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DEA Ref: 12/12/20/944



15 February 2010

For the attention of: Ms. Joanne Yawitch  
Deputy Director-General: Environmental Quality and Protection  
Department of Environmental Affairs  
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Dear Madam

RE.: APPLICATION FOR ENVIRONMENTAL AUTHORISATION R386 AND R387: PROPOSED CONVENTIONAL NUCLEAR POWER STATION (NUCLEAR 1)

The letter from the Department of Environmental Affairs (DEA) dated 19 January 2010 refers, in which the DEA accepts the final Plan of Study for Environmental Impact Report (PoS for EIR) in terms of regulation 31 (1)(a) of the Environmental Impact Regulations, 2006 and details the conditions/ comments associated with this acceptance.

Arcus GIBB (Pty) Ltd (GIBB) hereby responds to the conditions/ comments made by the DEA as follows:

### **1. General**

#### **Condition 1.1:**

The POS for EIR is poorly structured and does not facilitate evaluation against the six specific requirements in the Scoping Report Acceptance letter of this Department dated 19 November 2008, nor does it highlight or provide any rationale for the omission or addition of information (with the notable exception of the inclusion of Nuclear 2 and Nuclear 3 and the implications of this in terms of the consideration of Alternatives).

#### **Response:**

Comment is noted. Specific requirements of the DEA's acceptance letter will be addressed in the EIR.

#### **Condition 1.2:**

DEA recommends that in future, the EAP provide a detailed response to each condition or issue raised or provide a cross reference table indicating where it is been dealt with within the applicable document.

#### **Response:**

Comment noted.



GIBB Holdings Reg: 2002/019792/02  
Directors: R. Vries (Chairman), Y. Frizlar, B Hendricks, H.A. Kavthankar, J.M.N. Ras  
Arcus GIBB (Pty) Ltd, Reg: 1992/007139/07 is a wholly owned subsidiary of GIBB Holdings.  
A list of divisional directors is available from the company secretary.



**Condition 1.3:**

Other alternatives: The revised POS for EIR is not clear about what types of alternatives will be assessed in the EIA other than plan layout options on the various sites.

**Response:**

Alternatives are addressed in detail in Chapter 5 of the Draft EIR. The following types of alternatives are assessed: location of the Nuclear Power Station, forms of power generation, nuclear plant types, layout of the nuclear plant, fresh water supply and utilisation of abstracted groundwater, management of brine, intake of sea water, outlet of water and chemical effluent, management of spoil material, access to the proposed sites, and the no-development option (i.e. 'No-Go').

**Condition 1.4:**

Decommissioning: Impact methodology is presented for the construction and operation phases of the development. The decommissioning phase of the development has been disregarded. The consequences for future land use options around the sites and the economic impacts related to the decommissioning phase must be assessed.

**Response:**

The potential environmental impacts associated with the decommissioning phase (> 60 years from today) have been assessed by the specialists as far as possible (refer to Appendix E and Chapter 9 of the DEIR). The consequences for future land use options around the alternative site and the potential economic impacts related to the decommissioning phase are assessed (Chapter 9 of the DEIR).

**Condition 1.5:**

NNR and DEA agreement: A clear indication must be provided in the EIR with regards to how the agreement between the NNR and DEA will work as well as the responsibilities of these two parties. This agreement has also not been included in the revised POS for EIR.

**Response:**

The DEA and NNR Co-operative Agreements concluded in terms of Sections 6(2) and published in terms of Section 6(4) of the National Nuclear Regulator Act, 1999 (Act No. 47 of 1999) is found in Appendix B4 of the EIR and discussed in Chapter 6 Section 6.3.5 b) of the EIR. The Agreement, as well as the letter received from the Director General of the DEA on 10 February 2009 is included in Appendix B4 of the EIR. The Applicant (Eskom Holdings Limited) raised a concern that the two documents were in conflict in terms of requirements and has requested clarification from the DEA. The DEIR has been written to accommodate the uncertainties in that radiological aspects as have been discussed. However, it has been noted in the Report that these aspects fall within the NNR mandate. Should the NNR decide to comment on these or DEA is required to consider any of these aspects this will still be possible.

**Condition 1.6:**

The revised POS for EIR equates disruption of terrestrial ecological processes with loss of habitat, but the disruption of ecological processes is far more complex than that.

**Response:**

GIBB and all the biophysical specialists agree with the DEA that the disruption of ecological processes is very complex and that the loss of ecological processes is not necessarily the same as loss of habitat. These aspects are fully discussed and assessed in the relevant technical specialist reports (Appendix E and Chapter 9 of the EIR).

**Condition 1.7:**

Associated infrastructure such as transport, harbours and housing are not included in the revised POS for EIR.

**Response:**

A transportation technical specialist study has been undertaken as part of the EIA. The findings of the study are detailed in Appendix E25 and Chapters 8 and 9 of the EIR. Harbours, potentially required for the offloading of equipment and materials, are discussed and assessed within the transportation study. Housing has been discussed and the various options at each site determined. To progress to a level of certainty on accommodation Eskom would be required to proceed with commitments in terms of purchasing land and rezoning land where applicable for all three sites. Such commitments would only be feasible once the preferred alternative site is determined. Eskom will, based on the information shared in the DEIR, local and provincial government input and comments from the public undertake a separate EIA for any housing developments, as well as associated infrastructure such as roads,, that may be required.

**Condition 1.8:**

Specialist studies must be undertaken with a strong element of ground-truthing and must be done in the appropriate season.

**Response:**

All technical specialist studies undertaken have included intensive ground-truthing. Studies have been undertaken over a 30 month (two and a half year) period and multi-seasonal sampling has been undertaken. Detailed methodology, assumptions and limitations of each specialist study is outlined in the respective technical specialist reports (Appendix E of the EIR). Where required, ongoing sampling has been recommended by the particular technical specialist (Appendix E of the EIR) and incorporated into the detailed specifications of the Environmental Management Programme (EMP) (Appendix F of the EIR).

**Condition 1.9:**

SANParks, the Baviaanskloof Mega-Reserve Management Authority and the provincial Parks Boards must be included as stakeholders in the EIA process.

**Response:**

SANParks and the provincial Parks Boards are included as stakeholders in the EIA process (Appendix D7 of the EIR). The Baviaanskloof Mega-Reserve Management Authority is not currently registered as a stakeholder and the organisation has been contacted and invited to register.

**Condition 2.1:**

Condition 3.1 (“The lack of clarity regarding which issues will not be considered further in the EIA phase and the lack of detailed rationale for their exclusion is of concern. The EAP must ensure that all issues raised by I&APs that have not been robustly screened out during the scoping process are addressed in the EIR.”)

DEA will accept the scope of work based on the understanding that all issues raised during the scoping will be comprehensively addressed by the EAP.

**Response:**

GIBB confirms that all issues raised during the Scoping Phase of the EIA are addressed in the EIA Phase and documented in the EIR.

**Condition 2.2:**

Condition 3.2 (“The specialist baseline studies presented in the SR lack focus and are not considered adequate. The TOR for each specialist for the Scoping Phase should have revolved around the refinement of the TOR for the full study to be undertaken during the EIR phase.”)

DEA still does not consider the specialist terms of reference adequate to understand what will be investigated to what level of detail, using what methods and how the impacts and mitigation measures will be evaluated. DEA reserves the right to request further information, or additional studies based on different methods.

**Response:**

Comment noted

**Condition 2.3:**

Condition 303 (“The key impacts identified during the Scoping process have not been indicated in the POS for EIR. A list of these keys impacts and how they will be addressed in the EIR must be included in the revised POS for EIR.”):

DEA has the same comment as per 2.1 above.

**Response:**

Comment noted.

**Condition 2.4:**

Condition 3.4 – 3.6 (All these three conditions relate to the assessment of the human health risks associated with radionuclide emissions and modelling.) The clarification requested in these conditions was not indicated in the revised POS for EIR. This must be addressed in the EIR.

**Response:**

All the information requested by the DEA is addressed in the Human Health Risk Assessment (Appendix E24 of the EIR) and Air Quality Assessment (Appendix E10 of the EIR).

**Condition 3.1:**

Figure 1 in the revised POS for EIR must be amended in the EIR to clearly show where in the process the study currently is, and all of the opportunities for public comment.

**Response:**

This figure has been included in the EIR (Chapter 7 of the EIR) and the current point in the EIA process is indicated on the figure. The opportunities for ongoing public comment are outlined in Chapters 7 and 10 of the EIR.

**Condition 3.2**

The EIR must clearly differentiate between the existing application and the possible future applications for Nuclear 1, 2 and 3, as to ensure that no confusion is experienced by the I&APs.

**Response:**

After due consideration, Eskom (i.e. the Applicant) has decided not to pursue an application for the construction of more than one nuclear power station in this EIA. However, in line with the countries long term intention to investigate up to 20 000 MW of nuclear power generating capacity, an application for the second nuclear power station may be submitted by Eskom soon after the submission of the Final Environmental Impact Report for Nuclear-1. This has been clearly communicated to all registered Interested Affected Parties (I&APs) in the letter advising them of the availability of the Draft EIR, as well as in Chapter 1 of the EIR.

**Conditions 3.3:**

The detailed assessment in the EIR should be limited to construction and operational phases. However, the EAP should include a description of the decommissioning options, together with the most likely option, and required each specialist to provide a strategic level assessment of the likely impacts or risks, together with any conceptual mitigation measures or studies that may be required in future.

**Response:**

The DEA's comment has been noted and is included in Section 3.22 of Chapter 3 of the DEIR. Specialists have provided a strategic level assessment of potential impacts and suggested mitigation measures for implementation in the future (Appendix E of the EIR). The mitigation measures proposed have been included in the EMP (Appendix F of the EIR).

**Condition 3.4:**

Section 3.2: The implications of sediment disposal should be added to the scope of work as applicable.

**Response:**

Comment noted. The various alternative land and off-shore options for sediment disposal have been assessed in the EIA (Section 5.11 of Chapter 5 of the EIR) and by the various technical specialists (Appendix E of the EIR).

**Condition 3.5:**

Section 4.1 and 4.2: A construction category should be added to the duration criteria and the text describing the method and table with the rating scales should be aligned.

**Response**

Comment noted. Table 7-11 and associated text in Chapter 7 of the EIR has been modified accordingly.

**Condition 3.6:**

Section 4.2.8: The cumulative impacts of the associated infrastructure of the proposed NPS must be included in the EIR.

**Response:**

Cumulative impacts of the proposed power station and associated infrastructure have been assessed by the technical specialists (Appendix E of the EIR) and in Chapter 9 of the EIR.

**Condition 3.7:**

Section 4.2.11: DEA suggests that mitigation measures describe "best practice" and then based on the degree of benefit, cost, technical availability, or other criteria, Eskom can commit to implement specific mitigation measures or provide a rationale on why they are not able to implement the mitigation measures.

**Response:**

Comment noted. Mitigation measures are described in the technical specialist reports (Appendix E of the EIR), the discussion on proposed mitigation measures in Chapter 9 and the specifications contained in the EMP (Appendix F of the EIR). All mitigation measures proposed are practical, technically feasible and Eskom, the Applicant, has agreed to their implementation during various integration discussions between the specialists, the Environmental Impact assessment Practitioner (EAP) and the Applicant.

**Condition 3.8:**

Section 4.3: The proposed public participation is supported, but thematic workshops where stakeholder groups can engage directly with the specialists are recommended.

**Response:**

Given the number (twenty four) and geographical spread (overseas and with South Africa) of the technical specialists and the alternative sites, thematic workshops are not considered practical for this EIA process. The results and recommendations of the various specialist studies as well as the integration thereof will be presented at the public meetings and key stakeholder workshops associated with the review of the draft EIR and also presented in the DEIR itself. All comments raised during the meetings and workshops, as well as during the public comment period, relating to the technical specialist studies will be relayed to the technical specialist concerned and addressed with the Issues and Response Report. This is a most unusual request and Arcus GIBB respectively requests that the background for such a request be shared with the EAP and the Applicant so that an effort can be made to address the concern within public participation process guidelines.

**Condition 3.9:**

Section 4.4: In addition to site layouts, alternatives relating to seawater intake and discharge systems, type of nuclear reactor, the disposal of sediment, the provision of potable water, the location of the construction and permanent accommodation and access roads should be considered.

**Response:**

Comment noted. As Government has not concluded the negotiations with prospective vendors a discussion on the types of nuclear reactors is not practical in this EIA process. The technical differences between the proposed types offered by the vendors is negligible Eskom's nuclear engineers have compiled a technical envelope for the proposed power station (Appendix C of the EIR).

Alternatives with respect to seawater intake and discharge systems, sediment disposal, provision of potable water, plant layout, accommodation, access roads etc. are discussed and assessed in Chapters 5 and 9 of the DEIR.

**Condition 3.10 Section 4.5:**

**Condition 3.10.1:**

All studies should be contextualized on a regional basis, in order to support assessment of significance of the impact over-and-above the relative assessment of certain impacts associated with site layouts.

**Response:**

All technical specialist studies have contextualised their findings and assessment on a regional and national level (Appendix E of the EIR).

**Condition 3.10.2:**

The EAP should include a town planning specialist, as well as explicitly task the economic, social, human health risk, agricultural, noise, tourism, site control and emergency response specialists to assess the externalities associated with any possible direct or indirect restriction on land use.

**Response:**

The economic, social, human health risk, agricultural, noise, tourism, site control and emergency response specialists have assessed the externalities associated with any possible direct or indirect restriction on land use (Appendix E of the EIR).

A town planning specialist has not been included on the specialist team, however, an opinion of a experienced and well-qualified town planning specialist has been obtained regarding the potential impact of the proposed power station on possible direct or indirect restrictions on land use and this is included in Chapter 9 of the EIR.

**Condition 3.10.3:**

The transport, site control and emergency response terms of reference should be clarified both in terms of the issues to be addressed as well as the approach. Furthermore, any areas of overlap with the NNR process should be made clear.

**Response:**

The clarification and areas of overlap between the NNR and EIA processes in respect to the transport, site control and emergency response studies is provided in Chapters 1 and 6 of the EIR.

**Condition 3.10.4:**

Nuclear waste management: the issue of nuclear waste handling, management, storage and disposal is not covered by the specialist studies.

**Response:**

The issue of nuclear waste handling, management, storage and disposal is covered in the technical specialist studies, where relevant e.g. transportation specialist study. Nuclear waste is discussed and assessed in Chapters 3, 6, 9 and 10 of the EIR.

**Condition 3.10.5:**

An avifaunal study be added to the specialist reports and the ecological experts must evaluate the total ecological impact after the separate studies have been undertaken. This will ensure that the impact on ecological processes will also be determined. The impact on the potential protected area expansion for the areas should be considered.

**Response:**

The assessment of the potential impacts on the avifauna are included in two technical specialist studies, namely the vertebrate faunal specialist study (Appendix E13 of the EIR) and the marine biology assessment (Appendix E15). Prof. Les Underhill, a respected Ornithologist from the University of Cape Town, has reviewed the marine biology assessment and confirms that the assessment with respect to marine avifauna is adequate. Special monitoring of the avifauna on Dryer Island near the proposed Bantamsklip site has, however, been recommended by Prof. Underhill and the marine specialist (Appendix E15 of the EIR), should the power station be constructed at that site, and this recommendation has been included as a mitigation measure in the EMP (Appendix F of the EIR).

**Condition 3.11:**

Section 4.5.4 (Dune Geomorphology): A study on the ecosystem functioning of the dune systems must be included. This must take into consideration the additional economic loss to coastal communities if the dunes are further stabilized and vegetated dunes are not cleared. This of special importance to the Thyspunt site.

**Response:**

A number of the biophysical specialist studies assess the potential impact on ecosystem functioning of the dune systems, namely the dune geomorphology assessment (Appendix E2 of the EIR), the flora assessment (Appendix E11 of the EIR), the freshwater ecology assessment (Appendix E12 of the EIR) and the vertebrate faunal assessment (Appendix E13 of the EIR) and the invertebrate faunal assessment (Appendix E14 of the EIR). The potential economic impacts of the loss to coastal communities if the dunes are further stabilised and the vegetated dunes are cleared was not considered to be significant by the economic specialist (*pers. comm.*, Imani Development).

**Condition 3.12:**

Section 4.5.6 (Flora): The vegetation study needs to include ground-truthing of the desktop study.

**Response:**

The flora assessment (Appendix E11 of the EIR) did include extensive ground-truthing, within various seasons over a number of years, of the desktop study. On-going monitoring of the flora at the

alternative sites is recommended by the flora specialist (Appendix E11 of the EIR) and included in the EMP (Appendix F of the EIR).

**Condition 3.13:**

Section 4.5.7 (Fauna) This study includes penguins and cormorants. The study of these species should preferably form part of the avifaunal study and / or marine studies. Desktop studies for the possible occurrence of and ground-truthing for, particularly red data and listed species should be done.

**Response:**

See response to Condition 3.10.5 above. Desktop and field studies have been undertaken by the vertebrate faunal specialist study (Appendix E13 of the EIR) and the marine biology assessment (Appendix E15 of the EIR).

**Condition 3.14 Section 4.5.12 (Marine Biology):**

**Condition 3.14.1:**

Impacts on the penguins should also form part of the marine study, as this is where their food supply is situated.

**Response:**

See response to Condition 3.10.5 above.

**Condition 3.14.2:**

The proposed establishment of predictable consequence of sea-temperature rises on all forms of marine life should not only look at the impact on squid spawning, but on the whole chain and its effect on especially red data and listed species. This should include the effect on the cormorant and penguin populations. The impact of harbours (related to the project) on the marine ecosystems should also be identified.

**Response:**

The marine biology assessment (Appendix E15 of the EIR) includes the assessment of potential impacts described above. Also see response to Condition 3.1.5.

**Condition 3.14.3:**

The marine ecological study, with specific reference to the extent of the habitat change should also look at the resultant expected impact on Marine Protected Areas (MPAs)

**Response:**

The marine biology assessment (Appendix E15 of the EIR) includes the assessment of potential habitat change and its potential impacts (positive and negative) on MPAs.

**Condition 3.15:**

Section 4.5.12 and 4.5.13 Editorial errors should be addressed as the approach and content of the EIR will be evaluated against the revised POS for EIR.

**Response:**

Comment noted.

**Condition 3.16:**

Section 4.5.13 (Economic): the economic impact should include the impact of disruption of ecosystem services to the area, especially to marginalized communities.

**Response:**

The economic assessment (Appendix E17 of the EIR) did consider the assessment of potential impacts of the disruption of ecosystem services to the area, but it was considered insignificant by the economic specialists to be assessed further.

**Condition 3.17:**

Section 4.5.14, 4.5.15, 4.5.17: The EAP must ensure that the social and public participation processes are integrated and must ensure that all impacts are assessed to the requisite level of detail by the suitably qualified and experienced specialists.

**Response:**

Social and public participation processes were integrated (Appendix E18 and Chapter 7 of the EIR).

**Condition 3.18:**

Section 4.5.21 (Transport): Transport requirements of waste disposal and the identification of new infrastructure needed, should be evaluated in the light of the resultant impact on biodiversity.

**Response:**

The transportation assessment (Appendix E25 of the EIR) includes an assessment of the transportation equipment and road infrastructure requirements of waste disposal. Existing roads would be used for disposal of waste from the site(s) to Vaalputs Waste Disposal Site, should the NPS be approved at any one of the potential sites. Should approval be obtained and road infrastructure upgrades (beyond the site boundary) be required during the construction phase of the approved site, separate EIAs will be undertaken to assess the potential environmental impacts of such upgrades. These EIAs would include a specialist assessment on the potential impact on biodiversity.

Yours faithfully  
for Arcus GIBB (Pty) Ltd



Jaana-Maria Ball  
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