention on Early Notification of a Nuclear Accident and the Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency</li> </ul>
Other national departments and institutions	<ul style="list-style-type: none"> <li>▪ Involved as appropriate in terms of their legislation, functions and as directed in terms of a National State of Disaster</li> </ul>
International Atomic Energy Agency (IAEA)	<ul style="list-style-type: none"> <li>▪ On request from South Africa, the IAEA will provide assistance in case of a nuclear emergency or the IAEA may request assistance from South Africa in case of a nuclear emergency elsewhere</li> </ul>

### 6.3.13 National Spatial Biodiversity Assessment (NSBA)

The NSBA establishes protection and conservation priority status for terrestrial, inland water, estuarine and marine ecosystems at a 1:250,000 scale nationally, and suggested implementation options for priority areas. It provides the national context for development of biodiversity plans at the sub-national and local scale. For each vegetation type a defensible target has been determined, based on protecting 75% of species occurring in that vegetation type. Ecosystem status is thus based on the percentage of the original area remaining untransformed in relation to the biodiversity target, and a threshold for ecosystem functioning. Conservation priority areas indicate where there is a need for finer scale planning, expansion of the protected area system and integration of biodiversity-compatible development and resource management across the landscape and seascape, including on private and communal land.

#### **6.3.14 National Biodiversity Strategy Action Plan (NBSAP)**

Five main strategic objectives have been identified, namely:

- *Strategic Objective 1:* An enabling policy and legislative framework integrates biodiversity management objectives into the economy.
- *Strategic Objective 2:* Enhanced institutional effectiveness and efficiency ensures good governance in the biodiversity sector.
- *Strategic Objective 3:* Integrated terrestrial and aquatic management across the country minimizes the impacts of threatening processes on biodiversity, enhances ecosystem services and improves social and economic security.
- *Strategic Objective 4:* Human development and well-being is enhanced through sustainable use of biological resources and equitable sharing of the benefits.
- *Strategic Objective 5:* A network of protected areas conserves a representative sample of biodiversity and maintains key ecological processes across the landscape and seascape.

#### **6.3.15 Draft National Strategy for Sustainable Development**

This strategy stems from Section 24 (b) of the Constitution and particularly from the phrase “secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development”.

Although still in development, the final product is set to be used by government and stakeholders to enhance South Africa’s long term planning capacity. It would specifically influence national and provincial development strategies, such as the National Spatial Development Perspective, the Provincial Growth and Development Strategies and other cross-sectoral development programmes. The draft National Strategy notes that the nation’s biodiversity provides critical ecosystem services on which socio-economic systems depend.

#### **6.3.16 Integrated Development Plans (IDP) relevant to the proposed alternative sites for Nuclear-1**

##### **a) City of Cape Town**

The five-year IDP 2012-2017 for the City of Cape Town Metropolitan Municipality recognises the following key strategic focus areas for the City:

- Shared economic growth and development;
- Sustainable urban infrastructure and services;
- Public transport systems;
- Integrated human settlements;
- Safety and security;
- Health, social and human capital development; and
- Good governance and regulatory reform.

One of the many goals set by the City of Cape Town is a renewable energy share equal to 10% of energy consumed, to be achieved by 2020. The City aims to create environmentally sustainable neighbourhoods; the promotion of renewable energy and energy efficiency which ultimately leads to the improvement of local air quality; reduction of poverty levels; and a better quality of life for all.

However, statistics reveal that one third of the population of Cape Town earns an income below the household subsistence level and therefore that segment of the population cannot afford basic municipal services. An indigent tariff policy has therefore been implemented, providing low/no income earners with 50 units of electricity per day for domestic electricity consumers using less than 450 units per month. To ensure a safe and reliable supply of

electricity, Cape Town wishes to upgrade and maintain ageing infrastructure. The City is part of the national pilot to establish the first Regional Electricity Distributor (RED). The aim of the RED is to restructure the electricity distribution industry by merging Eskom and the various municipalities into six REDs, thus standardising tariffs and services, and bringing a balance to the distribution of electricity. The RED, once established, will serve the Western and Northern Cape<sup>54</sup>.

b) Cacadu District Municipality

Cacadu District Municipality (CDM) is situated in the Eastern Cape Province and its area of jurisdiction includes nine local municipalities with a total population of 369 782 people<sup>55</sup>.

Although the distribution network within the District can generally be regarded as reasonable, slight disparities exist between varying local municipalities due to the nature of their location. Although the majority of the communities of most Local Municipalities have direct access to electricity, a significant capital outlay is envisaged in order to upgrade both the urban and rural networks.

Operational strategies were identified for different sectors, and in terms of energy use, it has been suggested that alternative sources of energy should be considered to reduce the negative environmental impact associated with power generation. Likewise the use of firewood in South Africa has led to deforestation and soil erosion. Renewable sources of energy are clean and provide an alternative to the use of fossil fuels. Solar energy for example is ideal in the DMA (hot conditions) as it would be able to provide the average household with half of their energy requirements. A summary of the Local Municipality IDPs, indicated that all nine local municipalities require an upgrade of their electricity networks to meet the power demands of their area. The CDM has identified a strategy to build and expand the social and economic structure within the municipality by building, revamping and maintaining electricity infrastructure including the generation of electricity.

c) Kouga Local Municipality (KLM) - Information contained in the SDF of the IDP<sup>56</sup>

This local municipality's seat of office (Humansdorp) is located in the Eastern Cape Province, approximately 100 km west of Port Elizabeth.

KLM comprises the following areas and settlements:

- Patensie, including Cyril Ramaphosa Village;
- Hankey, including Phillipsville, Weston and Centerton;
- Jeffreys Bay, including Wave Crest, Pellsrus, Tokyo Sexwale, Marina Martinique, Aston Bay and Paradise Beach;
- St Francis Bay, including Sea Vista and Cape St Francis;
- Humansdorp, including Kwanomzamo and Kruisfontein;
- Oyster Bay, including Umzamowethu;
- Andrieskraal;
- Loerie, including Loerieheuwel; and
- Thornhill. Census

The Thyspunt Site falls within the jurisdiction of the KLM. Humansdorp, with the highest population concentration in the region, has established infrastructure and acts as a regional service centre, supplying the surrounding agricultural communities and nearby coastal towns with commodities and services. The region's commercial and industrial activities are centred in Humansdorp. According to the 2007 census, Kouga is the most densely populated municipality in the District with a population estimate at 80 459. Since 1996, the population of Kouga increased at an average annual rate of 2.4% per annum compared to an annual

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<sup>54</sup> Smith, Ndlovu and Summers (2007)

<sup>55</sup> CDM: 370 151; DMA: 6191 & CDM IDP 2012 - 2017

<sup>56</sup> IDP 2009/12

average growth rate of 1.1% within the Cacadu District and a 0.3% provincial growth rate. Humansdorp has a growth rate of 2% with a population rate of 23 991.

The number of households with electricity has doubled in the past five years. This is directly related to housing projects and the statistics will improve more with the current housing schemes. Unfortunately, the influx of people and the continuous growth in terms of informal settlements place persistent pressure on the Municipality to catch up with the estimated backlogs.

Approximately 8237 in 2006 of the households in the Kouga region have access to electricity. Electricity in most areas is supplied by the Municipality, which in turn purchases the electricity from Eskom. The distribution network in the urban areas can be regarded as reasonable.

A number of development priorities were identified as part of this IDP. One of them included the upgrade, provision and maintenance of infrastructure, i.e. roads, storm water, water provision, sewerage services, and electricity. The possible causes are:

- lack of funds and resources to address the backlogs;
- large infrastructure network to maintain;
- population growth and urbanisation;
- service level expectations of communities and minimum services requirements; and
- the inability of some users to pay for services rendered.

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## 6.4 Legislative Context: National Legislation

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The legislative framework applicable to this project is diverse and consists of a number of Acts and Regulations which must be complied with by an applicant such as Eskom. A summary of the key environmental legislation is provided in the following sections.

### 6.4.1 The National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA)

NEMA<sup>57</sup> is the most significant single piece of legislation dealing with environmental management in South Africa. A stated purpose of NEMA is, amongst others, to provide for co-operative environmental governance by establishing principles for decision-making on matters affecting the environment and to provide for institutions that will promote co-operative governance and procedures for co-ordinating environmental functions exercised by organs of state<sup>58</sup>.

NEMA takes the form of “framework” legislation. It establishes a set of 18 principles which apply throughout the Republic to the actions of all organs of state that may significantly affect the environment and which -

- a) “apply alongside all other appropriate and relevant considerations, including the state's responsibility to respect, protect, promote and fulfil the social and economic rights in

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<sup>57</sup> It must be borne in mind that NEMA applies throughout the territory of the Republic of South Africa which effectively means that it applies throughout the terrestrial area of the Republic and seaward beyond the low-water mark, to the outer extent of the territorial waters (which extend for 12 nautical miles from the low-water mark or specifically demarcated baselines – see the provisions of the Maritime Zones Act, 15 of 1994 in this regard).

<sup>58</sup> Section 239 of the Constitution defines an “organ of state” as:

- (a) any department of state or administration in the national, provincial or local sphere of government; or
- (b) any other functionary or institution-
  - (i) exercising a power or performing a function in terms of the Constitution or a provincial constitution; or
  - (ii) exercising a public power or performing a public function in terms of any legislation, but does not include a court or a judicial officer

- Chapter 2 of the Constitution, and in particular, the basic needs of categories of persons disadvantaged by unfair discrimination;
- b) serve as the general framework within which environmental management and implementation plans must be formulated;
  - c) serve as guidelines by reference to which any organ of state must exercise any function when taking any decision in terms of the Act or any statutory provision concerning the protection of the environment;
  - d) serve as principles by reference to which a conciliator appointed under the Act must make recommendations; and
  - e) guide the interpretation, administration and implementation of the Act, and any other law concerned with the protection or management of the environment.”

The following principles are of particular interest in that they also impact on any decisions that may be taken in relation to the authorisation of the construction of nuclear power-generating infrastructure, such as the nuclear power station, in South Africa:

- Environmental management must place people and their needs at the forefront of its concern, and serve their physical, psychological, developmental, cultural and social interests equitably<sup>59</sup>;
- Development must be socially, environmentally and economically sustainable<sup>60</sup>;
- Sustainable development requires the consideration of all relevant factors including the following<sup>61</sup>:
  - i. “That the disturbance of ecosystems and loss of biological diversity are avoided, or, where they cannot be altogether avoided, are minimised and remedied;
  - ii. that pollution and degradation of the environment are avoided, or, where they cannot be altogether avoided, are minimised and remedied;
  - iii. that the disturbance of landscapes and sites that constitute the nation's cultural heritage is avoided, or where it cannot be altogether avoided, is minimised and remedied;
  - iv. that waste is avoided, or where it cannot be altogether avoided, minimised and re-used or recycled where possible and otherwise disposed of in a responsible manner;
  - v. that the use and exploitation of non-renewable natural resources is responsible and equitable, and takes into account the consequences of the depletion of the resource;
  - vi. that the development, use and exploitation of renewable resources and the ecosystems of which they are part do not exceed the level beyond which their integrity is jeopardised;
  - vii. that a risk-averse and cautious approach is applied, which takes into account the limits of current knowledge about the consequences of decisions and actions; and
  - viii. that negative impacts on the environment and on people's environmental rights be anticipated and prevented, and where they cannot be altogether prevented, are minimised and remedied.”
- The participation of all interested and affected parties in environmental governance must be promoted, and all people must have the opportunity to develop the understanding, skills and capacity necessary for achieving equitable and effective participation, and participation by vulnerable and disadvantaged persons must be ensured<sup>62</sup>;
- The social, economic and environmental impacts of activities, including disadvantages and benefits, must be considered, assessed and evaluated, and decisions must be appropriate in the light of such consideration and assessment<sup>63</sup>;
- There must be intergovernmental co-ordination and harmonisation of policies, legislation and actions relating to the environment<sup>64</sup>; and

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<sup>59</sup> Section 2(2) of NEMA

<sup>60</sup> Section 2(3) of NEMA

<sup>61</sup> Section 2(4)(a) of NEMA

<sup>62</sup> Section 2(4)(f) of NEMA

<sup>63</sup> Section 2(4)(i) of NEMA

<sup>64</sup> Section 2(4)(l) of NEMA



- Global and international responsibilities relating to the environment must be discharged in the national interest<sup>65</sup>.

The manner in which the nuclear power station complies with these principles is investigated within the legal specialist study, whilst a discussion of how these principles have been taken into account in the specialist studies is provided in Table 6-4.

NEMA also contains provisions on the creation of environmental management plans and environmental implementation plans and stipulates the respective organs of state responsible for doing so, as well as what such management and implementation plans are to include<sup>66</sup>.

In a Constitutional Court decision (*Fuel Retailers Association of Southern Africa v Director-General Environmental Management, Department of Agriculture, Conservation and Environment, Mpumalanga Province and Others*)<sup>67</sup> the Court made the following points in relation to the concept of sustainable development:

- sustainable development provides a framework for reconciling socio-economic development and environmental protection;<sup>68</sup>
- sustainable development does not require the cessation of socio-economic development but instead seeks to regulate the manner in which it (socio-economic development) takes place;<sup>69</sup>
- sustainable development envisages that decision-makers will ensure that socio-economic developments remain firmly attached to their ecological roots and that these roots are protected and nurtured so that they may support future socio-economic developments;<sup>70</sup>
- sustainable development incorporates two of the internationally recognised elements (i.e. the principle of integration of environmental protection and socio-economic development, and the principle of inter-generational and intra-generational equity);<sup>71</sup>
- sustainable development requires all developments to be socially, economically and environmentally sustainable;<sup>72</sup> and
- together with sustainable use and exploitation of natural resources, the notion of sustainable development is at the core of environmental protection.<sup>73</sup>

Against this backdrop the Court held that (construed in the light of section 24 of the Constitution), NEMA requires the integration of environmental protection and economic and social development so that “whenever a development which may have a significant impact on the environment is planned, it (NEMA) envisages that there will always be a need to weigh considerations of development, as underpinned by the right to socio-economic development, against environmental considerations, as underpinned by the right to environmental protection.”<sup>74</sup>

*Chapter 5 of NEMA, entitled “Integrated Environmental Management” establishes the EIA regime in South Africa.* Since 3 July 2006, the procedural and substantive requirements for EIAs in South Africa have been regulated in accordance with the provisions contained in NEMA and the NEMA EIA Regulations<sup>75</sup>.

The NEMA EIA Regulations include lists of activities which require either “basic assessment”<sup>76</sup> or “scoping and environmental impact assessment”<sup>77</sup>, and also sets out procedural and

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<sup>65</sup> Section 2(4)(n) of NEMA

<sup>66</sup> Chapter 3 of NEMA (Sections 11-16)

<sup>67</sup> 2007 (6) SA 4 (CC)

<sup>68</sup> Paragraph 57 (at page 32 of the judgment)

<sup>69</sup> Paragraph 58 (at page 33)

<sup>70</sup> Ibid.

<sup>71</sup> Paragraph 59 (at page 33 of the judgment)

<sup>72</sup> Paragraph 60 (at page 34)

<sup>73</sup> Paragraph 45 (at page 26)

<sup>74</sup> Paragraph 61 (at page 35)

<sup>75</sup> Published respectively in Government Notices R385, 386 and 387 in *Government Gazette* 28753 dated 21 April 2006

<sup>76</sup> R386 in *Government Gazette* 28753 dated 21 April 2006

substantive requirements of EIAs and the issue of environmental authorisations. *New EIA regulations, which repeal the NEMA EIA Regulations of 2006, were promulgated in June 2010<sup>78</sup> and came into effect on 2 August 2010. In terms of the transitional provisions of the 2010 NEMA EIA Regulations<sup>79</sup>:*

- an application submitted in terms of the previous NEMA Regulations, which is pending when the new regulations take effect, must despite the repeal of these regulations be dispensed with as if those previous NEMA regulations were not repealed.
- If a situation arises where activities, listed under the previous (2006) NEMA Regulations, are not listed similarly under the current list of activities and competent authorities in terms of NEMA or the National Environmental Management: Waste Act, 2008, and where a decision on an application submitted under the previous NEMA Regulations is still pending, the competent authority will consider such application to be withdrawn.
- Where an application submitted in terms of the previous (2006) NEMA Regulations, is pending in relation to an activity of which a component of the same activity was not listed under the previous NEMA Regulations, but is now listed (under the 2010 NEMA Regulations), the competent authorities must dispense of such application in terms of the previous NEMA Regulations and may authorise the listed activity, as if it was applied for, on condition that all impacts of the newly listed activity and requirements of these Regulations have also been considered and adequately assessed by the applicant. Therefore, it is not necessary to submit a new application for newly listed activities that had not been applied for previously.

The implications of these transitional provisions are as follows:

- If an application has already been submitted (as is the case in this instance), the application must be considered in terms of the 2006 NEMA EIA Regulations, provided that the newly listed activities in terms of the 2010 NEMA EIA Regulations are assessed in this DEIR.
- No amendment of the existing application is required.

An analysis of the activities listed in terms of the 2006 NEMA EIA Regulations, and those listed in terms of the 2010 NEMA EIA Regulations, is provided in Tables 6-2 and 6-3.

a) Activities requiring Basic Assessment and environmental authorisation

Activities identified in terms of section 24(2)(a) and (d) of the NEMA may not commence without environmental authorisation from the competent authority and the investigation, assessment and communication of potential impact of such activities must follow the procedure as described in regulations 22 to 26 of the NEMA EIA Regulations. All of the activities related to a nuclear power station that require basic assessment are set out in Table 6-2.

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<sup>77</sup> Government. Notice No. R387 in *Government Gazette* 28753 dated 21 April 2006

<sup>78</sup> **543 to 546 in Government Gazette 33306 dated 18 June 2010**

<sup>79</sup> **Regulation 76**

Table 6-2: Activities requiring Basic Assessment

Activity No. in 2006 NEMA EIA regulations	Activity description as per 2006 regulations	Equivalent activity no. in GN R 544 of 2010 <sup>80</sup>	Equivalent activity no. in GN R 546 of 2010	Equivalent activity no. in GN R 983 of 2014	Equivalent activity no. in GN R 985 of 2014	Identification of competent authority
1	<p><b>The construction of facilities or infrastructure, including associated structures or infrastructure, for-</b></p> <p><b>(a) the generation of electricity where the electricity output is more than 10 megawatts but less than 20 megawatts;</b></p> <p><b>(k) the bulk transportation of sewage and water, including storm water, in pipelines with -</b></p> <p><b>(i) an internal diameter of 0,36 metres or more; or</b></p> <p><b>(ii) a peak throughput of 120 litres per second or more;</b></p> <p><b>(l) the transmission and distribution of electricity above ground with a capacity of more than 33 kilovolts and less than 120 kilovolts;</b></p> <p><b>(m) any purpose in the one in ten year flood line of a river or stream, or within 32 metres from the bank of a river or stream where the flood line is unknown, excluding purposes associated with existing residential use, but including-</b></p> <p><b>(i) canals;</b></p> <p><b>(ii) channels;</b></p> <p><b>(iii) bridges;</b></p> <p><b>(iv) dams; and</b></p> <p><b>(v) weirs;</b></p>	<p>1</p> <p>1(i)</p> <p>9</p> <p>10</p> <p>11</p> <p>n.a.<sup>81</sup></p>	<p>n.a.</p> <p>n.a.</p> <p>n.a.</p> <p>n.a.</p> <p>16</p> <p>8</p>	<p><u>2</u></p> <p><u>2(i)</u></p> <p><u>9</u></p> <p><u>11(i)</u></p> <p><u>12</u></p> <p><u>n.a</u></p>	<p><u>n.a.</u></p> <p><u>n.a.</u></p> <p><u>n.a</u></p> <p><u>n.a</u></p> <p><u>14</u></p> <p><u>n.a</u></p>	<p>The competent authority in respect of the activities listed in this part of the schedule is the environmental authority in the province in which the activity is to be undertaken unless it is an application for an activity contemplated in section 24C(2) of the Act, in which case the competent authority is the Minister or an organ of state with delegated powers in terms of section 42(1) of the Act, as amended.</p> <p><i>[In the case of the Nuclear 1 EIA DEAT is the competent authority for purposes of a decision on activities listed in terms of section 24 of NEMA.</i></p>

<sup>80</sup> Government Notice R 544 of 2010

<sup>81</sup> Similar activity listed under Activity 8 of GN R 546 of 2010 – this requires a Scoping and EIA Assessment in terms of the 2010 NEMA EIA Regulations

Activity No. in 2006 NEMA EIA regulations	Activity description as per 2006 regulations	Equivalent activity no. in GN R 544 of 2010 <sup>80</sup>	Equivalent activity no. in GN R 546 of 2010	Equivalent activity no. in GN R 983 of 2014	Equivalent activity no. in GN R 985 of 2014	Identification of competent authority
	(q) the landing, parking and maintenance of aircraft including- (i) helicopter landing pads, excluding helicopter landing facilities and stops used exclusively by emergency services; (iv) structures for fuelling and fuel storage.					<i>The legal basis for DEAT's role as competent authority is reflected in the provisions of section 24C of NEMA. It provides<sup>82</sup> that the Minister (and by implication, delegated authorities and/or officials within the DEAT) must be identified as the competent authority in terms of section 24C(1) if the activity is undertaken, or is to be undertaken, by a statutory body, excluding any municipality, performing an exclusive competence of the national sphere of government.<sup>83</sup></i>
2.	Construction or earth moving activities in the sea or within 100 metres inland of the high water mark of the sea, in respect of- (a) fixed or floating jetties and slipways; (b) embankments; (c) stabilising walls; (d) buildings; or (e) infrastructure.	14	n.a.	<u>17</u>	<u>n.a</u>	
3.	The prevention of the free movement of sand, including erosion and accretion, by means of planting vegetation, placing synthetic material on dunes and exposed sand surfaces within a distance of 100 metres inland of the high water mark of the sea.	17	n.a.	<u>18</u>	<u>n.a</u>	
4.	The dredging, excavation, infilling, removal or moving of soil, sand or rock exceeding 5 cubic metres from a river, tidal lagoon, tidal river, lake, in-stream dam, floodplain or wetland.	16, 18	n.a.	<u>19</u>	<u>n.a</u>	
5.	The removal or damaging of indigenous vegetation	16, 18	n.a.	<u>n.a</u>	<u>12</u>	

<sup>82</sup> Section 24C(2)

<sup>83</sup> Section 24C(2)(d)(iii).

Activity No. in 2006 NEMA EIA regulations	Activity description as per 2006 regulations	Equivalent activity no. in GN R 544 of 2010 <sup>80</sup>	Equivalent activity no. in GN R 546 of 2010	Equivalent activity no. in GN R 983 of 2014	Equivalent activity no. in GN R 985 of 2014	Identification of competent authority
	or more than 10 square metres within a distance of 100 metres inland of the high water mark of the sea.					
6.	The excavation, moving, removal, depositing or compacting of soil, sand, rock or rubble covering an area exceeding 10 square metres in the sea or within a distance of 100 metres inland of the high-water mark of the sea.	16, 18	n.a.	<u>n.a</u>	<u>n.a</u>	
7.	The above ground storage of a dangerous good, including petrol, diesel, liquid petroleum gas or paraffin, in containers with a combined capacity or more than 30 cubic metres but less than 1 000 cubic metres at any one location or site.	13	10	<u>14</u>	<u>10</u>	
12.	The transformation or removal of indigenous vegetation of 3 hectares or more or of any size where the transformation or removal would occur within a critically endangered or an endangered ecosystem listed in terms of section 52 of the National Environmental Management: Biodiversity Act, 2004 (Act 10 of 2004).	N.A.	12, 13 <sup>84</sup> , 14	<u>27</u>	<u>12</u>	The competent authority in respect of the activities listed in this part of the schedule is the environmental authority in the province in which the activity is to be undertaken unless it is an application for an activity contemplated in section 24C(2) of the Act, in which case the competent authority is the
14.	The construction of masts of any material or type and of any height, including those used for telecommunication broadcasting and radio transmission, but excluding-  (a) masts of 15 metres and lower exclusively used (i) by radio amateurs; or (ii) for lighting purposes	N.A.	3	<u>n.a</u>	<u>3</u>	

<sup>84</sup> This activity and activities 16, 17, 19, 20, 22, 23 and 24 of GN R 546 of 2010 refer to focus areas for protected area expansion identified in the National Protected Area Expansion Strategy (Government of South Africa 2008).

Activity No. in 2006 NEMA EIA regulations	Activity description as per 2006 regulations	Equivalent activity no. in GN R 544 of 2010 <sup>80</sup>	Equivalent activity no. in GN R 546 of 2010	Equivalent activity no. in GN R 983 of 2014	Equivalent activity no. in GN R 985 of 2014	Identification of competent authority
	(b) <b>flag poles</b> ; and (c) lightning conductor poles.					Minister or an organ of state with delegated powers in terms of section 42(1) of the Act, as amended
15.	<b>The construction of a road that is wider than 4 metres or that has a reserve wider than 6 metres, excluding roads that fall within the ambit of another listed activity or which are access roads of less than 30 metres long.</b>	22	4	<u>24</u>	<u>4, 18</u>	
16.	<b>The transformation of undeveloped, vacant or derelict land to-</b>  (a) ... commercial, industrial or institutional use where such development does not constitute infill and where the total area to be transformed is bigger than 1 hectare.	23, 24	n.a.	<u>27</u>	<u>15</u>	
N.A.		15 The construction of facilities for the desalination of sea water with a design capacity to produce more than 100 cubic metres of treated water per day.	n.a.	<u>16</u>	<u>n.a</u>	The competent authority in respect of the activities listed in this part of the schedule is the environmental authority in the province in which the activity is to be undertaken, unless it is an application for an activity contemplated in section 24C(2) of the Act, in which case the competent authority is the Minister or an organ of state with delegated
N.A		12. The construction of facilities or infrastructure for the off-stream storage of water, including dams and reservoirs, with a combined capacity of 50 000 cubic metres or more.	n.a	<u>13</u>	<u>2</u>	

Activity No. in 2006 NEMA EIA regulations	Activity description as per 2006 regulations	Equivalent activity no. in GN R 544 of 2010 <sup>80</sup>	Equivalent activity no. in GN R 546 of 2010	Equivalent activity no. in GN R 983 of 2014	Equivalent activity no. in GN R 985 of 2014	Identification of competent authority
N.A		n.a	n.a	25 <sup>85</sup> The development and related operation of facilities or infrastructure for the treatment of effluent, wastewater or sewage with a daily throughput capacity of more than 2000 cubic metres but less than 15000 cubic metres	n.a	powers in terms of Section 42(1) of the Act, as amended.

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<sup>85</sup> As per Chapter 3, a sewerage treatment plant is proposed to be designed to cater for 1000 m<sup>3</sup> throughput per day. Although this listed activity is not explicitly triggered, the impacts associated with this activity have been assessed.

b) **Activities requiring Scoping and EIA**

In terms of the list of activities and competent authorities identified in terms of sections 24 and 24D of NEMA<sup>86</sup>, the activities listed in **Table 6-3** may not commence without an environmental authorisation from the competent authority. Scoping and Environmental Impact Assessment procedures contained in the NEMA EIA Regulations must be complied with before such an authorisation can be issued<sup>87</sup>.

**Table 6-3: Activities requiring Scoping and EIA**

Activity No. in 2006 NEMA EIA regulations	Activity description as per 2006 regulations	Equivalent activity no. in 2010 NEMA EIA Regulations <sup>88</sup>	Equivalent activity no. in 2014 NEMA EIA Regulations GNR 984	Identification of competent authority
1.	<b>The construction of facilities or infrastructure, including associated structures or infrastructure, for-</b>			<p><i>[In the case of the Nuclear-1 EIA DEAT is the competent authority for purposes of a decision on activities listed in terms of section 24 of NEMA.</i></p> <p><i>The legal basis for DEAT's role as competent authority is reflected in the provisions of section 24C of NEMA. It provides<sup>89</sup> that the Minister (and by implication, delegated authorities and/or officials within the DEAT) must be identified as the competent authority in terms of section 24C(1) if the activity is undertaken, or is to be undertaken, by a statutory body, excluding any municipality, performing an exclusive competence of the national sphere of government.<sup>90</sup>]</i></p>
(a)	<b>the generation of electricity where-</b> <b>(i) the electricity output is 20 megawatts or more; or</b> <b>(ii) the elements of the facility cover a combined area in excess of 1 hectare;</b>	1	<u>2</u>	
(b)	<b>nuclear reaction including the production, enrichment, processing, reprocessing, storage or disposal of nuclear fuels, radioactive products and waste;</b>	2	<u>3</u>	
(c)	<b>the above ground storage of a dangerous good, including petrol, diesel, liquid petroleum gas or paraffin, in containers with a combined capacity of 1 000 cubic metres or more at any one location or site including the storage of one or more dangerous goods, in a tank farm;</b>	3	<u>4</u>	

<sup>86</sup> Published under GN R387 in *Government Gazette* 28753 of 21 April 2006 as amended by GN R614 in *Government Gazette* 28938 of 23 June 2006.

<sup>87</sup> The legal implications of triggering activities on both lists must be borne in mind, as such a situation arises in the context of the on-going environmental assessment for the proposed Nuclear 1 project. The situation is regulated by the provisions of Regulation 21(2) of the NEMA EIA Regulations which stipulate that scoping must be applied to an application if the "application is for two or more activities as part of the same development and scoping must in terms of paragraph (a) or (b) be applied in respect of any of the activities". In other words, if a single activity requires scoping and EIA before authorisation, then each activity that requires approval must also be subject to this assessment methodology.

<sup>88</sup> Government Notice R 545 of 2010

<sup>89</sup> Section 24C(2)

<sup>90</sup> Section 24C(2)(d)(iii)



Activity No. in 2006 NEMA EIA regulations	Activity description as per 2006 regulations	Equivalent activity no. in 2010 NEMA EIA Regulations <sup>88</sup>	Equivalent activity no. in 2014 NEMA EIA Regulations GNR 984	Identification of competent authority
(e)	any process or activity which requires a permit or license in terms of legislation governing the generation or release of emissions, pollution, effluent or waste and which is not identified in Government Notice R386 of 2006 or included in the list of waste management activities published in terms of section 19 of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) in which case the activity is regarded to be excluded from the list;	5	<u>6</u>	
2.	Any development activity, including associated structures and infrastructure, where the total area of the developed area is, or is intended to be, 20 hectares or more.	15	<u>15</u>	
5.	The route determination of roads and design of associated physical infrastructure, including roads that have not yet been built for which routes have been determined before the publication of this notice and which has not been authorised by a competent authority in terms of the Environmental Impact Assessment Regulations, 2006 made under section 24(5) of the Act and published in Government Notice R385 of 2006, where- (c) the road reserve is wider than 30 metres.	18	<u>27</u>	As above
9.	Construction or earth moving activities in the sea or within 100 metres inland of the high-water mark of the sea, excluding an activity listed in item 2 of Government Notice R386 of 2006 but including construction or earth moving activities in respect of- (a) facilities associated with the arrival and departure of vessels and the handling of cargo; (e) rock revetments and other stabilising structures; (i) tunnels; or (j) underwater channels.	24	<u>26</u>	As above

Activity No. in 2006 NEMA EIA regulations	Activity description as per 2006 regulations	Equivalent activity no. in 2010 NEMA EIA Regulations <sup>88</sup>	<u>Equivalent activity no. in 2014 NEMA EIA Regulations GNR 984</u>	Identification of competent authority
10.	<b>Any process or activity identified in terms of section 53(1) of the National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004)</b>	n.a.	<u>n.a</u>	As above
n.a.	<b>The construction of an island, anchored platform or any other permanent structure on or along the sea bed.</b>	14	<u>14</u>	The competent authority in respect of the activities listed in this part of the schedule is the environmental authority in the province in which the activity is to be undertaken, unless – it is an application for an activity contemplated in section 24c(2) of the Act, in which case the competent authority is the Minister or an organ of state with delegated powers in terms of Section 42(1) of the Act, as amended; or the activity is to be conducted in or on a mining area, or is to transform the area where the activity is to be conducted into a mining area, in which case the competent authority is the Minister of Minerals and Energy.

#### 6.4.2 The National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004)

The National Environmental Management: Air Quality Act, 2004 (NEM:AQA) reforms the law regulating air quality in South Africa by providing reasonable measures for the prevention of pollution and ecological degradation, such as national norms and standards regulating air quality monitoring, management and control by all spheres of government, as well as specific air quality measures which will be regulated by virtue of an atmospheric emissions licensing system.

Chapter 4 of the NEM:AQA establishes a system of air quality management measures. In terms of section 32, the Minister of Environmental Affairs or the MEC of the province in question (the “relevant authority”) may prescribe measures for the control of dust and may prescribe steps that must be taken to prevent nuisance by dust. No such regulations have been prescribed yet.

The NEM:AQA also provides for the establishment of national standards for ambient air quality and the permissible amount or concentrations of each such substance in the air. National ambient air quality standards have already been prescribed.<sup>91</sup> In terms of the Regulations, national standards have been prescribed for, inter alia, the emission of nitrogen dioxide, and for particulate matter.

Section 23 of the NEM:AQA provides that the relevant authority may declare an appliance or activity as a controlled emitter. No such declarations have been made to date; however if such a declaration was made in the future it will trigger a duty on the part of the emitter to comply with standards setting the permissible amount, volume emission rate or concentration of any specified substance or mixture of substances.<sup>92</sup>

Crucially, in terms of section 21 of the NEM:AQA the relevant authority may promulgate a list of activities which result in atmospheric emissions which are reasonably believed to have a significant detrimental effect on the environment. No person may conduct an activity so listed without a provisional atmospheric emission licence.<sup>93</sup> A list of activities requiring an emissions licence has recently been promulgated.<sup>94</sup>

It is an offence to conduct a listed activity without an atmospheric emissions licence, or to contravene a provision of such licence.<sup>95</sup> Similarly, it is an offence to manufacture, sell or use any appliance or conduct declared as a controlled emitter in non-compliance with the standards established in terms of section 25.<sup>96</sup> Furthermore, it is an offence if the emissions from a controlled emitter do not comply with the standards for that controlled emitter or if a person performing a listed activity emits pollutants above the concentrations permitted in the licence.<sup>97</sup> A person convicted of these offences is liable to a fine or imprisonment of up to ten years or both.

The coming into force of section 60 of the NEM:AQA has recently repealed the Atmospheric Pollution Prevention Act, 1965, and the latter is therefore no longer applicable to the proposed project.<sup>98</sup>

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<sup>91</sup> GN R1210 in Government Gazette 320816 of 24 December 2009

<sup>92</sup> Section 24

<sup>93</sup> Section 22

<sup>94</sup> GN R248 of 31 March 2010, with an effective date from 1 April 2010

<sup>95</sup> Sections 51(1)(a) and 51(1)(e)

<sup>96</sup> Section 51(1)(a)

<sup>97</sup> Sections 51(2) and (3)

<sup>98</sup> GN R220 of 26 March 2010. APPA has been repealed with effect from 1 April 2010

### 6.4.3 National Water Act, 1998 (Act No. 36 of 1998)

The National Water Act, 1998 (Act No. 36 of 1998) (NWA) repealed and replaced many previous statutes dealing with water. Together with the Water Services Act,<sup>99</sup> South Africa now has a contemporary, holistic and cohesive body of statutory water law.

At the heart of the NWA is the fact that virtually all water use (there are some exceptions) falls under a uniform legal regime subject to the principle that the national government is the public trustee of the nation's water. The NWA abolished the common law historical distinction between public and private water (persons cannot in general own water), and all water use is subject to a system of licensing in common with many other countries.

The purpose of the NWA is to ensure that, in managing and controlling the nation's water resources, a number of factors are taken into consideration<sup>100</sup>. These include:

*“... meeting basic human needs for present and future generations; promoting equitable access to water; redressing the result of past racial and gender discrimination; promoting the efficient, sustainable and beneficial use of water in the public interest; facilitating social and economic development; providing for growing demands for water use; protecting aquatic and associated ecosystems and their biological diversity; reducing and preventing pollution and degradation of water resources; meeting international obligations; promoting dam safety and managing floods and droughts.”<sup>101</sup>*

The management and control of all water is subject to these overall purposes. More specifically, in issuing general authorisations and licences for use of water, the responsible authority must consider all relevant factors, including: existing lawful water uses, the need to redress past discrimination, socio-economic impacts of water use, applicable catchment management strategies, the effect of the water use on other users, including the environment, and the class and resource quality objectives of the water resource<sup>102</sup>.

Water licences issued under the NWA are not issued in perpetuity, but rather for a fixed period which may not exceed 40 years.<sup>103</sup> Provision is made for the periodic review of the licence at intervals which do not exceed five years during the 40-year or lesser period of the licence.<sup>104</sup> On review the licence conditions may be amended, but only on the following stipulated grounds: if it is necessary or desirable to prevent deterioration of the water resource;<sup>105</sup> if there is insufficient water in the water resource to accommodate all authorised water uses after allowing for the water Reserve and international obligations;<sup>106</sup> and if it is necessary or desirable to accommodate demands brought about by changed socio-economic circumstances.<sup>107</sup>

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<sup>99</sup> Act No. 108 of 1997

<sup>100</sup> Section 2(a)-(k)

<sup>101</sup> Preamble to the NWA

<sup>102</sup> Section 27(1)(a)-(k) of the NWA

<sup>103</sup> Section 28(1)(e) of the NWA

<sup>104</sup> Section 28(1)(f) of the NWA

<sup>105</sup> Section 49(2)(a) of the NWA

<sup>106</sup> Section 49(2)(b) of the NWA

<sup>107</sup> Section 49(2)(c) of the NWA.

#### 6.4.4 The Water Services Act, 1997 (Act No. 108 of 1997)

The Water Services Act, 1997 (WSA) establishes a legal structure to provide for the rights of access to basic water supply and basic sanitation while setting national norms and standards for tariffs; and promoting the establishment of a national information system or database.

In terms of water services institutions, the WSA aims to provide a regulatory framework and associated financial assistance mechanisms for water services institutions and water services intermediaries, provide for water services development plans while also setting structures in place to establish and disestablish water boards and water services committees, and their powers and duties. Furthermore, the WSA allows for the monitoring of water services and intervention by the Minister or by the relevant Provincial authority where necessary.

#### 6.4.5 The National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004)

The objectives of the National Environmental Management: Biodiversity Act, 2004 (NEM:BA) include:

- The management and conservation of biological diversity within the Republic of South Africa and the components of such biological diversity;
- The use of indigenous biological resources in a sustainable<sup>108</sup> manner;
- The fair and equitable sharing among stakeholders of benefits arising from bio-prospecting involving indigenous biological resources; and
- Giving effect to ratified international agreements relating to biodiversity, which are binding on the Republic.

The NEM:BA, amongst others, provides the framework for biodiversity management and planning. It provides (section 52) for the listing of threatened (critically endangered, endangered or vulnerable) and protected ecosystems (of high conservation value or of high national or provincial importance although not listed as threatened) and for activities or processes within those ecosystems to be listed as 'threatening processes', thus triggering the need to comply with the NEMA EIA regulations. The NEM:BA establishes the South African National Biodiversity Institute (SANBI), with a range of functions and powers (Chapter 2, Part 1). It also provides for the listing, control and eradication of invasive species (currently the responsibility of the Conservation of Agricultural Resources Act<sup>109</sup> (CARA)).

Section 8 of the NEM:BA provides as follows –

- "8. (1) In the event of any conflict between a section of this Act and -
- (a) *other national legislation in force immediately prior to the date of commencement of this Act, the section of this Act prevails if the conflict specifically concerns the management of biodiversity or indigenous biological resources;*
  - (b) *provincial legislation, the conflict must be resolved in terms of section 146 of the Constitution; and*
  - (c) *a municipal by-law, the section of this Act prevails.*
- (2) *In the event of any conflict between subordinate legislation issued in terms of this Act and -*

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<sup>108</sup> The term 'sustainable' in relation to biological resources is defined as 'sustainable' in relation to the use of a biological resource, means the use of such resource in a way and at a rate that

a) *would not lead to its long term decline*

b) *would not disrupt the ecological integrity of the ecosystem in which it occurs and*

c) *would ensure its continued use to meet the needs and aspirations of present and future generations of people*

<sup>109</sup> Act No. 43 of 1983

- (a) an Act of Parliament, the Act of Parliament prevails;
- (b) provincial legislation, the conflict must be resolved in terms of section 146 of the Constitution; and
- (c) a municipal by-law, the subordinate legislation issued in terms of this Act prevails

(3) For the proper application of subsection (2)(b) the Minister must, in terms of section 146(6) of the Constitution, submit all subordinate legislation issued in terms of this Act which affects provinces to the National Council of Provinces for approval.”

#### **6.4.6 National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003) (NEM:PAA)**

The objectives of the National Environmental Management: Protected Areas Act, 2003 (NEM:PAA) within the framework of the NEMA, include the protection and conservation of ecologically viable areas representative of South Africa’s biological diversity and its natural landscapes and seascapes in order to:

- Protect areas with significant natural features or biodiversity;
- Protect areas in need of long-term protection for the provision of environmental goods and services; and
- Provide for sustainable flow of natural products and services to meet the needs of a local community; involvement of private landowners.

The NEM:PAA provides for the involvement of parties other than organs of State in the declaration and management of protected areas.

#### **6.4.7 Sea-Shore Act, 1935 (Act No. 21 of 1935)**

The Sea-Shore Act declares the State President to be the owner of the sea-shore and the sea within South African territorial waters and as such, use of or encroachment onto the sea-shore requires permission granted in terms of an application for such use, as duly dictated by the State President or delegated representative department. The representative department has the power to not only grant rights to those wishing to utilise the sea-shore zone, but also to alienate or exclude portions of the sea-shore and the sea from any type of development or proposed use. As is the case at Koeberg with regards to the Koeberg exclusion zone / PAZ.

#### **6.4.8 The Maritime Zones Act, 1994 (Act No. 15 of 1994)**

The purpose of the Maritime Zones Act, 1994 (MZA) is to provide for the maritime zones of the Republic, and for matters connected therewith. It establishes various maritime zones, namely:

- baselines;
  - internal waters;
  - territorial waters;
  - the contiguous zone;
  - the maritime cultural zone;
  - the exclusive economic zone; and
  - the continental shelf.

The MZA stipulates that the Republic may take whatever measures are necessary in the sea (or the airspace above it) to protect the coastline from pollution or the threat of pollution.<sup>110</sup> Regarding offshore installations, the MZA stipulates that all the laws of the Republic, including the common law, apply to such installations.<sup>111</sup> This would include those laws applying to marine pollution.

#### **6.4.9 National Environmental Management: Integrated Coastal Management Act, 2008 (Act No. 24 of 2008)**

The National Environmental Management: Integrated Coastal Management Act, 2008 (NEM: ICMA) is the first legal instrument of its kind, in South Africa, dedicated to managing the coastline in an integrated fashion and ensuring the sustainable use of the coast's natural resources.

The objectives of the NEM: ICMA are to:

- Determine the coastal zone of the Republic;
- Provide within the framework of the NEMA, for the co-ordinated and integrated management of the coastal zone by all spheres of government in accordance with the principles of co-operative governance;
- Preserve, protect, extend and enhance the status of coastal public property as being held in trust by the State on behalf of all South Africans, including future generations;
- Secure equitable access to the opportunities and benefits of coastal public property; and
- Give effect to South Africa's obligations in terms of international law regarding coastal management and the marine environment<sup>112</sup>.

The NEM:ICMA was assented to on 11 February 2009, and certain sections of the Act became effective on 1 December 2009. The NEM:ICMA will be implemented in a phased approach. The following sections of the NEM:ICMA are scheduled to enter into force at a later stage, pending consultation between the Department of Environmental Affairs, the Department of Public Enterprises and Transnet, primarily related to technical aspects of how best to deal with leases and concessions within proclaimed port areas:

- Section 11: Ownership of coastal public property;
- Section 65: Award of leases and concessions on coastal public property;
- Section 66: Terms of coastal leases and coastal concessions;
- Section 95: Existing leases on, or rights to, coastal public property;
- Section 96: Unlawful structures on coastal public property; and
- Section 98: Repeal of legislation.

The NEM:ICMA will eventually repeal and replace both the Sea-shore Act and the Dumping at Sea Control Act<sup>113</sup>, once the section of the NEM:ICMA governing repeals becomes effective.

Section 16 of the NEM:ICMA defines the "Coastal Protected Zone". This zone includes, amongst others, the following:

- (b) any part of the littoral active zone that is not coastal public property;
- (c) any coastal protection area, or part of such area, which is not coastal public property;
- (d) any land unit situated wholly or partially within one kilometre of the high-water mark which, when this Act came into force—
  - (i) was zoned for agricultural or undetermined use; or

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<sup>110</sup> Section 10

<sup>111</sup> Section 9

<sup>112</sup> These include the obligations in terms of the 1982 United Nations Convention on the Law of the Sea (UNCLOS)

<sup>113</sup> Act No. 73 of 1980

- (ii) was not zoned and was not part of a lawfully established township, urban area or other human settlement;
- (e) any land unit not referred to in paragraph (d) that is situated wholly or partially within 100 metres of the high-water mark;
- (f) any coastal wetland, lake, lagoon or dam which is situated wholly or partially within a land unit referred to in paragraph (d)(i) or (e)
- (g) any part of the seashore which is not coastal public property, including all privately owned land below the high-water mark;
- (h) any admiralty reserve which is not coastal public property; or
- (i) any land that would be inundated by a 1:50 year flood or storm event.

Section 16(d)(i) would affect the Thyspunt site, which is zoned as “Agricultural Zone 1”. The Duynefontein site would not be affected as it is zoned “Rural”.

**Section 69(6)(c) determines that a person who discharges effluent in coastal waters “must discharge effluent subject to any condition contained in the relevant authorisation” and section 69(6)(d) determines that a person who discharges effluent into coastal waters “must comply with any applicable waste standards or water management practices prescribed under this Act or under section 29 of the National Water Act or any Act of Parliament specifically dealing with waste, unless the conditions of the relevant authorisation provide otherwise”.** Section 69 will be affected as spoil might be hydraulically pumped offshore, where it will be discarded into the sea (according to the marine biologist, discarding of a small portion of spoil that would affect only 3 km<sup>2</sup> is permissible at the sites, since movement patterns in the sea would allow for sufficient dilution of the spoil, provided that the recommended depth of disposal and pumping rates are adhered to (Appendix E16)). The discharge of effluent originating from a source on land into coastal waters (which includes internal waters, territorial waters and estuaries) without an authorisation or permit in contravention of section 69. **Therefore a Coastal Water Discharge Permit in terms of section 69 will be required. A permit in terms of Section 71 may also be required due to the dumping of spoil material at sea.**

The NEM:ICMA expressly refers to the anticipated rise in sea-level by establishing a coastal buffer zone inland of the high-water mark, within which activities will be controlled and certain activities will be prohibited.<sup>114</sup> A further measure implemented by the NEM:ICMA to respond to sea-level rise, is the establishment of so-called coastal set-back lines.<sup>115</sup> Set-back lines are to be established in order to prohibit or restrict the building, erection, alteration or extension of structures that are wholly or partially towards the seaward side of such a coastal set-back line. These measures provide government with the power to prevent development that is too close to the sea-shore and will therefore mitigate the effects of possible sea-level rise.

The NEM:ICMA further contains a provision regarding possible changes in the position of the high-water mark. It states that if the high-water mark moves inland due to erosion of the coast, sea-level rise or other natural causes, the owner of land situated inland of the high-water mark loses ownership of any portion of that land that becomes situated below the high-water mark and will not be entitled to compensation for the loss of property.<sup>116</sup>

Section 6(1) of the NEM:ICMA states that, in the event of there being conflict between a section of the Act and other national legislation, the section of the Act will prevail, if the conflict concerns coastal zone management.

Section 6(2) of the NEM:ICMA further states that a provision of either the Act or NEMA (or any regulation made under the NEM:ICMA or NEMA) will prevail over any provision of any Act that was not repealed in terms of the provisions of the Act.

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<sup>114</sup> Section 16 of the NEM: CMA

<sup>115</sup> Section 25 of the NEM: CMA

<sup>116</sup> Section 14 of the NEM: CMA



#### 6.4.10 Marine Living Resources Act, 1998 (Act No. 18 of 1998)

The purpose of the Marine Living Resources Act, 1998 (MLRA) is to provide for the conservation of the marine ecosystem, the long-term sustainable utilisation of marine living resources and the orderly access to exploitation, utilisation and protection of certain marine living resources; and for these purposes to provide for the exercise of control over marine living resources in a fair and equitable manner to the benefit of all the citizens of South Africa; and to provide for matters connected therewith.

Section 43 of the MLRA provides for the declaration of marine protected areas. Certain actions, such as fishing, taking of any resources, fauna and flora other than fish, dredging, extraction of gravel or sand, disturbance or alternation of the natural environment and construction of buildings are prohibited in such areas.

#### 6.4.11 National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) (NEM: Waste Act)

The National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) [NEM: Waste Act] became fully effective in July 2009<sup>117</sup>. The purpose of the NEM: Waste Act includes reforming the law regulating waste management in South Africa by providing measures aimed at achieving constitutional imperatives, like the prevention of pollution and ecological degradation and securing ecologically sustainable development.

In the NEM: Waste Act, the best practices relating to waste management are entrenched and consolidated into law by replacing the "end of pipe" approach with a more environmentally responsible and sustainable approach. The latter includes an introduction of a general duty in respect of waste management, among others, which requires a holder of waste to take measures:

- to avoid the generation of waste and where such generation cannot be avoided, to minimise the toxicity and amounts of waste that are generated;
- to reduce, re-use, recycle and recover waste;
- to ensure that waste is treated and disposed of in an environmentally sound manner;
- to manage the waste in such a manner that it does not endanger health or the environment or cause a nuisance through noise, odour or visual impact;
- to prevent any employee or any person under his or her supervision from contravening this Act; and
- to prevent waste from being used for an unauthorised purpose.

This NEM: Waste Act does **not** apply to:

- Radioactive waste that is regulated by the Hazardous Substance Act, 1973 (Act No. 15 of 1973), the National Nuclear Regulator Act, 1999 (Act No. 47 of 1999), and the Nuclear Energy Act, 1999 (Act No. 46 of 1999); or
- Residue deposits and residue stockpiles that are regulated under the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002)<sup>118</sup>.

The Waste Act came into operation (with the exception of sections 28(7)(a), Part 8 of the Waste Act (sections 35-41) and section 46) on 1 July 2009.<sup>119</sup> In accordance with the provisions of the Waste Act<sup>120</sup>, the Minister of Water and Environmental Affairs published a list

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<sup>117</sup> When the schedule to the Act listing waste management activities that require a licence was published

<sup>118</sup> Applicable provisions in NEM: Waste Act

<sup>119</sup> Proclamation Number 34 of 2009 published on 30 April 2009 in Government Gazette No. 32189

<sup>120</sup> Section 19(1)

of waste management activities<sup>121</sup> that have or are likely to have a detrimental effect on the environment and for which a waste management licence may be required, or certain standards are to be met before a person may commence with such activities.

Waste management licences can only be issued after the process of basic assessment (in relation to activities listed in Category A), or after the process of scoping and EIA (in respect of Category B activities). Category A activities include: the storage of waste; recycling and recovery; treatment of waste; disposal of waste on land; and construction, expansion or decommissioning of facilities and associated structures and infrastructure. Under these general heads, different waste-related activities are described in further detail. Activities in Category B are similar in nature with different thresholds and volumes specified. Additionally Category C listed activities relate to the storage, recycling and recovery of waste with thresholds lower than that of Category A or B. In terms of this Category, an applicant must comply with norms and standards and does not have to undertake a basic assessment or scoping and EIA process.

It is an offence to contravene or fail to comply with section 20 of the Waste Act or to contravene or fail to comply with a waste management licence.<sup>122</sup> A person convicted of any of these offences is liable to a fine not exceeding R10 million or to imprisonment of up to 10 years, or both.<sup>123</sup>

As regards the treatment, processing and disposal of waste, Part 6 of the Act prohibits unauthorised disposal of waste in the following terms: “No person may (a) dispose of waste, or knowingly or negligently cause or permit waste to be disposed of, in or on any land, waterbody (sic) or at any facility unless the disposal of that waste is authorised by law; or (b) dispose of waste in a manner that is likely to cause pollution of the environment or harm to health and well-being.” There are however certain exceptions to the prohibition.<sup>124</sup>

Due to the associated components of the Nuclear Power Station, a waste management licence may be required.

#### **6.4.12 National Radioactive Waste Disposal Institute Act (Act 53 of 2008)**

The National Radioactive Waste Disposal Institute Act (“NRWDIA”) came into operation on 1 December 2009 and provides for the establishment of the National Radioactive Waste Disposal Institute (“the Institute”) in order to manage radioactive waste disposal. In this regard, radioactive waste includes any radioactive material (whether natural or artificial) which contains unstable atomic nuclei and which is destined for disposal. The Institute’s board of directors was officially appointed by the Minister of the DoE in January 2014.

The purpose and functions of the Institute are detailed in section 5 of the NRWDIA and includes, amongst others, the following activities:

- “(b) design and implement disposal solutions for all classes of radioactive waste;
- (c) develop radioactive waste acceptance and disposal criteria in compliance with applicable regulatory health safety environmental requirement and any other technical and operational requirements;
- (d) assess and inspect the acceptability of radioactive waste for disposal and issue radioactive waste disposal certificates;
- (e) manage, operate and monitor operational radioactive waste disposal facilities, including related storage and predisposal management of radioactive waste at disposal sites; and
- (f) manage and monitor closed radioactive waste disposal facilities.”

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<sup>121</sup> GN R921 in Government Gazette 37083 of 29 November 2013

<sup>122</sup> Section 67(1)(a) and (h)

<sup>123</sup> Section 68(1)

<sup>124</sup> Contained in section 26(2)

Chapter 3 of the NRWDIA regulates the application process for the disposal of radioactive waste. Section 23 therein requires that any person who wishes to dispose of radioactive waste apply to the Chief Executive Officer of the Institute in the prescribed format and furnish such information as the Institute's board may require<sup>125</sup> which will be assessed for compliance against the radioactive waste acceptance and disposal criteria contemplated in section 5(c) of the NRWDIA. The Chief Executive Officer may either refuse the application or grant such application subject to certain conditions in terms of section 24 of the NRWDIA.

Section 25 of the NRWDIA relates to generators of radioactive waste and stipulates that such parties are responsible for the technical, financial and administrative management of such waste at their premises and when such waste is transported to an authorised waste disposal facility. The generators of such waste are further required to:

- “(a) develop and implement site-specific waste management plans based on national policy;
- (b) provide all relevant information on radioactive waste as required by the Chief Executive Officer;
- (c) demonstrate compliance with any conditions of a radioactive waste disposal certificate; and
- (d) provide site access to staff of the Institute for inspection against any conditions of the radioactive waste disposal certificate.”<sup>126</sup>

Furthermore, in terms of section 25(3) of the NRWDIA the “generators of radioactive waste remain responsible for all liabilities in connection with such radioactive waste under their control until such time as the radioactive waste had been received and accepted in writing by the Institute, following an inspection, at which time liability shall pass to the Institute.”

#### **6.4.13 Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983)**

The purpose of the Conservation of Agricultural Resources Act, 1983 (CARA) is to provide for control over the utilisation of natural agricultural resources in order to promote the conservation of soil, efficient use of water resources and protection of ecosystems while combating the infestation of weeds and invader plants.

Furthermore the clearing of listed invasive alien vegetation is the legal duty of all landowners, in terms of the CARA (as amended). In this respect, management of alien vegetation should theoretically take place even without the development of one or more nuclear power stations at the proposed sites. In the case of Koeberg, management of the Nature Reserve has centred on the removal of alien vegetation. The site chosen for the proposed power plant will thus have active management of invasive alien vegetation. In addition, the protection of ecologically meaningful extent of natural areas from piecemeal development and edge impacts will be achieved.

#### **6.4.14 National Heritage Resources Act, 1999 (Act No. 25 of 1999)**

The National Heritage Resources Act, 1999 (NHRA) aims to introduce an integrated and interactive system for the management of the national heritage resources and promote good governance at all levels. By doing this the NHRA endeavours to empower civil society to nurture and conserve their heritage resources so that they may be bequeathed to future generations.

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<sup>125</sup> Section 23(1)

<sup>126</sup> Section 25(2)

The NHRA lays down general principles for governing heritage resources management throughout the Republic and introduces an integrated system for the identification, assessment and management of the heritage resources of South Africa. The NHRA also provides for the setting of norms and maintenance of essential national standards for the management of heritage resources in the Republic with the intention of protecting heritage resources of national significance.

The South African Heritage Resources Agency is also established under the NHRA together with its Council to co-ordinate and promote the management of heritage resources at national level. Within this framework, the provincial heritage authorities are created which must adopt powers to protect and manage certain categories of heritage resources, and local authorities are given responsibility to protect and manage conservation-worthy places and areas. The NHRA also aims to control the export of nationally significant heritage objects and the import into South Africa of cultural property illegally exported from foreign countries.

The proposed nuclear facilities envisaged by Eskom (and associated infrastructure) comprise certain activities which require authorisation in terms of Section 38(1) of the NHRA and would usually require an application to the relevant regional authority. However, Section 38(8) of the NHRA provides that if heritage considerations are taken into account and assessed as part of the EIA process, a separate application to the authority ordinarily responsible for assessing an application in terms of Section 38 is not required.

#### **6.4.15 Hazardous Substances Act, 1973 (Act No. 15 of 1973)**

The Hazardous Substances Act, 1973 provides measures for the control of substances and certain electronic products which may be toxic, corrosive, irritant, strongly sensitizing or flammable in nature which may cause injury or ill-health to or death of humans.

This Act divides the substances or products into groups in relation to the degree of danger and makes provision for the prohibition and control of the importation, manufacture, sale, use, operation, application, modification, disposal or dumping of such substances and products.

#### **6.4.16 Transportation of Dangerous Goods and Substances<sup>127</sup>**

Chapter VIII of the National Road Traffic Regulations promulgated under the National Road Traffic Act, 1996 (Act No. 93 of 1996) provides clarity on the obligations related to the transportation of dangerous goods and substances by road.

As all the raw materials and waste materials (hazardous and non-hazardous) will be transported to and from the site by road, the nuclear power station is obliged to comply with the laws governing such transportation.

#### **6.4.17 Non-Proliferation of Weapons of Mass Destruction Act, 1993 (Act No. 87 of 1993)**

Non-Proliferation of Weapons of Mass Destruction Act, 1993 aims to establish measures to control weapons of mass destruction and establish a Council to regulate matters relating to the proliferation of such weapons in South Africa. This Act determines the objectives and functions of the Council and prescribes the manner in which it is managed and controlled.

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<sup>127</sup> GNR 103 of 12 October 2001.

#### 6.4.18 National Key Points Act, 1980 (Act No. 102 of 1980)

In terms of the National Key Points Act, 1980 (NKPA), a “National Key Point” is any place or area that has been so declared under section 2 of this Act, if it appears at any time that any place or area is so important that its loss, damage, disruption or immobilisation may prejudice the Republic, or whenever the Minister considers it necessary or expedient for the safety of the Republic or in the public interest he may declare that place or area a National Key Point.

The NKPA places certain duties on the owner of such a Key Point, and requires the owner to take steps at his/her own expense to the satisfaction of the Minister in respect of the security of the said Key Point.<sup>128</sup> If the said owner without reasonable cause refuses or fails to take the steps specified, he/she shall be guilty of an offence and liable on conviction to a fine not exceeding R20 000.00 or to imprisonment for a period not exceeding 5 years or to both such fine and such imprisonment.

#### 6.4.19 National Energy Act, 2008 (Act No. 34 of 2008)

One of the aims of the National Energy Act, 1999 (“NE Act”) is to “ensure that diverse energy resources are available, in sustainable quantities and at affordable prices, to the South African economy in support of economic growth and poverty alleviation, taking into account environmental management requirements and interactions amongst economic sectors.”<sup>129</sup>

The Minister of Energy is thus required to establish mechanisms to ensure the provision of data and access to data sources required for energy planning<sup>130</sup>; and to adopt measures to minimise negative safety, health and environmental impacts of energy carriers<sup>131</sup>; as well as measures that provide for access by households to appropriate forms of energy or energy services at affordable prices.<sup>132</sup>

Chapter 3 of the NE Act deals with Integrated Energy Planning and section 6 therein requires the Minister of Energy to develop, review and publish the Integrated Energy Plan which must deal with the following issues relating to the supply, transformation, transport, storage of and demand for energy:

- “(6)(2) (a) security of supply;  
(b) economically available energy resources;  
(c) affordability;  
(d) universal accessibility and free basic electricity;  
(e) social equity;  
(f) employment;  
(g) environment;  
(h) international commitments;  
(i) consumer protection; and  
(j) contribution of energy supply to socio-economic development.”

The Integrated Energy Plan must “(a) serve as a guide for energy infrastructure investments; (b) take into account all viable energy supply options; and (c) guide the selection of the appropriate technology to meet energy demand” in accordance with section 6(6) of the NE Act.

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<sup>128</sup> Section 3(1).

<sup>129</sup> Long title of the NE Act

<sup>130</sup> Section 3

<sup>131</sup> Section 4

<sup>132</sup> Section 5

The NE Act also gives rise to the establishment of the South African National Energy Development Institute<sup>133</sup>, which functions in respect of “energy efficiency and energy research and development.”<sup>134</sup>

Although the whole of the NE Act has not yet commenced, certain sections pertaining to the security of supply and general provisions came into operation on 1 April 2009.<sup>135</sup> The sections that have come into operation at this stage are sections 17 to 19.

In terms of section 17 of the NE Act, the Minister of Energy may “for the purposes of ensuring security of supply, direct any state-owned entity to acquire, maintain, monitor and manage national strategic energy feedstocks and carriers.” In terms of section 1 of the NE Act, ‘energy feedstocks’ are defined as “any substance used or that can be used as a raw material in an industrial energy producing process” whilst an ‘energy carrier’ is defined as “a substance or system that moves or carries energy in a usable form from one place to another.”

The Minister of Energy may in accordance with the provisions of the NE Act, in order to secure the supply of electricity, direct state-owned entities to:

- “(a) undertake security of supply measures;
- (b) provide for adequate investment in energy infrastructure;
- (c) invest in critical energy infrastructure; and
- (d) ensure upkeep of all critical energy infrastructure.”<sup>136</sup>

Furthermore, the Minister of Energy is empowered in terms of section 19 of the NE Act to make regulations relating to amongst others the standards and specifications for energy carriers<sup>137</sup>; holding of strategic energy feedstocks and carriers<sup>138</sup>; measures to ensure adequate provision of energy-related infrastructure<sup>139</sup>; measures to ensure operating reliability of all key energy infrastructure<sup>140</sup>; measures to promote security of supply through access to common infrastructure by any party<sup>141</sup>; the prohibition of disposal methods or certain fuels or post-combustion residues<sup>142</sup>; as well as the safe, healthy and sustainable use of energy, standards and specifications.<sup>143</sup>

#### **6.4.20 National Energy Regulator Act, 2004 (Act 40 of 2004)**

The National Energy Regulator Act (NERA) came into operation on 15 September 2005 and seeks to “establish a single regulator to regulate the electricity, piped-gas and petroleum pipeline industries.”<sup>144</sup>

The functions of the National Energy Regulator, which are detailed in section 4 of the NERA, include undertaking the functions of the Gas Regulator as set out in the Gas Act<sup>145</sup>; the

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<sup>133</sup> Section 7

<sup>134</sup> Section 7(2)

<sup>135</sup> Proclamation Notice No. R.19 published in Government Gazette 32082 of 1 April 2009

<sup>136</sup> Section 18

<sup>137</sup> Section 19(1)(k)

<sup>138</sup> Section 19(1)(m)

<sup>139</sup> Section 19(1)(o)

<sup>140</sup> Section 19(1)(p)

<sup>141</sup> Section 19(1)(q)

<sup>142</sup> Section 19(1)(r)

<sup>143</sup> Section 19(1)(s)

<sup>144</sup> Long title of the NERA

<sup>145</sup> Act 48 of 2001

Petroleum Pipelines Regulatory Authority as set out in the Petroleum Pipelines Act<sup>146</sup>, as well as the functions set out in the Electricity Regulation Act<sup>147</sup>.

#### 6.4.21 Nuclear Energy Act, 1999 (Act No. 46 of 1999)

The Nuclear Energy Act, 1999 partially repealed the Nuclear Energy Act of 1993, but the regulations made and actions performed under the 1993 Act remains in force and are treated as having been done under the corresponding provision of the 1999 Act.

The Nuclear Energy Act, 1999 establishes the South African Nuclear Energy Corporation Limited (the "Corporation"), a public company wholly owned by the State, and defines the Corporation's functions and powers, and its financial and operational accountability. The Corporation is a juristic person.<sup>148</sup> The Corporation is wholly state-owned and the state's rights as member and shareholder of the Corporation are to be exercised by the Minister of Energy.<sup>149</sup>

The Corporation's main functions are set out in the Nuclear Energy Act, 1999. They include the following:

- To undertake and promote research and development in the field of nuclear energy and radiation sciences and technology and, subject to the Safeguards Agreement, to make these generally available;
- to process source material, special nuclear material and restricted material and to reprocess and enrich source material and nuclear material; and
- to co-operate with any person or institution in matters falling within these functions subject to the approval of the Minister.<sup>150</sup>

The other objectives of the Nuclear Energy Act, 1999 are to make provision for responsibilities for the implementation and application of the Safeguards Agreement which relates to South Africa's obligations under the Nuclear Non-Proliferation Treaty; to regulate nuclear fuel, nuclear and related material and equipment; to prescribe measures regarding discarding radioactive waste and storage of irradiated nuclear fuel; and various other matters.<sup>151</sup> The approval of the Minister of Energy is required under section 34(1)(m) to produce nuclear electricity. The acquisition, use and disposal of source material and restricted material also requires approval of the Minister of Energy under section 31(1).

A limitation on the ordinary rules that apply both to administrative action and to court proceedings (and arbitration proceedings) arising from Nuclear Energy Act, 1999 is found in section 52 of the Nuclear Energy Act, 1999. It provides that either a court of law or an arbitration tribunal which is seized of a matter arising from the application or administration of the Nuclear Energy Act, 1999 may direct that the proceedings before it be held in camera in the event that the interest of the Republic's security so require. For that purpose, the court or tribunal concerned must assess the matters raised and the evidence, statements and addresses that have been made or may be tendered, made or given in the proceedings concerned, as well as other developments in the proceedings, on an on-going basis for potential danger or harm to the security of the Republic.

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<sup>146</sup> Act 60 of 2003

<sup>147</sup> Act 4 of 2006

<sup>148</sup> Section 3(1) of the Nuclear Energy Act

<sup>149</sup> Section 4(1) of the Act read with section 4(a)

<sup>150</sup> Section 13

<sup>151</sup> See the preamble to the Act

A limitation on disclosure of the Minister's reasons for decisions adversely affecting persons is permissible where the security of the Republic is involved. That limitation amounts to the entitlement by the Minister not to disclose reasons.<sup>152</sup>

The limitation on disclosure of reasons does not preclude any High Court from enquiring into and deciding on the validity of any non-disclosure purporting to be justified in terms of section 51(1) of the Nuclear Energy Act, 1999. Such court may at any time, either on application by the Minister, or of its own accord, order that the proceedings before it be conducted in camera if the interests of State security so require.

A myriad of ancillary powers and functions on the part of the Corporation are also set out in the Nuclear Energy Act, 1999.<sup>153</sup> These may be undertaken by the Corporation, as long as they are done so in connection with its main functions.

The Nuclear Energy Act, 1999 designates responsibilities for the implementation and application of the Safeguards Agreement and any additional protocols entered into by South Africa and the International Atomic Energy Agency in support of the Nuclear Non-Proliferation Treaty.

Furthermore, the regulation of the acquisition and possession of nuclear fuel, certain nuclear and related materials and equipment, are required to be properly documented. The import and export of these materials, and associated activities are also required to be documented in order to ensure compliance with the international obligations of South Africa.

#### **6.4.22 National Nuclear Regulator Act, 1999 (Act No. 47 of 1999)**

Section 3 of the National Nuclear Regulator Act, 1999 (NNRA) establishes the National Nuclear Regulator. In terms of section 5(a) to 5(f) of the NNRA, the objects of the Regulator are, amongst others, to provide for the protection of persons, property and the environment against nuclear damage through the establishment of safety standards and regulatory practices and to ensure that the provisions for nuclear emergency planning are in place.

The NNRA defines a 'nuclear installation' to include 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 –

- a uranium or thorium refinement or conversion facility;
- a uranium enrichment facility;
- a nuclear fuel fabrication facility;
- a nuclear reactor, including a nuclear fission reactor or any other facility intended to create nuclear fusion;
- a spent nuclear fuel reprocessing facility;
- a spent nuclear fuel storage facility;
- an enriched uranium processing and storage facility; and
- 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) of the Act."

Nuclear installation licences are those referred to in section 21(1) of the Nuclear Energy Act, 1999. The process of applying for a licence to site, construct, operate, decontaminate or decommission a nuclear installation may be made by any person, who (or which)<sup>154</sup> may apply

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<sup>152</sup> Section 51(1) of the Act

<sup>153</sup> Specifically in section 14(1)(a) to (u)

<sup>154</sup> In the case of a juristic person



in the prescribed format to the Chief Executive Officer of the National Nuclear Regulator. That person "...must furnish such information as the board requires."

Regarding the transparency of the process, the Chief Executive Officer is obliged, by virtue of the provisions of section 21(3) to direct the applicant for a nuclear installation licence to:

- Serve a copy of the application upon (i) every municipality affected by the application; and (ii) any other body or person as the Chief Executive Officer determines; and
- to publish a copy of the application in the *Government Gazette* and two newspapers circulating in the area of every such municipality.

Regarding responses to the initiation of that process and the licensing process itself, the NNRA prescribes the entitlement of any person "who may be directly affected by the granting of a nuclear installation licence pursuant to an application in terms of section 21" to make representations to the board, relating to health, safety and environmental issues connected with the application, within a prescribed period of the publication of the application.<sup>155</sup> The board, if it is of the opinion that further public debate is necessary, may arrange for such further hearings on health, safety and environmental issues as it determines.

The Chief Executive Officer's powers to either refuse or grant a nuclear installation licence is subject to the board's approval, and the grant of a licence must be on such conditions as the Chief Executive Officer and the board may determine in terms of section 23 of the National Nuclear Regulator Act.

The National Nuclear Regulator Act also provides for an internal administrative appeal against the decisions of the Chief Executive Officer which appeal must be lodged with the board of the regulator in terms of procedural stipulations and in regard to its substantive content.<sup>156</sup> The appeal must be lodged within 60 days of the date on which the decision was made known by the Chief Executive Officer or such later date as the board allows and must in addition set out the grounds of appeal.

Regarding the appeal grounds, and the Chief Executive Officer's reasons for the decision, the board must "as soon as practicable" utilise its (wide) powers of appeal and either confirm, set aside or vary the decision, or substitute any other decision for the decision of the Chief Executive Officer.

The right of appeal lies with the Minister (of Energy) against any decision that the board might make on appeal. Again, procedural and substantive requirements for such an appeal are set out. In the event that a party remains aggrieved by the Minister's decision, that person may appeal against that decision to the High Court of South Africa.

In terms of the National Nuclear Regulator Act, the Chief Executive Officer of the Regulator (as well as its board and in the context of appeals against the board's decision, the Minister of Minerals and Energy), have specific powers and functions. The Regulator's objects are recorded in section 5 of the Act as follows:

- “(a) *To provide for the protection of persons, property and the environment against nuclear damage through the establishment of safety standards and regulatory practices;*
- “(b) *To exercise regulatory control related to safety over -*
  - “(i) *the siting, design, construction, operation, manufacture of component parts, and decontamination, decommissioning and closure of nuclear installation; and*

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<sup>155</sup> Within 30 days of the date of publication in the *Government Gazette* in terms of which the application is published.

<sup>156</sup> Section 44(2) of the Act sets out the procedure.

- (ii) *vessels propelled by nuclear power or having radioactive material on board which is capable of causing nuclear damage, through the granting nuclear authorisation;*
- (c) *To exercise regulatory control over other actions, to which the National Nuclear Regulator Act applies, through the granting of nuclear authorisations;*
- (d) *To provide assurance of compliance with the conditions of nuclear authorisations through the implementation of a system of compliance inspection;*
- (e) *To fulfill national obligations in respect of international legal instruments concerning nuclear safety; and*
- (f) *To ensure that provisions for nuclear emergency planning are in place.”*

The National Nuclear Regulator Act therefore applies principally to the following activities:

- The siting, design, construction, operation, decontamination, decommissioning and closure of any nuclear installation;
- vessels propelled by nuclear power or having radioactive material on board which is capable of causing nuclear damage; and
- Any action which is capable of causing nuclear damage.<sup>157</sup>

The functions of the Regulator<sup>158</sup>, control and management of the Regulator’s affairs<sup>159</sup> and the rights, obligations and responsibilities of the Regulator’s board<sup>160</sup>, are all stipulated in the NNRA. In addition, the appointment and functions of the Chief Executive Officer are set out as well as the staff of the Regulator and its funding.<sup>161</sup>

In addition to a primary function involving the consideration and issue of licences for nuclear installations, the Regulator has a myriad of other functions set out in the NNRA, including powers regarding security of property and premises<sup>162</sup>, appointment and power of inspectors<sup>163</sup> and various other responsibilities.

The Minister’s powers (in addition to considering appeals against decisions made by the board of the Regulator) include the entitlement to make regulations after consultation with the board and by notice in the Government Gazette “as to any matter (a) required or permitted to be prescribed in terms of this Act; and/or (b) necessary for the effective administration of the Act.”<sup>164</sup>

A myriad of subordinate legislation (in the form of regulations) has been promulgated under the National Nuclear Regulator Act. They include the categorisation of the various nuclear installations in the Republic<sup>165</sup>; the annual report related to nuclear installation sites<sup>166</sup>; the development surrounding any nuclear installation to ensure the effective implementation of any nuclear emergency plan<sup>167</sup> (analysed below in the context of a recent High Court application regarding their legality); the format for the application for a nuclear installation licence or certificate of registration<sup>168</sup>; and the regulations in terms of section 36, read with section 47 of the NNRA on safety standards and regulatory practices<sup>169</sup>.

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<sup>157</sup> Section 2(1) of the Act

<sup>158</sup> Section 7

<sup>159</sup> Section 8

<sup>160</sup> Sections 9 and 15 of the Act

<sup>161</sup> Respectively sections 15 to 17

<sup>162</sup> Section 42

<sup>163</sup> Section 41

<sup>164</sup> Section 47

<sup>165</sup> In Government Notice R581 in *Government Gazette* 26327 of 7 May 2004

<sup>166</sup> In GN 716 in *Government Gazette* 29050 of 28 July 2006

<sup>167</sup> In GN 287 in *Government Gazette* 26121 of 5 March 2004

<sup>168</sup> In GN R479 in *Government Gazette* 21171 of 12 May 2000.

<sup>169</sup> In Government Notice R388 in *Government Gazette* 28755 dated 28 April 2006.

In September 2008<sup>170</sup> the Minister of Minerals and Energy, in terms of section 47 read with section 26(4) of the NNRA, after consultation with the Board of Directors of the National Nuclear Regulator, made the regulations in the Schedule to the Notice. The regulations relate to the establishment of a Public Safety Information Forum by the holder of a Nuclear Installation Licence to inform the persons living in the Municipal Area in respect of which an emergency plan has been established.

A holder of a nuclear installation license must<sup>171</sup>:

- (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.*

Section 4 (5) of the regulations states that 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.*

Annexure 3 of Government Notice No. R 388 of 2006 prescribes standards for the safe handling of radioactive materials. This would be applicable to employees working at nuclear power station, as well as to the transport of radioactive materials (e.g. the transport of Intermediate and Low-Level Waste to Vaalputs and the transport of nuclear fuel to the power station).

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

For occupational exposure, the following limits may not be exceeded:

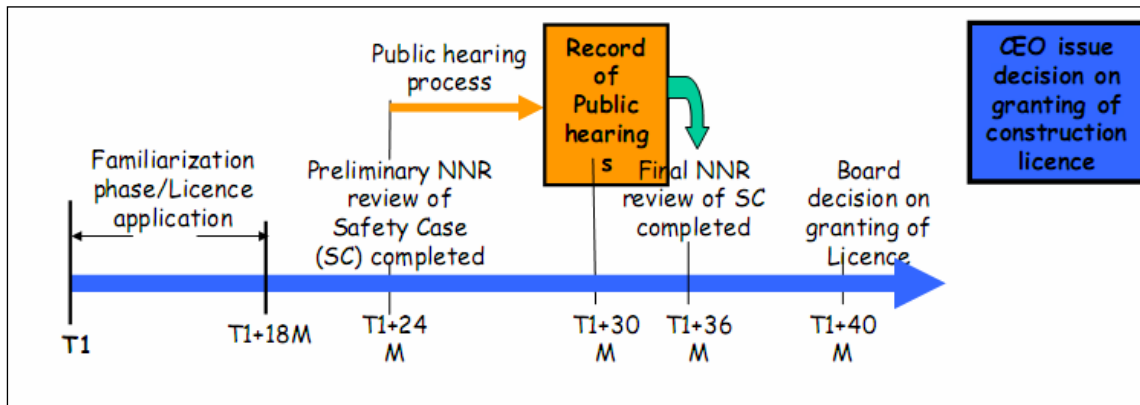
- An (average) effective dose of 20 mSv per year averaged over 5 consecutive years;
- A (maximum) effective dose of 50 mSv in any single year;
- An equivalent dose to the lens of the eye of 150 mSv in a year, and
- An equivalent dose to the extremities (hands and feet) or the skin of 500 mSv per year.

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<sup>170</sup> In Government Notice No. 968 of Government Gazette No. 31403 of 12 September 2008.

<sup>171</sup> Section 3.

The process of applying for a nuclear installation licence is indicated in **Figure 6-3**. As indicated in this figure, the complete licensing process, from initial application to the granting of a license, takes approximately 40 months (3 years and 4 months).



**Figure 6-3: NNR nuclear installation licensing time frames (NNR 2010)**

#### 6.4.23 Regulations on the development surrounding any nuclear installation to ensure the effective implementation of any Nuclear Emergency Plan

Government Notice No. 287 of March 2004 as published in terms of Government Gazette No. 26121 provided for Regulations made by the Minister, on the development surrounding any nuclear installation to ensure the effective implementation of any nuclear emergency plan.

These Regulations were the subject of a judgment of the Cape Provincial Division of the High Court of South Africa<sup>172</sup> in *D J MacDonald and 2 Others v. Minister of Minerals and Energy and Four Others*<sup>173</sup>. The application before the Court concerned the legality of the regulatory framework restricting the development of property located within a radius of five kilometres of the Koeberg Nuclear Power Station. In MacDonald's case, the Court considered the process that was adopted in the preparation and promulgation of the Regulations and for various reasons issued an order to the effect that Regulation 3 of the Regulations was declared to be inconsistent with the National Nuclear Regulator Act and accordingly, invalid. In addition, the court found that the so-called 'NNR Requirements on the Control and Monitoring of Developments in the Formal Emergency Planning Zone of Koeberg Nuclear Power Station (RD-0015)' made by the National Nuclear Regulator and dated 17 June 2005 were inconsistent with the National Nuclear Regulator Act and accordingly invalidated by the court order. The Court also directed that Regulation 3 of the Regulations be remitted to the Minister and the National Nuclear Regulator for reconsideration, in light of the Court's judgment.

In terms of section 38(2) of the NNRA, the Regulator must ensure that the emergency plan established, in terms of section 38(1), by agreement between the holder of the nuclear authorisation and the relevant municipalities and provincial authorities, is effective for the protection of persons and the environment.

Section 38(4) of the NNRA deals with the development surrounding a nuclear installation and provides that the Minister may, on recommendation of the Board of the Regulator and in consultation with the relevant municipalities, make regulations on the development

<sup>172</sup> Per Mr. Justice Griesel.

<sup>173</sup> Unreported case under Case no. 3626/2006 in the Cape of Good Hope Provincial Division of the High Court of South Africa, with judgment handed down on 12 June 2007.

surrounding any nuclear installation to ensure the effective implementation of any applicable emergency plan.

- Subsequent to this court action, Regulations on licensing of Sites for Nuclear Installations) was enacted, GG 34375 of 11 November 2011, GN No. R. 927 which in 5(7) provides for *the identification and determination of emergency planning zones using the characteristics of the site, source term analysis and Probabilistic Risk Analysis (PRA) established in accordance to Regulations 5(3), 5(4) and 5(5) respectively*. It goes on to state that the emergency planning zone must include the following In paragraphs 5(7)(a), the regulations that *an exclusion zone which is a radius determined for the purpose 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 institution which are not directly linked to the operation of nuclear installations situated within the zone, or for which an authorisation has not been granted.*
- Paragraphs 5(7)(b), the regulations states that *an overall Emergency Planning zone (EPZ) of such size that emergency or remedial measures must be considered where the potential exist that any member of the public may receive more than an annual effective dose of 1 mSv due to the source term*
- Paragraph 5(7)(c) of the regulation states *that a long term Protective Action 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.*

#### **6.4.24 Electricity Act, 1987 (Act No. 41 of 1987)**

The whole of the Electricity Act, 1987, with the exception of section 5B, was repealed by section 48(1) of the Electricity Regulation Act. Section 5B deals with the funds of the regulator and matters related thereto. The Electricity Act, 1987 has been amended and will be replaced by The Electricity Act of 2004 once promulgated.

#### **6.4.25 Electricity Regulation Act, 2006 (Act No. 4 of 2006)**

The Electricity Regulation Act, 2006 commenced on 1 August 2006 and establishes a national regulatory framework for the electricity supply industry, and makes the National Energy Regulator the custodian and enforcer of the national electricity regulatory framework. The Electricity Regulation Act also provides for licences and registration as to the manner in which generation, transmission, distribution, trading and the import and export of electricity are regulated.

The National Energy Regulator (which is established by section 3 of the National Energy Regulator Act)<sup>174</sup> is the body that (among its other functions) considers applications for licences (and the issue of licences) for the relevant operation, generation, transmission and distribution facilities. The term 'generation' is widely defined in the Electricity Regulation Act, to mean the "production of electricity by any means, and 'generate' and 'generating' have corresponding meanings" (emphasis supplied).<sup>175</sup>

The objectives of the Act are to –

- achieve the efficient, effective, sustainable and orderly development and operation of electricity supply infrastructure in South Africa;

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<sup>174</sup> Act No. 40 of 2004.

<sup>175</sup> Section 1 of the Act.

- ensure that the interests and needs of present and future electricity customers and end users are safeguarded and met, having regard to governance, efficiency, effectiveness and long-term sustainability of the electricity supply industry within the broader context of economic energy regulation in the Republic;
- facilitate investment in electricity supply industry;
- facilitate universal access to electricity;
- promote the use of diverse energy sources and energy efficiency;
- promote competitiveness and customer and end user choice; and
- facilitate a fair balance between the interests of customers, end users, licensees, investors in the electricity supply industry and the public.

In terms of section 10(2)(e), the applicant for a licence must, among others, submit the plans and the ability of the applicant to comply with applicable labour, health, safety, and environmental legislation, subordinate legislation and such other requirements as may be applicable. The licence application is also subject to public participation in terms of section 11 of the ERA.

The Minister of Energy may in consultation with the Regulator determine that new generation capacity is needed to ensure the continued uninterrupted supply of electricity and determine the types of energy sources from which electricity must be generated and the percentages of electricity that must be generated from such sources.

The proposed nuclear facility that is the subject of this environmental assessment will provide additional power into the existing supply network and is therefore subject to compliance with the requirements of the Electricity Regulation Act and must be licensed and registered with the National Energy Regulator.

#### **6.4.26 The Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002)**

The Mineral and Petroleum Resources Development Act, 2002 (MPRDA) recognises the severely deleterious effects of mining on the environment. One of the objectives of that Act is to-

*“give effect to section 24 of the Constitution by ensuring that the nation’s mineral and petroleum resources are developed in an orderly and ecologically sustainable manner while promoting justifiable social and economic development”.*<sup>176</sup>

Section 4 of the MPRDA contains an interesting provision in relation to the interpretation of the MPRDA with regard to the common law and states that-

- “(1) When interpreting a provision of this Act, any reasonable interpretation which is consistent with the objects of this Act must be preferred over any other interpretation which is inconsistent with such objects.*
- (2) In so far as the common law is inconsistent with this Act, this Act prevails.”*

The inclusion of section 4 in the MPRDA indicates that the legislature was mindful of the fact that the MPRDA would in certain instances be in conflict with the principles of common law. This conflict is apparent when consideration is given to the impact of the MPRDA in relation, *inter alia*, on common law property rights.

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<sup>176</sup> Section 2(h) of the MPRDA

The MPRDA contains numerous provisions regarding the protection of the environment. Section 37 of the MPRDA states that -

*“The principles set out in section 2 of the National Environmental Management Act, 1998 (Act No.107 of 1998)-*

- (a) apply to all prospecting and mining operations, as the case may be, and any matter relating to such operation; and*
- (b) serve as guidelines for the interpretation, administration and implementation of the environmental requirements of this Act.”<sup>177</sup>*

The MPRDA states that the holders of any reconnaissance permissions, prospecting rights, mining rights and mining permissions (as the case may be) -

- must at all times give effect to the provisions in relation to the adherence to the general objectives of integrated environmental management laid down in Chapter 5 of NEMA;<sup>178</sup>
- must consider, investigate, assess and communicate the impact of his or her prospecting or mining on the environment as contemplated in section 24(7) of NEMA;<sup>179</sup>
- must manage all environmental impacts-
  - in accordance with his or her environmental management plan or approved environmental management programme, where appropriate; and
  - as an integral part of the reconnaissance, prospecting or mining operation, unless the Minister directs otherwise;<sup>180</sup>
- must as far as it is reasonably practicable, rehabilitate the environment affected by the prospecting or mining operations to its natural or predetermined state or to a land use which conforms to the generally accepted principle of sustainable development;<sup>181</sup> and
- is responsible for any environmental damage, pollution or ecological degradation as a result of his or her reconnaissance prospecting or mining operations and which may occur inside and outside the boundaries of the area to which such right, permit or permission relates.<sup>182</sup>

Section 39 of the MPRDA contains industry-specific provisions in relation to applicants for mining rights having to perform environmental impact assessments as well as the injunction as well as the obligation to prepare and submit environmental management programmes and environmental management plans. Section 40 of the MPRDA states that the Minister (of Mineral and Energy Affairs) must consult with any state department which administers any law relating to matters affecting the environment when considering an environmental management plan or environmental management programme in terms of section 39.

The MPRDA also contains provisions in relation to financial provision for remediation of environmental damage;<sup>183</sup> management of residue stockpiles and residue deposits;<sup>184</sup> issuing of a closure certificate (which contains provisions on the remediation of environmental damage prior to such closure certificate being issued);<sup>185</sup> powers by the Minister (of Mineral and Energy Affairs) to recover costs in event of urgent remedial measures;<sup>186</sup> and the power of the Minister (of Mineral and Energy Affairs) to remedy environmental damage in certain instances.

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<sup>177</sup> Section 37(1) of the MPRDA

<sup>178</sup> Section 38(1)(a) of the MPRDA

<sup>179</sup> Section 38(1)(b) of the MPRDA

<sup>180</sup> Section 38(1)(c) of the MPRDA.

<sup>181</sup> Section 38(1)(d) of the MPRDA.

<sup>182</sup> Section 38(1)(e) of the MPRDA.

<sup>183</sup> Section 41 of the MPRDA.

<sup>184</sup> Section 42 of the MPRDA.

<sup>185</sup> Section 43 of the MPRDA.

<sup>186</sup> Section 45 of the MPRDA.

#### **6.4.27 The Civil Aviation Act, 2009 (Act No. 13 of 2009)**

In terms of Section 91.06.20 of the Civil Aviation Regulations of 2011, promulgated in terms of the Civil Aviation Act, 2009 (Act No. 13 of 2009), the Director (of the Civil Aviation Authority) may declare an area as a restricted air space. The Nuclear Power Station will be declared as a national key point and as such the air space above the power station will be restricted (as is the case with the Koeberg Nuclear Power Station).

#### **6.4.28 Municipal Systems Act, 2000 (Act No. 32 of 2000)**

The Municipal Systems Act, 2000 (MSA) specifies that municipalities must draw up an IDP as a single, inclusive and strategic development plan that must be aligned with other municipalities and other spheres of government.<sup>187</sup>

Section 26 of the MSA specifies that certain requirements must be adhered to in the drafting of an IDP, including that an IDP must reflect -

- the vision for the long term development of the municipality with special emphasis on the municipality's most critical development and internal transformation needs;
- the council's development strategies which must be aligned with any national or provincial sectoral plans and planning requirements binding on the municipality in terms of legislation; and
- applicable disaster management plans<sup>188</sup>.

The Municipal Planning and Performance Management Regulations<sup>189</sup> (promulgated in terms of the MSA) set out further requirements for an IDP which include making provisions for:

- Development initiatives including infrastructure, physical, social and institutional development; and
- all known projects, plans and programmes to be implemented within the municipality by any organ of state.

#### **6.4.29 Municipal Finance Management Act, 2003 (Act No. 56 of 2003)**

IDPs must also comply fully with the Municipal Finance Management Act, 2003 (MFMA), which came into effect on 1 July 2004. Section 21(1) of the MFMA requires that municipalities co-ordinate the processes for preparing the annual budget and reviewing its IDP, to ensure that the municipality's tabled budget and revisions of the IDP are mutually consistent and credible. The introduction of the MFMA, therefore, provides for closer alignment between the setting of the annual budget and the compilation of the annual IDP.

The annual process of drafting the budget and IDP documents should be synchronised so as to take into account changes and revisions in both documents and the effect of any changes and revisions in one process on the outcomes of the other. Section 53(1) of the MFMA provides for this, specifically that municipalities should "... *co-ordinate the annual revision of the integrated development plan in terms of section 34 of the Municipal Systems Act and the preparation of the annual budget, and determine how the integrated development plan is to be taken into account or revised for the purposes of the budget*".

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<sup>187</sup> Chapter 5 of the MSA

<sup>188</sup> Section 26 of the MSA

<sup>189</sup> Published in Government Notice No. R 796 in *Government Gazette* 22605 dated 24 August 2001.



#### 6.4.30 Occupational Health and Safety Act (Act 85 of 1993)

The objective of the Occupational Health and Safety Act (“OHSa”) is to provide for the health and safety of persons at work as well as the protection of persons other than persons at work against hazards to health and safety arising out of or in connection with the activities of persons at work. The OHSa imposes various duties on employers to ensure the health and safety of their employees, including taking steps as may be reasonably practicable to eliminate or mitigate any hazard or potential hazard to the health and safety of their employees, providing the necessary information, instructions, training and supervision, as well as not permitting any employee to do any work or to produce, process, use, store, handle or transport any article or substance or to operate any plant or machinery unless the precautionary measures have been taken.

In addition, there is a veritable myriad of regulations promulgated under the OHSa which may have relevance to the undertaking of this project and in particular, in regard to safe working conditions in that context. They include the General Administrative Regulations<sup>190</sup>; General Safety Regulations<sup>191</sup>; Construction Regulations<sup>192</sup> and the Environmental Regulations for Workplaces.<sup>193</sup>

The importance of the OHSa for purposes of this legal review relates to the Major Hazard Installation Regulations (“MHI Regulations”)<sup>194</sup> which have been promulgated under the OHSa. In this regard, a major hazardous installation is defined as “an installation – (a) where more than the prescribed quantity of any substance is or may be kept, whether permanently or temporarily; or (b) where any substance is produced, processed, used, handled or stored in such a form and quantity that it has the potential to cause a major incident”<sup>195</sup> which is an “occurrence of catastrophic proportions.”

With regard to part (a) of the definition of a major hazard installation, the General Machinery Regulations<sup>196</sup> promulgated under the OHSa contains a list of notifiable substances in Schedule A. These substances include, inter alia, liquid petroleum gas, n-butane, methane, ISO-butane and various other substances. Therefore if any of these substances or any other substances listed in Schedule A to the General Machinery Regulations will be processed and stored, then the facilities will also qualify as a major hazard installation in terms of part (a) of the definition of a major hazard installation.

The classification of the facilities to be erected or constructed as part of the proposed project as major hazard installations, triggers several requirements which must be taken into account.

Regulation 3(1)(a) of the MHI Regulations requires that, inter alia, every user shall notify the chief inspector, provincial director and relevant local government in writing of the erection of an installation which will be a major hazard installation, prior to the commencement of the erection of the installation. The notification is also required to be advertised in at least one newspaper serving the communities in the vicinity of the installation and any interested and affected person may make representations in writing to the relevant authorities within 60 days, if that installation is not acceptable to that person.<sup>197</sup>

No local government shall permit the erection of a new major hazard installation at a separate distance less than that which poses a risk to, inter alia, neighbouring independent major

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<sup>190</sup> GN R929 of 25 June 2003

<sup>191</sup> GN R1031 of 30 May 1986

<sup>192</sup> GN R1010 of 18 July 2003

<sup>193</sup> GN R2281 of 16 October 1987

<sup>194</sup> GN R692 of 30 July 2001

<sup>195</sup> Section 1 of OHSa

<sup>196</sup> GN R 1521 of 5 August 1998

<sup>197</sup> Regulations 3(6) and (7)

hazard installations, housing and other centres of population, or any similar facility.<sup>198</sup> The siting of the facilities to be erected or constructed as part of the proposed project is therefore of vital importance.

Additionally, the MHI Regulations require that a user of a major hazard installation shall, after consultation with the relevant health and safety representative or relevant health and safety committee, carry out a risk assessment at intervals not exceeding 5 years and submit such risk assessment to the chief inspector, relevant local government and provincial director.<sup>199</sup> A copy of this risk assessment must be available at the premises of any major hazard installation and reviewed forthwith if there is a reason to suspect that it is no longer valid.<sup>200</sup>

The user of such an installation is also required to establish an on-site emergency plan in respect of the installation.<sup>201</sup> Off-site emergency plans are the responsibility of the local government.<sup>202</sup>

A person who contravenes or fails to comply with the notification and advertisement duty, the duty to carry out a risk assessment, to prepare an emergency plan or to report risks and emergency occurrences, is guilty of an offence and is liable to a fine or to imprisonment for a period of twelve months. In the case of a continuous offence, the person is liable for an additional fine of R 200 or additional imprisonment for every days on which the offence continues, to a maximum period of 90 days.<sup>203</sup>

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## 6.5 Legislative Context: Provincial Legislation

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A summary of the key provincial environmental legislation is provided in this section.

### 6.5.1 The Land Use Planning Ordinance, 1985 (Ordinance No. 15 of 1985)

The Land Use Planning Ordinance, 1985 (LUPO) came into force in the then Cape Province on 1 July 1986. Its provisions are today applicable in the Western, Eastern and Northern Cape Provinces. When LUPO first came into force, the three provinces were not separate, but all formed part of what was then known as the Cape Province. Accordingly, and apart from minor amendments subsequent to 1994, the provisions of LUPO in the three provinces are largely the same.

The purpose of LUPO is to regulate land use planning and incidental matters. It is divided into five chapters, dealing with: Structure Plans (Chapter I), Zoning Schemes (Chapter II), Subdivision of land (Chapter III), the Planning Advisory Board (Chapter IV), and General provisions (Chapter V). It requires the applicant in applications for changes in land use (i.e. rezoning) and subdivision (as well as applicants in applications for amendments to documents like urban structure plans) to comply with certain formalities. If Eskom is the applicant for a planning approval in terms of LUPO, then it must ensure that it complies with the provisions of the different chapters that deal with discrete land use and planning issues.

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<sup>198</sup> Regulation 9(1)

<sup>199</sup> Regulation 5(1)

<sup>200</sup> Regulations 5(4) and (6)

<sup>201</sup> Regulation 6

<sup>202</sup> Regulation 9(3)

<sup>203</sup> Regulation 11

In terms of section 16 of the LUPO, an owner of land may apply in writing for the rezoning of land.<sup>204</sup> A rezoning may also, on the initiative of the Administrator or council, be granted under section 16(1) by either the Administrator after consultation with the council concerned or, if authorised thereto by the provisions of a structure plan, that council in respect of land situated in its area of jurisdiction, irrespective of whether or not a local authority is the owner of the land.<sup>205</sup> No application for subdivision involving a change of zoning shall be considered in terms of the LUPO, unless and until the land concerned has been zoned in a manner permitting of subdivision, in terms of Chapter 2.<sup>206</sup> However, this shall not preclude applications for rezoning and for subdivision from being considered simultaneously. No person, including the State, shall subdivide any land except in accordance with an application granted under section 25 of the LUPO by either the Administrator or, if authorised thereto by scheme regulations, a council, subject to certain exemptions.

Upon reaching a decision on the rezoning or subdivision of land, a council shall notify the applicant and the objectors, if any, of its decision by certified or registered post and shall invite their attention to their right of appeal in terms of section 44(1)(a) of the LUPO.<sup>207</sup> A written appeal in terms of section 44 of the LUPO, directed to the Chief Director, must be submitted within two weeks of the date on which the appellant was notified of the decision of the council.

## 6.5.2 Western Cape Provincial Spatial Development Framework

The Western Cape Provincial Spatial Development Framework (WCPSPDF) was commissioned by the Western Cape Department of Environmental Affairs and Development Planning (DEA&DP). The stated purpose of the WCPSPDF is to<sup>208</sup>:

- Be the spatial expression of the Provincial Growth and Development Strategy (PGDS);
- guide municipal (district, local and metropolitan) Integrated Developments Plans (IDPs) and Spatial Development Frameworks (SDFs) and provincial and municipal Spatial Development Plans (SDPs);
- help prioritise and align investments and infrastructure plans of other provincial departments, as well as national departments and parastatals plans and programmes in the Province;
- provide clear signals to the private sector about desired development directions;
- increase predictability in the development environment, for example by establishing “no-go”, “maybe” and “go” areas for development; and
- redress the spatial legacy of apartheid.

The WCPSPDF is a policy document, therefore it does not create (or take away) any rights to use land. Like all guidelines, the WCPSPDF must not be applied rigidly but rather, in a manner that takes account of the particular circumstances of each case. The provincial government is in the process of drafting an integrated planning, environmental and heritage law (currently in a draft Bill format) that will facilitate sustainable development in a variety of ways, including by requiring the Province to develop, and regularly update, a provincial policy and spatial framework to guide decision-makers.

The WCPSPDF will be the first such spatial framework once the Bill is passed and becomes a provincial Act, and the WCPSPDF will then have to be updated and applied in accordance with the provisions of the new act. The WCPSPDF was adopted as a structure plan in terms of Section 4(6) of the LUPO in June 2009, and thus has acquired statutory status. A structure plan is intended to guide anyone making a decision under LUPO, particularly when determining whether or not a proposed development is desirable. The role of the WCPSPDF

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<sup>204</sup> Section 17.

<sup>205</sup> Section 18.

<sup>206</sup> Section 22(1)(a)

<sup>207</sup> Regulation 19 of the Cape Land Use Planning Regulations promulgated under PN333 dated 6 June 1986

<sup>208</sup> Paragraph 1.1

will therefore be to provide guidelines to help decision-makers under LUPO to determine the desirability of a proposed development by considering whether or not it is socially, economically and ecologically sustainable.

The WCPSDF deals both with issues that are explicitly spatial (for example, where future residential developments should be located), and with issues that have not to date in South Africa been viewed as part of spatial policy but which have significant spatial impacts (for example, recycling of waste, or limiting carbon emissions). The scope of the WCPSDF is thus broader than traditionally associated with land use planning.

In this regard, it is necessary to refer to a recent court judgment<sup>209</sup>. In this matter, the Court dealt specifically with the WCPSDF, and held that it is clear that the WCPSDF is a policy document and therefore merely a guideline which has to be implemented within the bounds of the powers conferred on the Province by statute. The Court refers to the following dictum by Harms JA<sup>210</sup> regarding the use of policy (the WCPSDF in the present case):

“I prefer to begin by stating the obvious, namely that laws, regulations and rules are legislative instruments, whereas policy determinations are not. As a matter of sound government, in order to bind the public, policy should normally be reflected in such instruments. Policy determinations cannot override, amend or be in conflict with laws (including subordinate legislation).”

### **6.5.3 Provincial Parks Board Act (Eastern Cape) (Act 12 of 2003)**

The Provincial Parks Board Act aims to “provide for the establishment of the Provincial Parks Board and the appointment of members thereof” and “to provide for the management of biodiversity in Provincial parks”.<sup>211</sup>

The objectives of the Provincial Parks Board Act are –

- “(a) to provide, within the framework of the National Environmental Management Act, for the declaration and management of Provincial parks;
- (b) to give effect to international agreements on protected areas which are binding on the Republic;
- (c) to provide for co-operative governance in the declaration and management of Provincial parks; and
- (d) to provide for the management of Provincial parks in accordance with the provisions of the Eastern Cape Environmental Conservation Act.”<sup>212</sup>

The Act has no specific application at the Thyspunt site as there is no declared Provincial Parks in this area.

### **6.5.4 Nature and Environmental Conservation Ordinance (Eastern Cape), 19 of 1974**

The Nature and Environmental Conservation Ordinance (“the Ordinance”) regulates the protection of both fauna and flora, which are dealt with in Chapter IV and Chapter VI respectively.

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<sup>209</sup> Delivered on 26 October 2007 by Mr. Justice Erasmus (with Mr. Justice Motala concurring); in the High Court of South Africa (Cape of Good Hope Provincial Division) in *SLC Property Group (Pty) Ltd and Longlands Holdings (Pty) Ltd v The Minister of Environmental Affairs and Economic Development (Western Cape) and The Municipality of Stellenbosch*

<sup>210</sup> *Akani Garden Route (Pty) Ltd v Pinnacle Point Casino (Pty) Ltd* 2001 (4) SA 501 (SCA) at par [6] and [7].

<sup>211</sup> Long title of the Provincial Parks Board Act

<sup>212</sup> Section 2

Section 16 of the Ordinance provides the Department of Nature and Environmental Conservation with the powers necessary to acquire property, whether movable or immovable as may be necessary or desirable for the purpose of nature and environmental conservation experiments, research, surveys and investigations in connection with any fauna, flora, inland waters, fish and aquatic growths.<sup>213</sup> Permits are required before scheduled flora and/or fauna can be removed.

#### **6.5.5 Eastern Cape Land Development Objectives Regulations**

The Land Development Objectives Regulations<sup>214</sup> are to be prepared and implemented by local government bodies and are to be consistent with the general principles for land development as set out in section 3 of the Development Facilitation Act (Act 67 of 1995).

The purpose of the land development objectives are stated in section 3 of the Land Development Objectives Regulations and include, amongst others, the following:

- “(b) address and focus on the basic needs of the community;
- (c) evolve a new system of planning at local level which links public expenditure to environmental and financially sustainable development strategies, guided by a vision and priorities determined jointly between government and the public at large; and
- (g) integrate and coordinate policies between different local authorities and government departments at provincial and national level around matters of planning and development.”

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<sup>213</sup> Section 16(1)(a)

<sup>214</sup> PN 33 of 1997 published in Provincial Gazette 274 of 24 October 1997

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## 6.6 Consistency with National Environmental Management Act (NEMA) Principles

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In order to demonstrate how the nuclear power station is consistent with the NEMA principles, a discussion of how these principles have been taken into account in the specialists studies is provided in **Table 6-4** below.

**Table 6-4: Consistency of the nuclear power station with the NEMA principles**

NEMA Principles	Discussion
(2) Environmental management must place people and their needs at the forefront of its concern, and serve their physical, psychological, developmental, cultural and social interests equitably.	The project is designed to serve the needs for electricity of South Africa's citizens. The proposal for a nuclear power station is part of Eskom's long-term planning for meeting energy needs for the next few decades.
(3) Development must be socially, environmentally and economically sustainable.	In spite of the high cost of a nuclear power station relative to coal-fired power stations, South Africa must start to reduce its reliance on coal-based electricity. Furthermore, when the life-cycle impacts of coal-based power generation are considered in relation to those of nuclear generated power, nuclear power has by far the lowest impacts. The project is environmentally sustainable, since the conclusion of this report is that it will not result in unacceptably high levels of impact at the preferred site.
(4) (a) Sustainable development requires the consideration of all relevant factors including the following:  (i) That the disturbance of ecosystems and loss of biological diversity are avoided, or, where they cannot be altogether avoided, are minimised and remedied;	Impacts on biological diversity have been minimised by the choice of the site with the lowest possible biological impact, and by the positioning of the nuclear power station on the site where it causes the lowest possible impacts. As indicated in this EIA report, although there are unavoidable biophysical impacts, the chosen position of the site offers the best trade-off between different types of impact and offers the lowest overall impact on the site. The impacts can be mitigated and mitigation measures are indicated in the specialist studies.

NEMA Principles	Discussion
(4) (a)(ii) that pollution and degradation of the environment are avoided, or, where they cannot be altogether avoided, are minimised and remedied;	The major pollution generated by the project will be nuclear waste. Low level and intermediate level nuclear waste will be managed by disposal at the purpose-designed Vaalputs waste disposal site. High level waste will be stored safely on site. The footprint of the nuclear power station will be minimised, and the remainder of the site will be managed as a private nature reserve.
(4) (a)(iii) that the disturbance of landscapes and sites that constitute the nation's cultural heritage is avoided, or where it cannot be altogether avoided, is minimised and remedied;	A comprehensive heritage impact assessment has been undertaken for the project. This indicates that the project's impacts on heritage resources can be mitigated although the impact on the cultural landscape is recognised. The mitigation of heritage impacts forms a key part of the recommendations of the EIA Report.
(4) (a)(iv) that waste is avoided. or where it cannot be altogether avoided, minimised and re-used or recycled where possible and otherwise disposed of in a responsible manner;	Waste soil from the excavations will mostly be pumped to sea, where it will disperse through water movement and cause minimum impact. Low level, intermediate level and high level radioactive waste will be managed and disposed responsibly through disposal at a radioactive waste disposal site and through on-site containment, respectively.
(4) (a)(v) that the use and exploitation of non-renewable natural resources is responsible and equitable, and takes into account the consequences of the depletion of the resource;	The construction of a nuclear power station places less reliance on the use of coal as a non-renewable resource for energy generation and therefore offsets the wide-scale direct and indirect impacts (e.g. acidification and pollution of soil, groundwater and surface water resources) and that would be caused by the construction of a coal-fired power station. The project is one of a range of projects for the next two decades, including the use of renewable technologies and demand management that Eskom is planning to implement to meet South Africa's energy demands.

NEMA Principles	Discussion
(4) (a) (vi) that the development, use and exploitation of renewable resources and the ecosystems of which they are part do not exceed the level beyond which their integrity is jeopardised;	<p>The project will not cause the significant destruction of rare or endangered ecosystems. The mobile dune ecosystem at the proposed Duynfontein site, in which the nuclear power station will be partly located, has already been significantly impacted historically by the Koeberg Nuclear Power Plant and is by no means pristine. At Thyspunt, the plant is proposed to be located between the 200 m coastal setback line and the Oyster Bay mobile dune system, with an appropriate buffer being maintained from the mobile dune system so as not to disturb the working of this system. The recommended position of the plant is the best possible <u>trade-off</u> between a number of different biophysical impacts. A setback line from the coast will be maintained at the site to allow ecosystem processes and migration of plants and animals along the sensitive coastal zone to be maintained.</p>
(4) (a) (vii) that a risk-averse and cautious approach is applied, which takes into account the limits of current knowledge about the consequences of decisions and actions; and	<p>Members of the EIA specialist team have been given the opportunity to do additional fieldwork to eliminate uncertainty and gaps in knowledge. For instance, the invertebrate specialist did additional fieldwork in January 2010, after the initial deadline for submission of final specialist reports, to ensure that there is sufficient information for decision-making. The depth of specialist studies for this project have arguably been completed in much greater depth than would be the case for a non-controversial form of development like a residential development with the same footprint, in the same environments.</p> <p>As a result of concern raised about the findings of a number of specialist studies (e.g. transport, dune geomorphology, marine biology, agriculture, tourism and air quality) during the public comment period for the Draft EIR, these studies have been re-evaluated. Evidence provided by interested and affected parties and other sources has been taken into account in the revision of these reports, to ensure that the findings of these reports are accurate prior to making a recommendation to the environmental authorities.</p>
(4) (a) (viii) that negative impacts on the environment and on people's environmental rights be anticipated and prevented, and where they cannot be altogether prevented, are minimised and remedied.	<p>The purpose of this EIA process is to ensure that sufficient intelligible information on the possible future outcomes of this proposed project are available to the public and to authorities before embarking on this course of action. All identified potential impacts have been investigated in detail to enable informed decision-making.</p>



NEMA Principles	Discussion
(4) (b) Environmental management must be integrated, acknowledging that all elements of the environment are linked and interrelated, and it must take into account the effects of decisions on all aspects of the environment and all people in the environment by pursuing the selection of the best practicable environmental option.	This EIA recognises the linkage between various elements of the environment. It is recognised that no course of actions, for whatever project, is ever entirely without costs to some sectors of society, and that the goal of responsible environmental management must be to choose the option with the least cost of the best balance of costs and benefits.
(4) (c) Environmental justice must be pursued so that adverse environmental impacts shall not be distributed in such a manner as to unfairly discriminate against any person, particularly vulnerable and disadvantaged persons.	<p>The EIA and public participation processes have been comprehensive and have ensured that all affected persons have the opportunity to raise their concerns about the impacts of the project. Interactions with the affected public have included not only public forums, but also individual interactions with members of the social impact assessment team, to ensure that all possible opinions about the project (including those from vulnerable persons) are heard.</p> <p>The land for all three alternative sites is already owned by Eskom, thus the acquisition of the land does not negatively affect any person or group.</p>
(4) (d) Equitable access to environmental resources, benefits and services to meet basic human needs and ensure human well-being must be pursued and special measures may be taken to ensure access thereto by categories of persons disadvantaged by unfair discrimination.	<p>The project is designed to meet the need for electricity of present and future generations of South Africans. Access to electricity is recognised as a basic human need, and is vital for the sustenance and growth of the economy. The impacts on the economy of the load-shedding in late 2007 and early 2008 serve as an illustration of this.</p> <p>Relatively insignificant impacts in terms of restrictions to access to resources will be caused by the security zones around the nuclear power station, especially the seaward restriction on access. Access could, however, still be granted through a permit application to Eskom. Given the strategically important nature of the power station to South Africa's national security, the access restrictions are regarded as an acceptable impact.</p>

NEMA Principles	Discussion
(4) (e) Responsibility for the environmental health and safety consequences of a policy, programme, project, product, process, service or activity exists throughout its life cycle.	The possible radiological and other health impacts of a Nuclear Power Station are considered in detail in the licensing process for the National Nuclear Regulator (NNR). Limits of acceptable radiological emissions are set by the NNR and no nuclear power station will be allowed by the NNR unless it can be proven that the design of the proposed nuclear power station is capable of complying to these limits.
(4) (f) The participation of all interested and affected parties in environmental governance must be promoted, and all people must have the opportunity to develop the understanding, skills and capacity necessary for achieving equitable and effective participation, and participation by vulnerable and disadvantaged persons must be ensured.	As indicated above, the EIA and public participation processes have been comprehensive and have ensured that all affected persons have the opportunity to raise their concerns about the impacts of the project. All comments received from interested and affected parties have been addressed comprehensively in a comments and response report. The public participation process includes meetings in all directly and indirectly affected settlements close to the alternative sites of the proposed nuclear power station.
(4) (g) Decisions must take into account the interests, needs and values of all interested and affected parties, and this includes recognizing all forms of knowledge, including traditional and ordinary knowledge.	The EIA process has taken into the account the interests, needs and values of all interested and affected parties who submitted comments during the Scoping and EIA phases of the project.
(4) (h) Community wellbeing and empowerment must be promoted through environmental education, the raising of environmental awareness, the sharing of knowledge and experience and other appropriate means.	To the extent possible within a Scoping and EIA process, communities have been empowered by providing them with knowledge about nuclear power generation, to enable them to make an informed decision about the costs and benefits of this form of electricity generation technology.
(4) (i) The social, economic and environmental impacts of activities, including disadvantages and benefits, must be considered, assessed and evaluated, and decisions must be appropriate in the light of such consideration and assessment.	The Scoping and EIA process considered impacts in an integrated manner. Social, economic, biophysical impacts have been assessed and considered.

NEMA Principles	Discussion
(4) (j) The right of workers to refuse work that is harmful to human health or the environment and to be informed of dangers must be respected and protected.	Workers on the proposed nuclear power station during the operational phase must be fully informed of the risks associated with radioactive fuel and electricity generation and must be fully protected with the appropriate personal protective equipment. Their rights to refuse certain work, if appropriate precautions against health impacts are not taken, must be respected.
(4) (k) Decisions must be taken in an open and transparent manner, and access to information must be provided in accordance with the law.	Information generated during the Scoping and EIA processes has been provided in an open and transparent manner. The draft Scoping and EIA Reports and their associated specialist studies have been provided for public scrutiny prior to the finalisation and submission of these reports to the DEA.
(4) (l) There must be intergovernmental co-ordination and harmonisation of policies, legislation and actions relating to the environment.	The co-operative agreement between the DEA and the NNR, as discussed earlier in this Chapter, provides a framework for co-operation between these organs of state, as far as decision-making for this project is concerned. The agreement recognises the distinct yet overlapping roles of the authorities, and is designed to ensure that duplication and inefficiency are avoided.
(4) (m) Actual or potential conflicts of interest between organs of state should be resolved through conflict resolution procedures.	<p>The national DEA is the decision-making authority in this instance, in terms of the environmental impacts of the project. The Scoping and EIA procedure provides ample opportunity for the other spheres of government, namely provincial and local government, to have a input into the EIA process. The process also provides for all other organs of state to be informed as interested and affected parties. The DEA is obliged to consult the Western Cape Department of Environmental Affairs and Development Planning prior to making a decision about authorisation of the project.</p> <p>Should disputes arise between any organs of state during the decision-making process, the necessary dispute resolution procedures will be followed.</p>

NEMA Principles	Discussion
(4) (n) Global and international responsibilities relating to the environment must be discharged in the national interest.	The EIA process has taken cognisance of international obligations in the form of treaties and similar agreements that could have an influence on the project. The integration of new nuclear power stations into South Africa's energy generation mixture is part of South Africa and Eskom's response to the threat of global warming. This response is in the interest of the national and international interest.
(4) (o) The environment is held in public trust for the people, the beneficial use of environmental resources must serve the public interest and the environment must be protected as the people's common heritage.	Eskom, as a public entity, is obliged to manage the site for a nuclear power station responsibly and in interests of the affected communities. Eskom has committed itself to managing the property on which the nuclear power station will be constructed as a private nature reserve.
(4) (p) The costs of remedying pollution, environmental degradation and consequent adverse health effects and of preventing, controlling or minimizing further pollution, environmental damage or adverse health effects must be paid for by those responsible for harming the environment.	Prevention and mitigation of environmental impacts will be the responsibility of Eskom as applicant for the nuclear power station. Eskom will be held responsible for the implementation of the measures specified in the EIA report through a legally enforceable Environmental Management Plan, which will be independently monitored by an Environmental Control Officer.
(4) (q) The vital role of women and youth in environment management and development must be recognised and their full participation therein must be promoted.	Youth groups and women's groups have been included in the public participation process.
(4) (r) Sensitive, vulnerable, highly dynamic or stressed ecosystems, such as coastal shores, estuaries, wetlands and similar systems require specific attention in management and planning procedures, especially where they are subject to significant human resource usage and development pressure.	The alternative sites for the nuclear power station occur along the coasts and therefore, by definition, occur in sensitive environments. The Thyspunt site also contains significant wetlands of scientific and conservation importance, with associated biota and other related and sensitive ecosystems. The approach to the Scoping and EIA process and the specialist studies takes cognisance of these sensitive systems and appropriate management and mitigation measures have been recommended to ensure that these systems are able to continue to function as optimally as possible. The management of the chosen site as a nature reserve will provide further protection to the natural systems during the operational phase.

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## 6.7 Conclusions

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This chapter has given consideration to various domestic and international policies, plans, guidelines, co-operative agreements, conventions and treaties which are relevant to the proposed development of the proposed nuclear power station. This includes the Nuclear Energy Policy and Strategy for the Republic of South Africa which highlights the need for the diversification of primary energy sources in South Africa and increased international interest in nuclear energy as important factors motivating the consideration of nuclear energy in South Africa. Section 14 of the document identifies a national PWR Program as one of two declared nuclear construction and operation programs. The document indicates that it is Government's intention to use the opportunity created by these programs to establish a modern nuclear technology industry including fabrication, manufacture, construction and services.

Nuclear governance bodies or agreements of relevance to the project include the International Atomic Energy Agency (IAEA), the Draft Framework Memorandum of Cooperative Agreement (2003) and the DEAT-NNR Co-operative Governance Agreement. In terms of the NNRA, the NNR is responsible for managing radiation hazards from nuclear facilities. However, in terms of the Constitution of the Republic of South Africa, Act 108 of 1996 ("the Constitution"), the Environment Conservation Act, 1989 (Act 73 of 1989) and the NEMA, the DEA has a responsibility for assessing the impacts of the proposed nuclear power station on the environment, impacts which are likely to include those relating to certain aspects of the radiological hazards of the facility.

In recognition of the dual but distinct responsibility with respect to the assessment of radiation hazards, the NNR and the then DEAT signed a DEAT-NNR Cooperative Agreement. DEA, the lead authority on environmental matters, and NNR have agreed to work in close collaboration on the assessment of nuclear related matters.

Policies, plans, regulations and treaties of relevance to the project, which have been discussed in this chapter, include:

- The White Paper on the Energy Policy of the Republic of South Africa;
- The Radioactive Waste Management Policy and Strategy;
- Integrated Energy Plan (IEP);
- National Integrated Resource Plan (NIRP);
- Eskom's Integrated Strategic Electricity Planning (ISEP);
- Energy Efficiency Strategy of the Republic of South Africa;
- Energy Security Master Plan – Electricity (2007-2025);
- National Response to South Africa's Electricity Shortage;
- National Nuclear Disaster Management Plan;
- The Nuclear Non-Proliferation Treaty and domestic implementation arrangements, National Spatial Biodiversity Assessment (NSBA);
- National Biodiversity Strategy Action Plan (NBSAP);
- Provincial Growth and Development Strategy Green Paper;
- Integrated Development Plans (IDP) of relevant municipalities;
- Regulations for the safe transport of radioactive material (IAEA No TS-R-1) (ST-1 revised);
- Government Notice R.287, promulgated in terms of section 38(4) of the National Nuclear Regulator Act, 1999 (Act 47 of 1999);
- Government Notice R. 388, promulgated in terms of section 36 and section 47 of the National Nuclear Regulator Act, 1999 (Act 47 of 1999);
- Government Notice R.581, promulgated in terms of the National Nuclear Regulator Act, 1999 (Act No. 47 of 1999);
- National Nuclear Non-Proliferation Treaty enacted by the Nuclear Energy Act;
- The Basel Convention on Trans-Boundary Waste Transport;
- IAEA Convention on Nuclear Safety; and

- Joint Convention on the Safety of Spent Fuel Management and the Safety of Radioactive Waste Management.

The legislative framework applicable to this project is diverse and consists of a number of Acts and Regulations that must be complied with. These include the NEMA, which is the most significant single piece of legislation dealing with environmental management in South Africa. The NEMA establishes a set of 18 principles which apply throughout the Republic to the actions of all organs of state that may significantly affect the environment. The NEMA EIA Regulations includes lists of activities which require environmental authorisation before they may be undertaken. If an activity is listed, an applicant applies for authorisation either by undertaking a basic assessment or a process of Scoping and EIA.

Acts and subservient regulations, and draft legislation relevant to the proposed project include:

- The Constitution of the Republic of South Africa (“the Constitution”);
- Promotion of Administrative Justice Act, 2000 (Act No. 3 of 2000);
- Promotion of Access to Information Act, 2000 (Act No. 2 of 2000);
- National Nuclear Regulator Act, 1999 (Act No. 47 of 1999);
- National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003);
- National Environmental Management: Air Quality Act, 2003 (Act No. 39 of 2004);
- National Water Act, 1998 (Act No. 36 of 1998);
- The National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004);
- Sea-Shore Act, 1935 (Act No. 21 of 1935);
- The Maritime Zones Act, 1994 (Act No. 15 of 1994);
- National Environmental Management: Integrated Coastal Management Act, 2008 (Act No. 24 of 2008);
- The Conservation of Agricultural Resources Act (Act No. 43 of 1983);
- The National Heritage Resources Act (Act No. 25 of 1999);
- Hazardous Substances Act (Act No. 15 of 1973);
- Regulations for Transportation of Dangerous Goods and Substances;
- Non Proliferation of Weapons of Mass Destruction Act, 1993 (Act No. 87 of 1993);
- The National Key Points Act, 1980 (Act No. 34 of 2008);
- Atmospheric Pollution Prevention Act, 1965 (Act No. 45 of 1965);
- Disaster Management Act, 2002 (Act No. 57 of 2002);
- Electricity Act, 1987 (Act No. 41 of 1987);
- National Building Regulations and Building Standards Act, 1977 (Act No. 103 of 1977);
- National Nuclear Regulator Act, 1999 (Act No. 47 of 1999);
- Nuclear Energy Act, 1999 (Act No. 46 of 1999);
- National Road Traffic Act, 1996 (Act No. 94 of 1996);
- The Civil Aviation Act, 2009 (Act No. 13 of 2009);
- Occupational Health and Safety Act, 1993 (Act No. 85 of 1993);
- Physical Planning Act, 1991 (Act No. 135 of 1991);
- National Health Act, 2003 (Act No. 61 of 2003); and
- The National Radioactive Waste Disposal Institute Act, 2008 (Act No. 53 of 2008).