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Melanie Webber/ Tammy Christie

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*Departement van Omgewingsake en Ontwikkelingsbeplanning*  
*Department of Environmental Affairs and Development Planning*  
*ISEbe leMicimbi yeNdalo esiNgqongileyo noCwanciso loPhuhliso*



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315 Pretorius Street  
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**Attention: Ms. L Grobbelaar**

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Dear Madam

**COMMENTS: DRAFT ENVIRONMENTAL IMPACT ASSESSMENT FOR ESKOM' S  
PROPOSED NUCLEAR-1 POWER STATION AND ASSOCIATED  
INFRASTRUCTURE.**

The above document (Volumes 1-6) dated February 2010, received by the Department on 6 March 2010, and the subsequently submitted Oceanographic Specialist Study (3 Volumes) dated April 2010, and received by the Department on 14 April 2010, refer.

The Department's comments on the Draft Environmental Impact Report ("EIR") which follow below are presented as follows: Comments which pertain to the assessment as a whole will firstly be discussed and then comments specific to the two proposed Western Cape sites namely Bantamsklip and Duynefontein sites will follow. As the third site, namely Thyspunt, falls within the area of jurisdiction of another province, the Eastern Cape, this Department will not provide detailed comment on this site alternative but an assessment of the overall recommendations of the EIR with respect to this site has been included.

**1. GENERAL**

**1.1 Cumulative impacts:**

It was noted that only certain summaries of impact analyses in Chapter 9 of the Draft Environmental Impact Assessment Report ("EIR") contained a sub-section dealing with cumulative impacts. Other summaries included cumulative impacts as a further sub-section of each site. Others did not provide a summary of the cumulative impacts. The cumulative impact section is very important as this is where the cumulative impact of all the different elements of the Nuclear-1 project were to be described (as communicated to an Interested and Affected Party ("I&AP") on Page 160 of the Comments and Responses Report, Appendix D8). Seeing as more than one EIA are being done for the overall Nuclear-1 project it is imperative that there is a dedicated section in the EIA that deals with the cumulative impacts of all the elements. The summary of the cumulative impacts of all

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the identified impacts must be obtained from the specialist studies and inserted as a clear sub-section under each impact summary in Chapter 9. Cumulative impacts do not appear in Chapter 9.28 or Chapter 10. Please explain how cumulative impacts were considered in the selection of the preferred alternative.

### 1.2 Separation of EIA's:

The separation of the EIA processes for the power plant, the transmission lines and the staff village is a great concern of this Department. It is noted that many I&AP's have the same objections to this approach. It is unrealistic to assume that the two EIA decisions will not have an influence on each other. It would have been much more acceptable to find a way to combine/link the two applications despite the complexity of each. CapeNature's suggestion as included on Page 162 of the Comment's and Responses Report should have been considered in more detail.

Both the staff village (covering approximately 167.2 hectares) and the transmission lines (up to 990km of lines for the Bantamsklip site) have the potential to have considerable impacts on communities and the natural environment. Once a nuclear power station has been approved on a site, it cannot go ahead without the necessary transmission lines and staff village. There will be great pressure on the competent authority to authorise these two projects despite the impacts that will be identified.

### 1.3 The Staff Town

The Department notes the extensive list of residential, commercial, recreational and infrastructure requirements of the staff town as listed in Appendix C (EIA Consistent Dataset for Nuclear-1 NPS). Please explain when authorisation would be sought for this town as the development of the town has not been assessed in the EIA. The report estimates that 3 750 beds are required for construction workers (yet 10 500 people are expected to influx the area as a result of the Nuclear-1 construction (Chapter 9.23)) but it's stated that the project aims to provide accommodation for 1 400 staff members based on the assumption that accommodation will be provided for in surrounding towns. It is unclear whether it can be confirmed that this accommodation is in fact available in existing towns. Given that 10 500 people are expected to influx the area it is unclear where the other 6750 people are to be accommodated.

There is already great concern about the social impacts and the burden on the town structure and infrastructure (as outlined in the Social Impact Assessment and highlighted in this Department's previous comments) associated with such a massive influx of people to coastal towns with small populations. The staff village will make this change permanent. To divorce these impacts from the current application is, in the opinion of this Department, a major flaw.

### 1.4 The Sewage Treatment Works & Waste

The National Environmental Management Waste Act, 2008 (Act No. 59 of 2008) would be applicable to the proposed Nuclear-1 (both in terms of solid waste storage and disposal and in terms of the proposed sewage works as listed in Appendix C and Chapter 5.4 of the Draft EIR). The sewage works appear to form part of the current EIA (Page 3-13 of the Draft EIR) and much general waste (non-radioactive) will be produced (Chapter 3.14 and 3.15 of the EIA report). Please clarify when the relevant waste management licences will be applied for. There is a lack of detailed information regarding the proposed sewage works including its proposed location as well as an assessment of the impact of the sewage works on the surrounding environment.

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### 1.5 Use of outdated information in site selection

The use of Eskom's 1982 Nuclear Site Investigation Programme ("NSIP") was raised as a concern by some I&AP's as the information is outdated by 28 years. This is a valid point as environmental considerations have only been more recently defined in terms of fine-scale biodiversity mapping, ecosystem status updates, environmental conservation measures including legislation, namely the Environmental Conservation Act, 1989 (Act No. 73 of 1989) ("ECA") and the National Environmental Management Act, 1998 (Act No. 107 of 1998) ("NEMA") and it's specific Environmental Management Acts such as the National Environmental Management Biodiversity Act, 1998 (Act No. 10 of 2004) and many others. There is concern that the NSIP should have been revised and updated to take into account these new factors, not to mention changes in population and urban growth since 1982. There is a concern that given the significant time that has passed since the finalisation of the NSIP, and the inevitable changes that have occurred in the coastal landscape of the country, this study might have limited the number of appropriate sites that have been considered for Nuclear-1.

### 1.6 Air Emissions

The Department notes the emissions described in Chapter 3.17. Please clarify whether or not an air emission licence will be required in terms of the National Environmental Management Air Quality Act (Act No. 39 of 2004) ("NEMAQA"). If so, when will this licence be applied for?

### 1.7 The Public Participation Process ("PPP")

- 1.7.1. Copies of the actual newspaper advertisements placed for the availability of the EIA Report must be submitted in the Final EIR.
- 1.7.2. Copies of all comments made on the Draft EIR must be submitted with the Final EIR, not just the comments and responses report. This is an important requirement of the NEMA EIA Regulations, Regulation 58(4) of GN. No. R. 385. Interested and Affected Parties ("I&AP's") should not have to request this information separately. It must be available as part of the Final Report.
- 1.7.3. This Department has continuously raised the concern, throughout the EIA process, that our original comments and the Environmental Assessment Practitioner's ("EAP's") responses to our comments have not been included in any of the reports. We remain strongly of the opinion that this is a flaw in the process as comments from a State Department (which may influence the decision of the competent authority) have not been made available to the public. Regulation 58(4) of GN. No. R. 385 states that any written comments received by the EAP from a registered I&AP must accompany the report when the report is submitted to the competent authority. This has not been done. There is also no mention made in the reports reviewed so far that this Department has submitted written comment to the National Department of Environmental Affairs ("DEA"). This Department is a registered I&AP for this application and thus our comments must be included in the same way as all other I&AP's. Despite continuing to request this, the Department's concern has not been addressed.
- 1.7.4. Please state whether or not DEA has received written comment on the application from the other relevant State Departments, including the Department of Economic Development and Environmental Affairs ("DEDEA"), the Department of Water Affairs ("DWA") and the Department of Agriculture. The Department notes in Chapter 10.6 that final comments are expected from this Department, DEDEA, the National Nuclear Regulator ("NNR") and other

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Departments. All of these comments should be made available in the Final EIR. If this is not done the PPP is not transparent as all the information before the decision making authority is not made available to the public i.e. Regulation 58(4).

- 1.7.5. The Department did not note comment on the file from the relevant Heritage Authority, presumably the South African Heritage Resources Authority ("SAHRA"), or Heritage Western Cape for the Western Cape sites ("HWC") in terms of Section 38(1) of the National Heritage Resources Act (Act No. 25 of 1999). This comment is usually required before a decision is taken on the EIA. Please confirm whether or not such comment has been received. If it has been received it should be included in the Final EIR for the same reasons expressed in 1.7.3 and 1.7.4 above.
- 1.7.6. There is no assurance in the Draft EIR that the Final EIR will be made available to all registered I&AP's for comment prior to submitting the report to the competent authority. Regulation 58 (1) & (2) of GN No. R385 clearly states that the EAP must give an opportunity to I&AP's to comment on all written submissions (in this case the Final Report) before it is submitted to the competent authority. The Final EIR is thus not for I&AP's "information purposes" only as stated in Chapter 1.2.3 of the EIR.

### 1.8 Peer Review of Specialist Studies

The Department previously requested that the findings of the specialist peer reviewers must be made public knowledge to ensure transparency and promote informed decision making. The Department noted the EAP's previous response to this request, that a statement of quality from all peer review specialists will be included in the EIR, thus assuring the general public that the reports meet all scientific and objectivity requirements as per the requirements of the EIA. The Department supported this. However, the statements of quality were not found in the EIA report as was agreed to. These signed statements from all peer reviewers (with any recommendations/problems, if applicable) **must** be included.

### 1.9 Alternatives

It was noted that the applicant no longer intends to pursue the authorisation of all three alternative sites in the Nuclear-1 EIA. This will resolve one of the Department's major earlier concerns as true site alternatives now exist for the proposed development.

It is not understood why alternatives for the accommodation of personnel (Chapter 5.14) is included in this EIR, as the Staff Village and associated infrastructure has been spilt from the Nuclear-1 EIA and will be dealt with under a separate process. Whilst this Department does not agree with the splitting of the associated Nuclear-1 applications, it is confusing to the public to have elements of these other EIA's included in the current EIR.

### 1.10 Executive Summary

The Department would like the executive summary of the Draft EIR (Page 2) to be amended from: "*The competent authority, the DEA, in consultation with the relevant provincial environmental authorities...approved the Scoping Report in November 2008*" to: "*The competent authority, the DEA, received written comments from the relevant provincial environmental authorities.... The DEA approved the Scoping Report in November 2008.*" This Department still had a number of outstanding concerns when the Scoping Report was approved.

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### 1.11 Noise

It would be useful for the public to have the anticipated noise levels compared to an everyday example that they can relate to. For example, provide a noise description that explains how loud 45dBA is (e.g. average sound of a car passing by, a jack-hammer etc.)

### 1.12 Limitations of Specialist Study Sampling

The Department was concerned to note that some fieldwork for specialist studies was done outside of the ideal sampling seasons and that as a result additional fieldwork in the appropriate season has been commissioned. There is no mention of whether or not these revised field sessions and the results thereof are included in the Draft EIR or if these revisions have been commissioned but not completed. The revision of specialist studies to obtain adequately accurate specialist predictions and conclusions must be done before the application can be decided upon and must be included the Final EIR for consideration by the competent authority.

Of most concern with respect to the above limitation was the Invertebrate Specialist Assessment. The specialist stated that "*the limitations resulting from the inadequate duration and inappropriate timing of the invertebrate assessment surveys must be seen as a major impediment.*" It was also concerning to note that this limitation was not specifically included in the impact summary in Chapter 9.12. The specialist clearly conveyed the message that the study could not be considered a thorough objective assessment of such a large area under the circumstances and that additional surveys at the three sites must be carried out. This Department is of the opinion that a revised and adequate study that meets the duration and seasonal requirements of the specialist should be completed before the DEA considers the Final Report.

The Geological Hazard Assessment (Appendix E3) stated that "*additional neotectonic studies still need to be completed and the results submitted to the NNR as part of the site safety report submissions. These studies...may impact and even change conclusions reached to date, and therefore no final conclusions can be made about site suitability.*" This study thus also highlights further outstanding information which should be available to the DEA when they make their final decision.

### 1.13 Specialist Studies

- 1.13.1 Most of the specialist studies were not signed and dated at the end. Please ensure that they are all signed in the Final EIR.
- 1.13.2 It is recommended that the company and author of each specialist report appear on the cover of each specialist report. This was done for some reports but not others.
- 1.13.3 The summarised findings of Appendix E3, the Geological Hazard Assessment, could not be found in Chapter 9 of the EIR. They should be divided into the three sites as the findings do differ.
- 1.13.4 The summarised findings of Appendix E7, the Geo-Hydrological Assessment, could not be found in Chapter 9 of the EIR
- 1.13.5 It is recommended that the relevant specialist study(ies) and Appendix numbers be included in the Chapter 9 sub-sections so that persons reviewing the reports can easily refer to the specialist studies for more detail on the summarised findings of each impact described in Chapter 9.

### 1.14 Size of Footprint

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### 1.14 Size of Footprint

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There is some confusion about the anticipated footprint size of the proposed Nuclear-1. Page 9-34 of the EIR mentions that the extent of the proposed EIA corridor and HV Yard comprises some 322 and 207 hectares respectively, with the nuclear power station likely to be in the order of 230 hectares. On Page 9-275 of the EIR, the proposed size of the Nuclear-1 footprint is indicated as 31 hectares. Please explain the great discrepancy in sizes. Please explain if the HV Yard will form yet another EIA application and if so, where will this be accommodated in relation to the Nuclear-1 site. Clearly if other massive footprints are required at the proposed sites, and these have not been considered by the specialists, then the significance and assessment of all the impacts will be greatly underestimated and invalid. Assumptions that the rest of the site will be conserved would be inaccurate. Please provide a list of all separate EIA applications that are required before the Nuclear-1 plant could be operational.

#### 1.15 General Error

The heading of Chapter 9.24.3 should be Thyspunt not Bantamsklip.

#### 1.16 Decommissioning

The assessment of the decommissioning phase of the Nuclear Power Station ("NPS") on the environment is very vague. The public and authorities must be in a position to understand what the long term implications of the project on the environment will be and adequate forward planning must be done to ensure that the environment is protected for future generations. The information contained in the report does not leave one with a good sense of the implications of the decommissioning phase.

#### 1.17 Radiological Issues including Nuclear Waste and Emergency Response

With respect to the handling of matters pertaining to nuclear safety and radiological issues, it is acknowledged that the DEA will not review this information but will refer this information to the NNR for consideration according to the agreement between DEA and the NNR of 15<sup>th</sup> June 2006. This Department is, however, of the opinion that the NNR's assessment of these matters must be reported on in the Draft EIR. In other words all registered I&APs must have adequate access to these inputs and the findings of the NNR on radiological matters which affect the environment must form part of the DEA's decision making process. This makes for transparent and responsible decision making. In any event, the construction of the plant will not be able to commence without the NNR's installation licence which follows the evaluation of the safety case. The need for the expedited approach to reaching a final decision on the EIA is not understood nor supported in light of the fact that construction cannot commence without evaluation of the safety case by the NNR.

Although the management and disposal of low, medium and high-level radioactive waste has been described, an assessment of the impacts associated with the handling, storage and disposal of radioactive waste is lacking.

The information presented with respect to emergency preparedness is of a very general nature and is vague. The findings of the Emergency Response specialist study are that the sites (with the exception of the Duynfontein site) are acceptable for emergency planning considerations since the newly adopted European Utility Requirements ("EUR") approach followed by Eskom for emergency planning suggests that a proposed nuclear installation can be built in South Africa without the need for off-site short-term emergency interventions like sheltering, evacuation or iodine prophylaxis (i.e. no countermeasures). In this regard, it is assumed that the NNR is responsible for ensuring that the proposed nuclear power station meets the relevant prescripts (the EUR) in order to rule out the need

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for countermeasures. More information in this regard is required to satisfy concerns that emergency preparedness is achievable at all three sites.

#### 1.18 Applicant's ability to implement mitigation measures

The National Environmental Management Amendment Act, 2008 (Act No. 62 of 2008) lists under 24 O the criteria to be taken into account by competent authorities when considering applications. 24 O (1) (b) (iii) requires that the competent authority must take into account "the ability of the applicant to implement mitigation measures and to comply with any conditions subject to which the application may be granted". In this regard an indication on the ability of Eskom to implement the recommendations/mitigation measures made by the various specialists and EAP in the report is lacking. This information must be insisted on by DEA and must form part of the final EIR.

#### 1.19 Spoil Disposal at Sea

The findings of the EIR suggest that the re-use of spoil (where appropriate) combined with disposal to sea is the preferred means of dealing with the significant amount of spoil material to be produced through excavation activities during construction. The marine ecologist stated that this must be done far offshore to mitigate significant impacts of the spoil on marine life at the coast (in particular, to abalone at Bantamsklip). It is not described in the EIR how spoil will be disposed of and how it will be transported to an offshore dumping site, if this is to be undertaken. This is important as further infrastructure requirements and resultant impacts requiring assessment may be triggered by the loading of spoil onto vessels at the sites.

The Department is concerned about the proposed spoil disposal at sea as the Marine Ecologist has identified that this could impact significantly on the marine environment (especially abalone at Bantamsklip). Please clarify how far off-shore this material will be dumped. Please also indicate the composition of the material to be dumped.

#### 1.20 No-go alternative

The report states that the no-go alternative equates to the selling of the properties by Eskom which will probably result in an alternative form of land use that may be more damaging than a nuclear power station. This is an assumption. If not developed for nuclear power plants, there exists the chance that these sites will retain their current status and be left largely natural.

## **2. BANTAMSKLIP SPECIFIC COMMENT**

### 2.1 Water

Bantamsklip is located in a water stressed area and the EIR suggests that the desalination of sea water will be the only viable solution for freshwater supply during the operational phase. It is not clear, however, where water will be sourced from to meet the needs during the construction phase. Please clarify this and explain at what stage the desalination plant will be built to begin supplying water.

### 2.2 Sensitivity of the site

The Department notes that:

- 2.2.1. According to the Assessment on the Heritage Resources, and by Western Cape standards, the preservation and volume of archaeological sites at Bantamsklip is exceptional.



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- 2.2.2. Nine vegetation types are to be found on the Bantamsklip site with an extremely high proportion of Red Data species (50 out of 463) which indicates high localised endemism.
- 2.2.3. The wetland systems on the site are also considered to be highly sensitive to changes in water quality, which would in turn affect the plant communities.
- 2.2.4. The resultant significance of the cumulative impact of the development on the wetlands at Bantamsklip is high, even with mitigation (Table 9-19).
- 2.2.5. The Cape Floristic region, within which Bantamsklip lies, is regarded as a global Biodiversity Hotspot.
- 2.2.6. The farm Hagelkraal, on which the Bantamsklip site (north of the R43) lies, is a Natural Heritage Site.
- 2.2.7. Several threatened species of amphibians (including 1 critically endangered and 2 endangered) are known to occur on the farm Hagelkraal. There are also 42 possible reptiles species (34 probable or confirmed), 60 possible mammal species (37 probable or confirmed) and 187 possible bird species (72 confirmed) the latter two including near-threatened and endangered species.
- 2.2.8. Two undescribed species of invertebrate were found on the Bantamsklip site.
- 2.2.9. In the faunal study, the destruction of natural habitats and populations, resulting from site clearance, buildings, laydown areas and infrastructure was high, even with mitigation. The reduction in populations of threatened species, resulting from habitat destruction and direct mortality was also high, even with mitigation. Road mortality was also rated of high significance, even with mitigation (Table 9-22).
- 2.2.10. A number of areas were identified as being sensitive and should be set aside as ecological corridors and habitat. These areas are listed on Page 8-56 of the EIR. Further to the recommendations of the faunal specialist, both the invertebrate fauna and botanical specialist provided further setbacks and corridors and made recommendations with respect to the footprint of the proposed Nuclear-1 plant.

It is very important that it be made clear in the EIR how the mitigation measures of these biological specialists (as well as the marine ecologist) will be accommodated, including the location of the footprint of the proposed power plant. This is imperative because in most cases the acceptability of development on the site was directly dependent upon the effective implementation of mitigation measures proposed. The Department requests that you highlight any mitigation measures which cannot be adhered to and provide an assurance that all remaining measures described in the specialist studies will be met. For example, the EIR mentions a requirement that the power plant may not be less than 800m from the road. The biological specialists, however, requested a 200m corridor along the coast (measured from above the predicted 2075 100-year high-water line), and 100m buffers around all wetlands. Please explain if these requirements can be met simultaneously on the site. Please also confirm that no structures or infrastructure will be constructed on the portion of land above the R43. The Bantamsklip site is a very sensitive site and a clear commitment to all mitigation measures must be made by the applicant if this site is to be considered for development now or in the future. Clearly, from the summary above, there remain some impacts of high significance, even when mitigated.

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The Heritage Assessment stated that any mitigation of the heritage resources at Bantamsklip would be lengthy, expensive and resource intensive requiring up to a year's lead time (Chapter 9.16.7). If the Nuclear-1 project commences construction in 2012 as planned, will there be adequate time and the necessary finance and resources to effectively implement the required mitigation?

### 2.3 Tourism and Local Economic Impacts

The Department noted that the proposed nuclear power station has a 1km exclusion zone into the sea. This has the potential to impact upon whale-watching and shark-diving businesses as well as collectors of kelp for the nearby abalone aquaculture businesses. The EIR states that Eskom will apply for a concession to allow the whale-watching business to continue to use this area. There is no mention of the shark-diving operators and there is also no mention of what the impact on these businesses will be if such concessions are not awarded.

Furthermore, on Page 8-105 of the EIR it is stated that kelp harvesters would not be allowed to operate in the exclusion area but that Eskom intended to collect the kelp itself and "*make it available to the local abalone farms*". It is not clear whether or not the intention here is that Eskom will sell the kelp to the local abalone farms. The Department is concerned about this for the following reasons:

- The off-shore resource surely will not belong to Eskom. Do they have the necessary permits to harvest a marine resource?
- The natural resource previously available to the harvesters then becomes something they must buy from another party. This may affect the livelihood of kelp harvesters.
- Kelp harvesting may allow abalone poaching to creep in (go unnoticed under the guise of kelp harvesting).

The Oceanographic Assessment stated that elevated water temperatures from the outlet flows into the sea can deplete the dissolved oxygen in the water leading to unfavourable conditions. However, the ecological receptors within the water column, where mixing is predicted to occur, are largely mobile and will avoid areas with unfavourable conditions. The significance of the impact of the thermal plume upon the marine environment is therefore considered to be low. The Department is concerned that ecotourism (whale-watching and shark-cage diving) as well as local recreational and small commercial fishing ventures will be affected by the movement of fish, sharks and whales (and other sea mammals) out of the area because of the unfavourable conditions. This could impact on the local economy at Kleinbaai and Gansbaai where these businesses are a major source of income. This concern has not been adequately addressed.

Please indicate if the offshore tunnel outfall (for the warm released water) recommended by the Marine Ecologist (Chapter 9.15.2) for the Bantamsklip site would be committed to if this site is a current or future prospective site. It is noted that, even with mitigation, the release of warmed cooling water and desalination during the construction phase will both have a highly significant impact at Bantamsklip (Table 9-36).

The impact on tourism (Tourism Assessment) focussed on anticipated growth in Bantamsklip with the arrival of all the infrastructure associated with the Nuclear-1. The potential negative impacts on ecotourism (related to the potential marine impacts) has not been adequately assessed. It is notable that the impact of the proposed Nuclear-1 at Bantamsklip will have a high significant impact on visual amenity and sense of place, even with mitigation (Table 9-46).

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#### 2.4 Environmental Management Plan ("EMP")

The Botanical Specialist Assessment (Appendix E11) required that an EMP be drawn up for the conservation area at Bantamsklip to ensure its proper management. The current EMP does not include this. A comprehensive rehabilitation and monitoring programme was also to be drawn up for the site. Please explain how these mitigation requirements will be met.

#### 2.5 Public concern

The Department noted the statement on Page 9-189 of the EIR that "*public concern is also relatively low at Bantamsklip*". It is not clear what this statement is based on as the comments and response report submitted with the EIR is dominated by objections to the proposed Nuclear-1 at Bantamsklip.

#### 2.6 Visual

Page 9-201 of the EIR (Chapter 9.22.2) states that the actual visibility of the Bantamsklip nuclear power station is restricted by tall vegetation on the southern side of the R43 and the vegetated dunes to the north of the site. This statement needs clarity as the vegetation characteristic of the area is low shrub/bush and, even with the presence of taller alien vegetation, it will have little effect in screening such a massive building.

#### 2.7 Social Impacts

The Social Impact Assessment concluded for the Bantamsklip site that the influx of job seekers into the area will impact negatively on the rural character of the area, especially if an increase in the number of informal illegal dwellings is experienced. Municipal services and social infrastructure are inadequate to cope with the expected growth in the number of people working and living in the area. This summarises the major social concern for the area. The study states that the implementation of mitigation measures is a pre-requisite to ensure proper provision of services and infrastructure. The cost of essentially upgrading the existing towns to cater for the influx of people will be a massive financial burden and it is not clear who will be funding this. The local Municipality is likely to be unable to achieve such a task in terms of finance or capacity).

Page 9-229 of the EIR mentions that uses of the area surrounding Bantamsklip have included Navy training, including the firing of live missiles and guns as well as the demolition of ammunitions. General aviation aircraft as well as helicopters also operate along this part of the coast. Please clarify whether any of these uses will be able to continue if Nuclear-1 is established here, and if not, have the relevant parties been informed of this and their comment obtained?

#### 2.8 Transportation

There is little clarity on the exact route to be used for transporting materials to Bantamsklip from Cape Town, besides the intersections mentioned on Page 9-233 of the EIR. If heavy vehicles are going to need to pass through Hermanus, Gansbaai etc. this could have significant traffic impacts as the vehicles will move slowly and will cause delays. The traffic analysis provided in the Transport Study is lacking in detail and does not cover the full transport route. Furthermore, the necessary upgrades to certain bridges, to carry the heavy loads (Page 9-228), has not been included in Table 9-68. This must be done.

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### 3. DUYNEFONTEIN SPECIFIC COMMENT

#### 3.1 Freshwater supply

The report states that the Aquarius Wellfield was previously developed to supply groundwater to the existing Koeberg Nuclear Power Station. According to the report, this wellfield requires extensive rehabilitation but could supply the required construction and partial operational demand. What has impacted on the quality of the groundwater being supplied to the KNPS from this wellfield that has resulted in this supply of water not being used? What measures have to be put in place to remediate the quality of water in order for it to be used for these purposes? How achievable is this and therefore can this source really be considered for the construction phase?

#### 3.2 Cumulative impact associated with dewatering

It is noted that the cumulative impact associated with dewatering both the proposed Pebble Bed Modular Reactor Demonstration Power Plant site "PBMR DPP" (south of the existing Koeberg NPS) and the Nuclear 1 site concurrently, will result in lowering of the water table in the general area. The recommendation that the projects are undertaken (should they be approved) so that they are not in the construction phase together, is therefore supported.

#### 3.3 Impact on dune dynamics

Regarding the impact of establishing the NPS on a mobile dune system at Duynefontein, it is noted that the botanical specialist's findings differ from the dune geomorphology specialist who argues that the dune system has largely been disturbed by the existing power plant at Koeberg. The botanical specialist is of the opinion that the transverse dune system has been effectively re-mobilised due to alien clearing and thus regards this system as sensitive and conservation worthy. The botanical specialist recommends moving the footprint of the proposed plant east of the sensitive transverse mobile dunes and incorporating a 100 m buffer from the dune edge. The current location of the proposed plant in the mobile transverse dunes is not supported by the specialist. The views of the botanical specialist and his recommendations are not reflected in the main body of the EIA report. Instead, the geomorphologist's point of view is put forward i.e. that the impact on the dune systems would be insignificant provided the power station is kept on the periphery of the dune system. It is concerning that the botanical specialist's inputs seem to have been completely dismissed. The other finding of the botanical specialist report was that the sensitive sand plain fynbos to the south east of the site should be avoided through re-alignment of powerline routes and access roads. It is uncertain whether these mitigation measures can be implemented. It is also uncertain whether the final recommendations at the end of the report with respect to final layout of the plant on the site respect the recommendations of the botanical specialist i.e. how does the layout differ from the suggestions of the botanical specialist and if the layout does differ what will the impact be on the mobile dune system and sensitive sand plain fynbos? In this regard a final comment from the specialist with respect to the final placement of the plant is required. Without this input the Department cannot rule out the finding that the impact on the transverse mobile dune system at Duynefontein is unacceptable.

#### 3.4 Invertebrates

The impact summary table for impacts on invertebrate fauna at the Duynefontein site indicates high significance for positive contribution to conservation (with mitigation). This rating is not understood given that the conservation area at Duynefontein already exists and in fact will be reduced in size should the proposed plant be located at this site unless

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proposals to extend the conservation area are being considered. Has the extension of the conservation area, to offset the impacts of the NPS on biodiversity been considered?

### 3.5 Future Land Use (Social Impact Study)

The EIR suggests that the development of the staff village at Atlantis will contribute positively to the town should the plant be sited at Duynefontein. Although no detailed information is presented on the impact of staff villages on the surrounding environment, this potential positive impact should be further explored and more information presented in this regard.

### 3.6 Transport Study

The finding of the Koeberg NPS 2005 Emergency Plan was that *"if the capacity of the road system is reduced by 60% of normal capacity the required population evacuation can still be evacuated within acceptable time limits"*. Is this finding still applicable? If not, how will the existing emergency plan for Koeberg need to be updated should the proposed NPS be sited at Duynefontein. It is mentioned that a total of 130 buses are required as standby emergency evacuation vehicles should evacuation be necessary during the construction period. Can the applicant meet this requirement?

It is noted that the Traffic Impact Study recommends that the entrance to Koeberg off the R27 (main entrance) be signalised by 2018. This will also facilitate access to the proposed construction lay down area to the east of the R27 for the proposed PBMR DPP. The PGWC:Department of Transport and Public Works proposed a grade separated intersection at this point. Final input from the Department of Transport in this regard is required. It is noted that certain figures that are referred to in the Transport Study seem to have been omitted.

## **4. GENERAL COMMENT ON FINDINGS AND CONCLUSIONS**

### 4.1 Summary of Impacts on Dune Geomorphology

In the final summary of impacts, with specific reference to the impact on dune geomorphology at Duynefontein, the impact has been recorded as insignificant. This contradicts the botanical specialist's findings. This is discussed above under specific comments on the Duynefontein site.

### 4.2 Thyspunt

Large assumptions are made regarding the potential benefits of having a nuclear power station at Thyspunt especially with respect to the reported impact on wetlands. The author suggests with ongoing monitoring of the groundwater and wetland systems that effective mitigation can be put in place which could have a net positive impact on wetlands. In order to reach this same conclusion requires the reader to make a huge leap of faith. The dune-wetland systems at Thyspunt are a dynamic complex system and as such the precautionary approach should be applied. The report states *"The opportunity for large scale active management and conservation of wetland ecosystems as a whole will offset potential negative impacts"* but if the dune dynamics are affected to such an extent that over time the wetland habitats are degraded and lost, this assumption will be false. Also, the no-go alternative for this site presents a scenario where large expanses of wetland and dune system are permanently impacted by development. How can this outcome be presumed?

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In the final calculation of scores to determine the preferred site, "positive impacts on conservation", is added as a weighted criteria and weighs a high score in the calculation (assigned a value of 4). The Thyspunt site has been assigned a high score for this conservation criterion (high positive impact). This certainly has a large influence on the final score and becomes one of the main reasons for recommending this site as the preferred site alternative. The conservation benefit, in this Department's opinion, must be balanced by the consideration of significant negative biophysical impacts associated with locating the NPS at this site. A precautionary approach should be followed given the uncertainties associated with interfering with the sensitive Oyster Bay headland bypass dune system and associated wetland environments.

#### 4.3 Economic and social impacts

Economic and social impacts are not reflected completely in Table 9-73 (summary of potential impacts of high and medium significance at all alternative sites). Certain impacts have been omitted and this must be rectified to present a complete picture. In general the establishment of a NPS at any of the sites is reported to create jobs and have a positive impact on low income households. Is this the case past the construction period? It is understood that largely highly skilled labour will be required during the operational phase. The impact of establishing construction villages and the social impacts on surrounding small towns and service infrastructure is totally underrated in this Department's opinion.

#### 4.4 Weightings assigned to categories of potential impacts (where 0 reflects no importance to decision making and 5 indicates most important for decision making)

It is interesting that the categories which are weighted as high in the final score reflect the applicant's cost considerations directly (transmission integration factors and seismic suitability both score a 4) and not necessarily biophysical or social considerations e.g. Impacts on flora scores a 1, provided that the specialist's recommendations regarding the placement of the power station on the sites are followed. The report is silent, though, on the applicant's ability to respect these recommendations. If the power station's footprint cannot be placed on the sites, as the specialist indicates, then the impact on flora becomes unacceptable and should score a much higher value. The outcome is thus skewed as there is no assurance of the mitigation. Social impacts, in this Department's opinion, are underscored. Why does marine ecology weigh so low compared to the other biophysical factors? There are three pillars of environmental sustainability (social, biophysical and economic). In this EIA evaluation of impacts, the economic factors appear to be elevated in terms of importance above the other factors.

#### 4.5 Dismissal of Bantamsklip site based on cost factors

In the description of the comparison of alternatives, the EAP regards the Bantamsklip site as the least preferred site alternative and hence removes the site from further consideration based largely on costs factors and possible cumulative environmental impacts associated with the transmission corridors (this is still subject to outcomes of a separate EIA process). The difference in cost effectiveness, according to the EAP, between Bantamsklip on the one hand, and Duynefontein and Thyspunt on the other hand, would be approximately R8 billion, which according to the EAP is considered a significant difference by the economic specialist. The Economic Specialist Report, however, says the following: *"It is evident that the three sites do not differ significantly. Thyspunt is about 6 % more cost effective than Bantamsklip and less than 1 % more cost effective than Duynefontein. This constitutes a difference between Duynefontein and Bantamsklip of R6 388 million and between Thyspunt and Duynefontein of R570 million. It must be mentioned that although R6,388 million and R570 million are large amounts, they*

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*are relatively small amounts in terms of the total estimated cost of a nuclear power station (R170 billion in 2008 prices)."*

The comment that the economic specialist report views this cost difference as significant is disputed and the elimination of this site alternative from the final comparison of sites (Table 9-76), based on cost factors, is not justified and is thus not supported.

#### 4.6 Re-use of groundwater

The re-use of groundwater from dewatering processes during the construction period is supported provided that groundwater is of a suitable quality that it won't negatively impact the environment or people if used for potable purposes. Although approval to store the water will need to be received from DWA, the principle of re-use versus discharge to sea or municipal sewage system is supported and should be seriously considered in the decision to be taken for the NPS development.

#### 4.7 Possibility of constructing additional nuclear power generating units

The cumulative implications of developing additional nuclear power stations at any of the sites will need to be carefully considered when the site selection decision is made for Nuclear 1 as it seems very likely that the role-out of additional power stations at the site chosen will be pursued in the future by the applicant. The positive impact for conservation is likely to be watered down if one considers the addition of further power stations at the sites unless additional areas are made available for conservation to offset cumulative impacts of establishing more than one nuclear plant at any of the sites. From an exclusion zone point of view, additional land will probably not be made available should additional power plants be constructed, as the argument will remain that the established zones will be adequate, especially with technology improvements etc. (same as the argument presented for the Duynefontein site where an additional exclusion zone will not be required and will fall within the existing Koeberg exclusion zone).

As requested previously, please send two copies of all follow-on documentation regarding this application (including responses to this Department's comments) as the proposed Western Cape sites fall within two different administrative regions and are being commented upon by two different officials. Their contact details are as follows:

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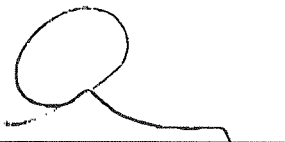
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This Department reserves the right to revise or withdraw comments or request further information from you based on any information received.

Yours faithfully



**ANTHONY BARNES**  
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