

Our Ref: J27035

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Attention: Mr. R. M. Longden-Thurgood

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Dear Sir

ESKOM ENVIRONMENTAL IMPACT ASSESSMENT (EIA:12/12/20/944) FOR A PROPOSED NUCLEAR POWER STATION AND ASSOCIATED INFRASTRUCTURE: COMMENTS ON THE DRAFT ENVIRONMENTAL IMPACT ASSESSMENT REPORT

Your correspondence to Ms. Bongzi Shinga of ACER (Africa) entitled “*Comment on the Nuclear-1 Draft EIR – Part 3 Main Report, Continued: Appendices from Appendix 19*” refers.

Arcus GIBB (Pty) Ltd (GIBB) acknowledges receipt of the above-mentioned letter. We thank you for your valuable comments and your participation in the Eskom Nuclear Power Station (Nuclear-1) Environmental Impact Assessment (EIA) process to date. Your questions and comments concerning the Nuclear-1 have been noted.

Responses to your comments / questions are as follows:

Your comment (1)

APPENDIX E19 VISUAL ASSESSMENT

General comment on Appendix 19: It would be helpful if a distance line marked in km was to be added to all the maps and photographs.

Response (1)

Your comment is noted.

Your comment (2)

Executive summary, 1st paragraph – this says that the Nuclear-1 site just north of the existing Koeberg NPS is “due west of the town of Atlantis”. I understand that the site will be located just north of the existing Koeberg NPS, which will be found to be more or less SW of Atlantis. A check on the Map Studio map for Cape Town will quickly confirm this direction. I am well familiar with the location of Atlantis, having travelled along the R27 from Koeberg to the town on a number of occasions. Refer to the map on page 17.

Response (2)

The Nuclear-1 position for the Duynefontein site will be located north of the existing Koeberg Power Station and South-West of Atlantis in accordance with Figure 1.3 of the Visual Impact Assessment report.

Your comment (3)

P.5 Colour – the 2nd sentence says that “The NPS is a concrete structure, which will have a light grey colour”. Although the abbreviation “NPS” is listed as Nuclear Power Station, this comprises the tall reactor containment building and the larger, but lower, services building alongside which houses the reactor control rooms, health physics offices, a components store, and storage facilities for new and spent fuel elements. Arguably the predominant structure is the high reactor containment building. These are certainly the predominant structures which stand out rather than the lower services building when the Koeberg Nuclear Power Station is viewed from sea-shore vantage points such as Melkbosstrand and Cape Town. This visual dominance of the reactor containment building hasn’t been mentioned.

Response (3)

With regard to the elevation of various structures when constructed from a common terrace elevation the reactor building has a dominant visual impact.

Your comment (4)

P.18 Section 1.1.2, 2nd paragraph – here again “NPS” is used in a generic sense, but is this the actual reality, rather than the visual appearance of the reactor containment building? It’s this particular context with which I am concerned. In contrast, I have no concern in the use of NPS in its *generic sense* where it appears in the 1st line of the 1st paragraph of Section 1.2.

Response (4)

The term NPS generally refers to the power station’s power island and the ancillary buildings.

Your comment (5)

P.20, 3rd paragraph, quoting – “Visual simulations of the NPS have not been done as layouts and forms of the structures are not known at the time this report was written. However, an indication of the scale and extent of the layout has been taken from the existing Koeberg Nuclear Power Station and diagrammatic sections that show the scale”

The relevance of quoting this paragraph relates to Section 2.1 Description of the Project Requirements on p.22. At the beginning of this section there needs to be a reminder that the information discussed relates to the existing two PWRs at the Koeberg NPS.

Response (5)

Your comment is noted. The reminder will be added to the report.

Your comment (6)

P.22 Section 2.1 Description of the Project Requirements, 1st dotted paragraph, quoting – “Both reactor buildings are constructed of reinforced concrete”

“Reactor buildings” should read *reactor containment buildings*. However, the statement that they “are constructed of reinforced concrete”, which has been made as a general comment is, in fact, incorrect for the AP1000. Thus, if Eskom chooses the Areva EPR reactor, this mode of construction will indeed be the case. However, if Eskom chooses the Westinghouse AP1000, this most definitely *will not* be the case.

For the AP1000 reactor containment building Westinghouse has chosen to design it with two ~10 cm thick annular steel cylindrical shells, with the space between them filled with unreinforced concrete. As *at the time of writing this comment*, this design feature is currently under question both by the US Nuclear Regulatory Commission and the UK H&SE nuclear safety regulator. Both these nuclear regulatory organisations have questioned the Westinghouse concept, wanting to know in particular what proof can be provided to demonstrate that it would withstand a direct impact from a Boeing 747 jumbo jet (now joined, of course, by the European Airbus A380 passenger jet) without being breached. Care, therefore, needs to be taken in the composition of this paragraph in order to avoid giving the wrong information.

Because it’s the size, height and colour of these reactor containment buildings that will be the criterion iro their visual impact, and not their construction details, I would suggest that the most elegant solution would be simply to omit any reference to this.

Additionally, whether either of these Generation III PWR designs will have any associated tall stack would need to be ascertained. It must be understood that, whichever PWR is selected by Eskom, they are Generation III types, whereas those currently operating at Koeberg are Gen.II types. The design features between these two generations of PWRs differ fairly substantially.

I assume that both the Areva and Westinghouse companies have available concept pictures of their designs, which should preferably be used in this report.

Ditto, 2nd dotted clause, quoting – “The Services Building houses the main control room and waste handling and storage system. This building provides controlled access to the Reactor Building”. This clause is taken together with:

Ditto, 6th dotted clause, quoting – “The Waste Handling and Hydrogen and Nitrogen Storage Building are adjacent and to the south of the Reactor Building”

I have taken these two clauses together because there’s a discrepancy between them. The building referred to in the 6th dotted clause is designed only to handle low and intermediate radioactive contaminated wastes, in which it is packaged for despatch to the radioactive waste disposal site at Vaalputs. The store mentioned in the 2nd dotted clause is that one used both for new and spent fuel elements. The latter will be extremely highly radioactive at the time of their removal from the reactor core.

As they stand, these two descriptions are confusing iro high, and intermediate and low radio-active wastes.

Response (6)

The mode of construction of the reactor containment structures is such that a combination of concrete and steel is used. This ensures that the concrete is re-enforced to be able to withstand the postulated

external hazards. In some designs rebar is used while in others annular bars are used as steel reinforcement.

With regard to the conceptual drawings of the EPR and AP1000, these are available in the public domain. In the absence of a vendor, use of any of these two drawings may mislead the public and the vendors into believing that these are the only two being considered. The use of such of such conceptual drawings is not supported

With regard to the Services Building housing the Main Control Room and the “Waste Handling and Storage”, this will be rectified as the Services Building meant to house the Main Control Room and the Fuel Storage and Handling facility (for fresh and used fuel).

Your comment (7)

P.33 Section 2.6.3 Duynfontein – here again the incorrect geographical direction of Atlantis from the Nuclear-1 site has been mentioned, which is to the SW, not the west.

Response (7)

Your comment is noted. The geographical direction will be corrected.

Your comment (8)

P.38 *et al* Figures 3.1.1a & b and 3.1.2a & b and 3.1.3a – the legends on these figures are not readable, even at 150% enlargement. Can this be improved? Those on Figure 3.1.3b *are* readable.

Response (8)

Your comment is noted. We will investigate the legibility of the figures mentioned above.

Your comment (9)

P.48 Figure 3.6.1 – I don't like at all the device that's been used here to demonstrate the size difference at three successively greater distances from a visually intrusive plant with stacks, i.e. by reducing the size of an identical photo. The distance effect as shown is artificial and surely inappropriate, because there would be the additional modifying effect of all the landscape in the intervening distance, so it is unlikely to be a matter of my being subjective about it. This visual device should be rectified for the final EIR.

Perhaps there's no better way to demonstrate the effect which I consider to be unsatisfactory than this quote from the 3rd paragraph on p.50, in the author's own words: “The visual intrusion's intensity is low since it cannot be seen from surrounding areas and the distance from the nearest habitation is large and the structure blends into the background and atmospheric haze”.

Response (9)

The method of illustrating the difference in apparent size of large infrastructure in the field of vision at different distances is a standard method applied in Visual Impact Assessment. We take note of your comments regarding this method not showing the influence of the landscape in the intervening distance. However, the purpose of the succession of photos is purely to illustrate the influence of distance on the size of an object in people's field of vision i.e. that any structure becomes successively smaller in a person's field of vision as that person moves further from the object. The distance effect is not artificial – it is based on empirical evidence.

Your comment (10)

P.87 Duynefontein, quoting – “Negative – The sense of place of the coastal and inland setting north of the site is degraded”. It was mentioned in the Introduction to this report that the presence of the existing Koeberg NPS (for well over 30 years) modifies what would otherwise be a highly visually intrusive additional nuclear facility. Would this not also apply to its *sense of place*?

The other factor, which is a social issue and which surely cannot be ignored, is that the very presence of the Nuclear-1 facility would be very likely to considerably enhance employment opportunities for the residents living in Atlantis. Although Atlantis residents can't actually see the existing Koeberg NPS, their viewpoint of it i.r.o. *sense of place* may be rather more acceptable than it otherwise would be, because of these potential opportunities. In contrast, the *sense of place* may well be regarded by the residents of Melkbosstrand as having been further degraded, but such a viewpoint would demonstrate the subjectiveness in the concept of *sense of place*. Lastly, *sense of place* needs to be divorced from any feeling of fear due to the proximity of additional nuclear facilities – the two concepts are not synonymous.

Response (10)

The assessment of impacts is based on the local/specialist knowledge of the appointed specialists. However, impacts are not viewed in isolation and once all impacts are received from the specialists, the information is consolidated and tradeoffs are made, where required. It is correct to state that visual perception is a highly individual matter, and that a visual elements that is perceived as positive by one person or group of persons may be perceived negatively by another person or group of persons, depending on social background, economic status and a variety of other factors. The visual assessment cannot assess the landscape and visual impact from the point of view of each of a number of different groups.

Your comment (11)

P.88 Duration, quoting – “Long term (16-60 years) - The impact will cease after the operational life and demolition of the structures”. It is impossible to forecast exactly how spent fuel elements will be dealt with in 70 years time (i.e. +60 years from when the reactors go critical), even though some I&APs are demanding that this subject be dealt with in detail. And the dismantling of the major structures may not even be started for another 30 years after the reactors have been shut down. Therefore it would be safe to assume that well over 100 years could elapse before the visual impact is eventually eliminated.

But electricity demand will not cease, and if a site for a power station of whatever technology is generally acceptable, then who can say how it might be developed in +60 years or more time?

Response (11)

It is true that the visual impact will last beyond the operational life of the power station. Eskom intends to decommission and dismantle the installation after its useful life, or if required, erect a new plant. There is also the option of extending the life of the plant, once it has reached an age of 60 years, so even the 100 years estimate that you have made may not be accurate. In any event, the duration of the impact is defined to be “long-term”.

Your comment regarding the uncertainty about what could be developed in 60 years' time is noted and acknowledged. Predictions so long into the future are more uncertain than predictions into the short-term or medium-term future.

Your comment (12)

P.117 Section 3.5 Proposed Wind Farm Thyspunt area – Cumulative Visual Impact – I thought that we had finally escaped from the inappropriate terminology of “wind farm”, and were now using “wind generating facility”? The term “wind farm” certainly is not being used in the EIA process for the projected facility up the west coast at Britannia Bay.

For those of us who have had no involvement with the EIA processes for the three wind generator facilities near Thyspunt, it would be useful to be provided with information on their comparative anticipated generating capacities in MW(e), and the number of wind towers to be installed at each site. This is information with which the inhabitants and I&APs around Thyspunt will, of course, be familiar through the three EIA processes. I note that their areas are shown in the figure on page 120, with the area for Nuclear-1 included. It will, therefore, be surrounded by wind generating facilities! *Ironique!*

However, Eskom has suggested that any one or two of the new nuclear sites could have their capacity increased to 10 000 MW(e), although they haven't mentioned on what basis this proposal might need to be put into practice. It is suggested that Eskom be requested to establish their philosophy about this. Indeed, they would need to give it considerable thought because I doubt if the existing Eskom site at Thyspunt would accommodate additional nuclear reactors. With the current site that Eskom already owns at Thyspunt, is it known whether or not the land immediately on either side of it would be available to purchase?

Response (12)

Your comment is noted. We do attempt to refer to Wind as a Wind Energy Facility and not a wind farm.

The current EIA is for Nuclear-1 to a maximum of 4000 MW. The Thyspunt property that Eskom owns at present is large enough to accommodate a power station of such nature and size. However, Eskom is in the process of acquiring certain pieces of identified land with a view to extending the conservation area and where road infrastructure crosses properties that are privately owned. It is therefore unlikely that Eskom will be reselling surrounding properties if Nuclear-1 is approved and goes ahead..

Your comment (13)

P.121 Section 3.6 The 'No-go' option – I think that some further consideration needs to be given to the wording of this paragraph. This Nuclear-1 process isn't the only one: there are likely to be Nuclear-2 and 3 EIA processes, even possibly Nuclear-4.

It is reported elsewhere in this Nuclear-1 draft EIR that Eskom have stated that no site is eliminated at this stage: all sites will be included in subsequent nuclear EIA processes. However, that doesn't preclude the possibility, of course, that a site may be categorically declared either in this or subsequent EIA process to be unsuitable for nuclear power development. There are obviously complex issues in this section which will need some careful working through.

I would, however, respectfully recommend that the author reads what other specialists have written about the no-go option, which are strongly biased to the fact that South Africa desperately requires more generating capacity to accommodate the ever increasing energy requirements for its expanding economy.

Response (13)

Your comment and recommendations are noted. In spite of the fact that Nuclear-1 is likely to be followed by further nuclear power stations, the current Nuclear-1 application is for a single nuclear power station. The no-go alternative with respect to Nuclear-1 is, therefore, no nuclear power station at the particular site being considered for Nuclear-1.

Your comment (14)

P.132 7th dotted comment, quoting – “With respect to visibility the Duynefontein NPS is relatively close (2 km) to the Koeberg NPS and is of similar scale”. The indication in this draft EIR is that the Nuclear-1 project will be required to have an output of ~4 000 MW(e). The output of the Areva EPR is 1 600 MW(e). Two of them would, therefore, provide ~3 200 MW(e), which is short of the 4 000 MW(e) that is continually mentioned. The Westinghouse AP1000 has an output of 1 154 MW(e), although I believe that a 1 250 MW(e) version is also available. If this reactor was to be chosen *three* would be required to produce either 3 462 MW(e) or 3 750 MW(e), depending on which reactor version is chosen. This would obviously make a difference to the visual impact of the NPS site. (On raising this point at the Key Stakeholders meeting at Duynefontein on April 20th, it was mentioned that 4 000 MW(e) was chosen for this EIA process as a datum electrical output only).

Response (14)

Your comment is noted. Your assessment of the number of reactors required per mentioned vendor is correct. However, the assessment of impacts is based on the most conservative change in the environment as a result of the construction and operation of the 4000 MW Nuclear Power Station and is therefore based on the maximum number of reactor units required.

Your comment (15)

APPENDICES E20; E21; E22 - no comments

Response (15)

Your comment is noted.

Your comment (16)

APPENDIX E23 NOISE IMPACT ASSESSMENT

P.2 Executive Summary, 3rd paragraph, quoting – “The maximum 4000 MW electrical power capacity of Nuclear 1 would be 2,2 times greater than the 1800 MW of the existing KNPS.

Although the figure of 4 000 MW(e) is a notional electrical generating capacity for the purposes this EIA process, the situation would arise that three reactors would be required for this Nuclear-1 project if the AP1000 was to be selected.

Another point about the factor of 2.2 given for the increased power output is whether or not this could be considered to be a worst scenario. However, this can't be determined without knowledge of the reactor which Eskom will choose, in combination with what generating system would be installed, i.e. whether or not it would come as a package deal by the reactor manufacturer. Answers to these questions haven't been released by Eskom. However, the answers *should* be available because both

types of reactors are under construction across the world. The Areva and Westinghouse websites should provide this information.

Response (16)

The report assesses the worst case scenario. It outlines that even if the noise levels were to increase by the same factor of 2,2 (which is a factor of Nuclear-1 versus Koeberg) this would still not have a serious impact. Also note Eskom is not at this stage considering any specific vendor. Also refer to response (6).

Your comment (17)

P.2 5th paragraph, quoting – “It was considered probable that a 50 MW OCGT peaking power plant proposed for the Thyspunt site would result in a noise impact on residences situated within 1000 m of the plant”. This proposed OCGT plant will need to be checked with Eskom, which is inclined to make them as efficient as possible by conversion to CCGT configuration, as in the case of the Ankerlig plant at Atlantis. Unless Eskom make a clear statement one way or the other whether this plant will start with an OCGT configuration and be converted later to a CCGT configuration, or whether it will be a CCGT plant right from the outset, what their intention is must surely have been established. The effect that the latter configuration may possibly have on the noise intensity needs to be established. An investigation of the CCGT plant at Atlantis should provide the necessary answers.

A specific point which might even lead to a *reduction* in noise would be that of the blast from the jet engines which will have been dealt with through a suitable expansion technique where it is finally emitted into the atmosphere. If all that exhaust gas first has to go through the CCGT heat transfer plant (ie steam generators), its pressure and energy will be even further reduced, thus presumably reducing its noise intensity from where it is finally emitted into the atmosphere.

Estimated data should be available in the noise specialist’s reports in the relevant EIRs for the two EIA processes which were carried out for the Ankerlig peak power station - qv.

Response (17)

The OCGTs for this plant are for emergency purposes only and will not be utilised to feed into the grid. Therefore the OCGTs will not be converted to CCGT.

Your comment (18)

P.10 Table 2 Typical rating levels for noise in districts, Footnote 1, quoting – “NOTE 1 If the measurement or calculation time interval is considerably shorter than the reference time intervals, significant deviations from the values given in the table may result”. I note that the reference time intervals have been given in the glossary at the beginning of this report. It would obviously be helpful if a reminder about this was given here.

Response (18)

Your comment is noted.

Your comment (19)

P.13 Section 1.2.5 Revised regulations, 2nd paragraph, quoting – “The contents of the above draft NCR have subsequently been incorporated in the Department of Environmental Affairs and Tourism Draft Model Air Quality Management By-Law - - -”.

I suggest rewording the sentence as follows: “The contents of the above draft NCR were subsequently incorporated into the then Department of Environmental Affairs and Tourism Draft Model Air Quality Management By-Law - - -”, the DEAT having been changed to the DEA by our present government.

Response (19)

Your comment is noted.

Your comment (20)

General comment – I commend the author for the excellently clear and annotated photos of the sites (Figures 1, 2 & 3) which are given in this report.

Response (20)

Thank you.

Your comment (21)

P.20 Table 1 – I assume that the data in this table relate to the dimensions of the existing PWRs on the Koeberg NPS site. This should be mentioned.

Response (21)

The data presented are for the typical PWR plants that are currently in the market and in operation.

Your comment (22)

P.20 Section 3.1.1 Assumptions and limitations, 2nd paragraph, quoting – “The proposed NPS will comprise the same technology as that at Koeberg”.

This sentence would better reflect the actual situation if it was to be reworded something like: “The proposed NPS will comprise Generation III PWR technology, i.e. updated from that which was used in the existing Generation II PWRs at the Koeberg NPS”. The second sentence “Namely - - - reactors” could then be deleted.

Ditto, quoting from the same paragraph – “It was considered that a high degree of confidence could be placed in the extrapolations from Koeberg to the new NPS. This included the transformer oil cooler fans that were found to be the major sources of noise emission (refer to Section 3.1.3)”.

Although extrapolating noise from the transformer oil cooling fans at the existing Koeberg NPS to the Nuclear-1 NPS could be valid, I would assume that the technology of new design features for noise intensity reduction may well have been considerably improved over the past 30 to 40 years. These fans are not exclusive to a nuclear power station. Have the manufacturers of such ancillary plant as is

supplied for both the Areva and Westinghouse PWRs been approached for information about this? I doubt if the nuclear plant designers will have had any input in the design of these cooling fans, although they may possibly have provided the manufacturer with a specification, of course.

The question in my mind is this: by extrapolating the measured data from the existing Koeberg NPS, is this providing a worst case scenario? If this is likely to be the case, as I suspect, then maybe some mention of this fact should be included in this report at an appropriate point. Although the following statement is made at the end of the same paragraph: "Should it transpire, upon receipt of quantitative data of the actual machinery to be installed at Nuclear 1, that there would be a significant difference in sound power spectrum levels of noise emitted by the major noise source(s) then a more accurate adjustment to the results flowing from this study could be made", none-the-less the DEA will be expecting to be able to make its decision in its RoD for the go-ahead for this project on the basis of data which are provided in the Final EIR. If statements are included to the effect that these data could be subject to amendments at a later date, but for which there's no information available at the time the FEIR is submitted to the DEA, I have no idea what response this may elicit from the DEA, nor what effect this may have, if any, on a possible delay in issuing what would be hoped to be a positive RoD.

This isn't an academic point: it is matter of how the EIA Regulations will be interpreted by the government department which prepared them, a matter about which I don't have any answer. Maybe the question to ask here is: has the precedence already been set by some earlier EIA process for which a positive RoD has been issued, even though uprated information would only be made available at a later date? I would suggest that Eskom needs make its decision very soon on what nuclear reactor type it is intending to have for the Nuclear-1 NPS. But it should be noted that I&APs would need to be informed of these late developments because they are an integral part of the EIA process. In the absence of further information, my confidence level is some way below 100% that Eskom won't encounter approval problems from the DEA. This negative scenario obviously needs to be averted.

However, maybe the alternative is to demonstrate that, by using the data for the existing Koeberg NPS, this is setting a *worst case scenario* and that any later data from uprated plant will confirm reduced noise emissions.

Response (22)

Comment on cooling fans: The comment is correct in that there may be improved power plants that are already operating. The extrapolation from Koeberg is the conservative ("worst case scenario") approach, since the vendor-specific information cannot be sourced as there is no vendor selected by Eskom at this stage.

Your comment (23)

P.22 Figure 5 – this Google Earth photograph shows the Koeberg NPS from the air with remarkable clarity – I must check it out! I assume that Google haven't been in conflict with the government iro the National Keypoints Act. (I wonder: do the US allow Google to take such clear photos of their own nuclear power stations?)

Response (23)

Your comment is noted.

Your comment (24)

P.24 1st paragraph, quoting – "At location 4 no noise emanating from the nuclear reactors was audible". Location 4 is the road on the seawards side of the services building. That there was no

discernable noise was very interesting because, inside the reactor containment buildings, the noise from the three primary circuit pumps in each building is presumably quite high. There's also no mention of the secondary coolant pumps and the noise from them, nor the seawater intake cooling pumps, which have a capacity of 40 m³/s for each of the two coolant systems. Presumably none of these pumps produce much sound. Perhaps some comment on this apparent lack of measureable noise from them should be noted.

Response (24)

Your comment is noted. The dominant noise at Location 4 is from the sea and is based on noise levels recorded by the noise specialist on site.

Your comment (25)

P.27 Figure 6 Predicted dB contours at Duynefontein – the data presented in this figure show two NPS units separated by about 250 metres (which seems to be rather high), with the greater part of the sound intensity directed towards the sea. If a third reactor was to be necessary, one can visually gauge the extra spread of these contour bands. I assume that Eskom has predetermined the locations for the reactors.

Response (25)

Eskom has not pre-determined the locations of the reactors. As indicated above, specific vendors have not yet been selected. The spacing of the reactors will be determined by a number of factors, including the environmental sensitivities on the site.

Your comment (26)

P.34 Figure 10 Predicted dB contours at Thyspunt – the same orientation for the super positioning of the data taken from Figure 6 for Duynefontein seems to have been used for Thyspunt. Is there a reason why the reactor units have not been aligned more or less parallel with the beach as in the case of the Duynefontein and Bantamsklip sites?

Response 26

The reactor units have been aligned with the coast in Figure 10 of the revised Noise Report included in the Revised Draft EIR.

Your comment (27)

P.34 Section 3.5.3 Assessment of noise from OCGT peaking power plant – how will these data compare with that from a CCGT plant? Has Eskom stated that they will only be using the OCGT configuration?

Response 27

The OCGT configuration was the only configuration assessed. Eskom has stated that they will only use an OCGT configuration.

Your comment (28)

APPENDIX E24 HUMAN HEALTH RISK ASSESSMENT

General comment - Is it known if the agreement between the DEA and the NNR indicates that all the comments from I&APs, together with responses, will be included in the relevant reports on which the NNR will adjudicate, as is the case with the Final EIR documents submitted to the DEA?

Response 28

Eskom's application to the NNR for licensing of the proposed power station has not yet commenced and will only commence once the vendor has been selected. The NNR's licensing process does make provision for public hearings and is subject to the provisions of the Promotion of Administrative Justice Act, 2000 (Act No. 3 of 2000), as are all authorisation processes to which the public has access. The NNR's process is therefore required to be an open and transparent process.

The agreement between the DEA and the NNR indicates that the DEA would not "make a pronouncement on the acceptability" of radiological safety issues, and that this issue falls firmly within the ambit on the NNR licensing process. However, at the DEA's request, information relevant to radiological safety issues has been included in the Draft EIR.

The Public Participation process during the EIA process is therefore independent to the NNR process and responses in terms of the NNR process would need to be submitted separately.

Your comment (29)

P.3 Last paragraph, quoting – "For purposes of the EIA, it is acknowledged that the NNR will issue a license for the establishment of *an NNR* at any particular site - - -" [*My italics*] This sentence seems to be either incomplete, or should the second NNR be NPS? The NNR won't need to issue a license to itself to allow it establish an NNR office at a NPS site!

Response 29

Your comment is noted. NNR will be changed to NPS.

Your comment (30)

P.20 Section 4.1.2, last paragraph - in the last line the word "pressure" needs to be changed to "pressurised".

Response 31

Your comment is noted.

Your comment (32)

P.30 Section 5.1.1 Construction phase – although this report as prepared relates specifically to issues for which the NNR are the responsible national authority, none-the-less the radiography of

welds using radioactive sources needs some mention, although the radiological safety considerations for this work are normally the responsibility of the Department of Health, Radiological Division, with whom any constructors using radiography sources must be fully registered. There will obviously be Eskom employees on the site during this construction phase whose radiological safety during such work has to be considered as well as that of the construction workers.

Radiography work would also require to be done on welding carried out on any pipework at a NPS during its operational lifetime, whether or not it is associated with the actual nuclear plant, both for weld fault diagnostic and new weld checking purposes.

I suggest that it would be relevant for a brief mention of radiography work to be included in this report.

Response 32

Radiography of welds is performed in both construction and operational phases of the plant, as stated in the comment. There are standard controls within Eskom to manage radiography sources, as well as the control of personnel during the performance of such activities.

Your comment (33)

APPENDIX 25 TRANSPORTATION SPECIALIST STUDY IMPACT ASSESSMENT PHASE

P.26 Subsection b) – what is referred to as Napoleon Street in Fig.4.4 is shown as Napoleon Avenue on my Map Studio map for Cape Town.

Response 33

Your comment is noted. Any changes required will be made during the revision of the Draft EIR.

Your comment (34)

Although I suppose that traffic lights from this road to the R27 intersection would be convenient for the residents of Duynfontein, I can't see any more people using this exit if the Nuclear-1 project was to be located at this site because there's a complete embargo on any more housing being built in this township, i.e. within a distance of 5 km radius from the existing Koeberg NPS, restrictions on any further development having been permanently applied by the NNR. From the point of view of this specific EIA process, I would have thought that traffic lights at the main access road to and from Koeberg (called Otto du Plessis Drive on my Map Studio map) where it intersects with the R27 – see Fig.4.3 - would be more relevant as an alternate to the proposed additional road markings. However, I note in Subsection (iii) on the previous page that the PGWC didn't approve the proposed upgraded "signalling" at this intersection.

Response 34

Your comment is noted.

Your comment (35)

I note that the word “signalling” rather than “signage” has been used to indicate *road markings*, rather than *traffic lights* (“robots”). Is “signalling” the officially accepted terminology which is used by the PGWC’s Traffic Department for *road markings*? If so, then dare I ask what their technical term is for signalling with the use of traffic lights? Have these terms been confused?

Response 35

When an intersection is controlled by a traffic light it is referred to as a signalised intersection.

Your comment (36)

P.27 Figure 4.5 – What is called *Ou Skip Road* in this figure is shown as *Otto du Plessis Drive* on my Map Studio map. One or other must be wrong, but because these roads have been there ever since the 1970s, and my Map Studio map of Cape Town is upgraded to 2007, I would find it difficult to believe that such a mistake would have survived for so many years without rectification. The same name situation also applies to Fig.4.6, although my Map Studio map indicates *Otto du Plessis Drive* as turning sharp right at this intersection, with the road which continues north being unnamed.

Response 36

Your comment is noted. The source of the naming of the roads in the Transport Report was different to the one you have used. Both “Ou Skip Road” and “Otto du Plessis Drive” are used for different sections of this road. In the Transport Report, only “Ou Skip Road” has been used for the sake of consistency.

Your comment (37)

P.31 Section 4.9 Mitigating Actions Required - although I suppose that it would cost a lot more than additional road markings or signage, is there any basic objection to this intersection with the R27 being made as a large roundabout? The R27 is a major trunk route, with a 120 kph speed restriction, although obviously this can be restricted in the vicinity of intersections, as in the case of the Melkbosstrand / R27 intersection. If the money was available, overpasses would be preferable for this intersection, obviating any need either for traffic lights or a roundabout. This would probably be essential if the R27 had been a motorway.

However, isn’t there another aspect to consider, namely heavy articulated vehicles turning into Otto du Plessis Drive to go to the Koeberg NPS? Such vehicles would be bringing in new fuel elements to the NPS; taking low and intermediate wastes to Vaalputs; and bringing in and removing any large replacement items for the nuclear and generating plant, as well as for the switch-yard. So there will always be heavy articulated vehicles using this intersection. A large round-about forces the corners of the intersecting roads to have large radii of curvature, thus making it easier for such vehicles to negotiate them. (I understand that superheavy articulated vehicles wouldn’t come from the Cape Town direction because of a number of bridges with insufficient load capacity).

However, this situation wrt superheavy vehicles will surely apply to the main access road inter-section with the R27 for the Nuclear-1 NPS, if this site is selected? Which logically leads to arguably a rather important point: maybe the accesses from the R27 to *both* NPS sites should be combined into a single major intersection? But preferably leave the Napoleon Avenue intersection out of the equation altogether. Just look how it is shown going round a projecting block of houses on the Map Studio map of Cape Town, with two sharp corners.

Although the cost of what is considered to be the best option may exceed the financial allocation that can be provided by the PGWC – plus the SA Roads Agency? – Eskom could probably provide some useful % of the funding. It would undoubtedly represent a tiny fraction of the total cost of the Nuclear-1 project.

Not being familiar with the Bantamsklip or Thyspunt areas I can make no sensible comments about them, except that negotiating those superheavy articulated loads should not be overlooked at Thyspunt. (According to Section 9.3 the use of a barge to move very heavy plant, etc, to Bantamsklip would only be considered as a last resort).

Response 37

The R27 is a Class 1 expressway with a current speed limit of 120 km/hr located in a rural environment. Therefore, taking into account the speed limit of the road, the roadside environment and sight distances, upgrading this intersection to a traffic circle would reduce the safety of the intersection. Upgrading the R27 / Koeberg Main Access to a traffic circle would in addition not assist with conveying heavy, articulated vehicles through this intersection. These vehicles (depending on their geometry) would probably have to drive over the top of the traffic circle to enter and exit the Duynefontein site.

Your comment (38)

P.47 Clause (iii) – what is a “grade separated structure”? It needs to be briefly explained in the report.

Response 38

Your comment is noted. An explanation will be included in the revised report to be included in the Revised Draft EIR.

Your comment (39)

P.54 paragraph just under Figure 8.18, quoting – “The construction of a bypass upstream of the bridge should be undertaken to traverse the Modder River”. There is nothing to suggest that the by-pass of the existing bridge would become a permanent short stretch of double carriageway on the R27 for a short distance on either side of the bridge. Would this not help to justify the cost of the second bridge?

Response 39

This by-pass could be the permanent upgrade of the Modder River Bridge due to the fact that this by-pass should be more structurally accurate than the current bridge to be able to convey the exceptionally heavy vehicles.

Your comment (40)

P.69 Figure 10.5 and p.71 Figure 10.9 – no explanation has been offered why these junctions are recommended to be roundabouts (“traffic circles”), which are often the preferred type of junction to ensure the continuous free flow of traffic on major roads, whilst other intersections are recommended

to be dealt with by widening plus road markings. They would need to be negotiable by the sort of wide self-propelled transport shown in Fig.10.13, of course.

Response 40

Your comments are noted. With the reduced construction traffic estimation these intersections will not require upgrades.

Your comment (41)

P.76 Section 11.1 Access – it would be helpful if the map for Duynfontein showing the locations labelled as Access 1 & 2 was reproduced at this point. The document should be made more user-friendly to readers, especially for those of us using the downloaded copy. No maps are even provided to clearly indicate the geographical location of the sites, with the major roads marked. If they are intended to be included in Appendices 1, 2 & 3 for the traffic models, please note that these three appendices are completely blank.

My comments will surely be relevant to both the Bantamsklip and Thyspunt sites, I would imagine, and with the local I&AP inhabitants surely requiring this access information to be provided on a proper map?

Response 41

Your comments and recommendations are noted. Locality maps have been provided in the amended report to be included with the Revised Draft EIR.

Your comment (42)

General comment – the Cape Town Rapid Bus Transport (BRT) scheme will eventually be continued right up to Atlantis, using the R27. That part of the scheme from Cape Town to Tableview is expected to become operational in November, 2010. However, there's been absolutely no mention of the scheme in this report. Although obviously BRT buses won't be diverted off the R27 to the existing and future NPS sites, there will presumably be a need to seriously consider some major stopoff / pickup point to serve both NPS sites, Eskom presumably providing its own buses from the stop-off point to the relevant NPS.

This reinforces the point which I made above that access to the whole complex from the R27 should be concentrated at one point, Access 2 being a relatively minor access point. It would appear to be important that Arcus Gibb (Pty) Ltd approach the Transport Department in the City of Cape Town to ascertain the details for the extension of the BRT scheme to Atlantis. Whilst the majority of professional and technical staff may choose to continue to use their own cars even after the BRT scheme is operating, general staff are much more likely to choose to use it.

Quoting from the 5th paragraph in the Executive Summary, Introduction – “The Duynfontein site requires no significant upgrades during the construction and operational phases of Nuclear-1 with regard to intersection upgrades and heavy load transport road upgrades”. Therefore only the existing access point from the R27 is being considered for both NPS sites. None-the-less, surely more consideration needs to be given to this intersection in view of the intended extension of the City of Cape Town BRT scheme, which will certainly be up an running long before the construction work on Nuclear-1 is completed.

All this assumes, of course, that Duynefontein will be selected for Nuclear-1. But exactly the same arguments will be relevant if a later NPS is located at Duynefontein, presumably by which time the BRT scheme will have been running for a few years.

Response 42

Your comments are noted. The transport specialist has indicated that the number of public transport trips that will be generated during the operational phase of Nuclear-1 at Duynefontein will be minimal. The current public transport system and the proposed BRT system that will operate on the R27 will be adequate for the additional trips generated.

Your comment (43)

P.25 Section (a) indicates the existing road from the R27 to the Koeberg NPS shown in Fig.4.3 as *Access 1*, clearly a major access road to the NPS and certainly for heavy vehicles; the Napoleon Avenue intersection with the R27 shown in Section (b) Fig.4.4 hasn't been given an access number; whilst the Ou Skip Road intersection shown in Section (c) Fig.4.5 is indicated as *Access 3*. Therefore it is not unreasonable to assume that the intersection shown in Fig.4.4 should be *Access 2*, an access number which is used fairly frequently in the text of this document.

Now, going to Section 11.10 Mitigating Actions Required, quoting the first dotted comment: "Access Road 2 should be used to access Nuclear-1". And here, of course, is where the absence of a geographical map may have confused even Arcus Gibb, because this access point would surely be a most improbable one to persuade staff to use in preference to Access 1, which the majority of staff using their cars are likely to use en route from the R27 to the Koeberg NPS (except for those staff living in Duynefontein and Melkbosstrand). Please also note that the Nuclear-1 site is further north of the existing Koeberg NPS site, which would increase the imperative to use Access 1. It is an impossible route for heavy articulated vehicles to use.

Additionally, this recommendation from Section 15 Recommendations could only be applied to Access 1: "□ Construction of an access road to Nuclear-1 off the existing Emergency Access Road to the Nuclear-1 site"

RECOMMENDATION: provide properly annotated geographical maps of the areas for each of the three sites to avoid any further confusion. I would also suggest that it would be very helpful if Appendices A, B and C for the traffic models for the three sites are completed expeditiously and provided to I&APs for comment as soon as possible, and preferably *before* the final EIR is sub-mitted for comment.

Response 43

Your comments and recommendations are noted.

Your comment (44)

Section 11.10 - the second dotted point ends with an "and" as though further clauses were intended to be added. Is this the case - is there something missing?

Ditto, 12th dotted point, quoting – "Eskom should acquire 130 buses to shuttle construction workers during the AM and PM peak periods and as stand-by emergency evacuation vehicles"

I would respectfully suggest that it is left to Eskom to decide what arrangements it will prefer to make for worker transport. Therefore I suggest rewording this clause to read: “Eskom will need to make arrangements for 130 buses to be made available to shuttle construction workers during the AM and PM peak periods and as stand-by emergency evacuation vehicles”

Response 44

Your comments and recommendations are noted. These passages have been amended accordingly.

Your comment (45)

P.108 1st dotted clause – “Access 2 should be used to access Nuclear-1”. I have already queried the recommended use of this access above.

Response 45

Your comments and recommendations are noted.

Your comment (46)

APPENDIX E26 EMERGENCY RESPONSE ASSESSMENT STUDY

P.10 Section 1.1 Description of Proposed Project, 2nd paragraph, quoting – “Eskom proposes to construct a nuclear power station in line with the philosophy of the European Utility Requirements (EUR) for LWR Nuclear Power Plants”. Asking the question here, although it may be answered elsewhere in this report: has Eskom agreed this EUR concept with the NNR?

P.12 Regulations 5th dotted point – this item is highlighted separately from the preceding four items which are specifically South African legislation and regulations. This item is a set of European requirements for light water moderated reactors which European utilities are required to comply with for emergency planning purposes, and reference is made to an Eskom document [NSIP-01344] which has been prepared to reflect the requirements in this European document. Neither this Eskom document nor the EUR document are mentioned in the references.

The NNR normally establish the requirements which have to be fulfilled i.r.o. radiological matters affecting a nuclear reactor, including the emergency plan. I have read neither of the above documents, and I am wondering why neither the one nor the other has been included as an attachment or at least references being given, and what sources one can go (ie urls) to in order to download either the one or the other. The NNR are surely going to ask for the EUR document if they aren't already familiar with it. They would also expect to receive Eskom's NSIP-01344 document, unless it has already been separately submitted to the NNR for approval, of course. However, no information has been provided on this issue.

May I recall the unfortunate situation which arose with the first EIA process for the PBMR, which came to a halt because documents were attached by Eskom to the EIR which was submitted to the then DEAT which hadn't been provided for public scrutiny. Earthlife Africa took the matter to court and they won their argument i.r.o. the documents, not in any way on the technical content of the final EIR. I would suggest that great care be taken where the above two documents are concerned that a similar situation isn't invoked by whatever organisation may wish to do so for this EIA process. As in the case of the PBMR EIR, it wasn't the DEAT which had laid any objections to the additional documents, but Earthlife Africa. In the current EIA process, by invoking similar reasoning, although neither the DEA nor the NNR may object to the provision of these two additional documents without public scrutiny, it

cannot be forecast who or what organisation may wish to object, possibly even with deliberate and malicious intent.

Section 56(6) of the draft EI Regulations, 2008, says this: “When complying with this regulation, the person conducting the public participation process must ensure that –

- a) information containing all the relevant facts in respect of the application is made available to potential interested and affected parties, and
- b) participation by potential interested and affected parties is facilitated in such a manner that all potential interested and affected parties are provided with a reasonable opportunity to comment on the application”.

Although there is no specific comment in these clauses on how the final EIR documentation is to be categorised specifically in relation to attachments when it is submitted to the DEA or NNR, as appropriate, this doesn't mean that legal gymnastics can't be used to wriggle a way through the meanings of these regulations to achieve a positive outcome in court if attachments are supplied which haven't been provided for public scrutiny. It would be unwise to take any risk of having this EIA process thwarted on a legal issue, not on its technical content.

Response 46

Eskom has had preliminary discussions with the NNR regarding the application of EUR requirements to the proposed Nuclear-1 development. Current indications from the NNR are that the NNR will accept the EUR philosophy for the proposed Nuclear-1 plant.

Your comments are noted. No documents will be submitted to the DEA as part of the Final EIR if the public has not been given the opportunity to review said documents. Eskom's application to the NNR for licensing of the proposed power station has not yet commenced and will only commence once the vendor has been selected. Commencement of this expensive and complicated process in parallel to the EIA process is not practical since NNR cannot issue a nuclear installation license without an identified and confirmed site.

The NNR's licensing process does make provision for public hearings and is subject to the provisions of the Promotion of Administrative Justice Act, 2000 (Act No. 3 of 2000), as are all authorisation processes to which the public has access. The NNR's process is therefore required to be an open and transparent process.

The agreement between the DEA and the NNR indicates that the DEA would not “make a pronouncement on the acceptability” of radiological safety issues, and that this issue falls firmly within the ambit on the NNR licensing process. However, at the DEA's request, information relevant to radiological safety issues has been included in the Draft EIR.

Your comment (47)

P.22 Sensitivity of the Affected Environment – the question of the effect of low doses of ionizing radiations on living organisms is often a matter of dispute, and whether in fact organisms obtain actual benefits from such exposure. They are, after all, continuously subjected to exposure to ionizing radiations from naturally occurring radioactive sources. However, it is purely for the ease of interpreting radiation measurement data that the simplifying concept of stochastic was introduced by the ICRP, i.e. there being assumed to be no threshold below which ionizing radiations don't cause any harm. In the situation being considered, the only effect on the environment arising from an accident with a PWR type of reactor will arise primarily from released radioactivity which becomes airborne, although waterborne radioactivity could also be involved in the case of inland based reactors. I would

suggest changing this heading to read: “Stochastic Sensitivity of the Affected Environment to Released Radioactivity”

Response 48

Your comments are noted.

Your comment (49)

P.27 The way that a number of words in Tables a), b) & c) have come out, with their last letters on the next line, looks a bit untidy, and it’s also confusing. For example, the “l” of Regional has come out in the *centre* of the line below it, which some people might interpret as the number “1”. A change in font size should cure the problem. The same comment applies to the four following similar sets of tables.

Response 49

Your comments and recommendations are noted.

Your comment (50)

P.31 Decommissioning Phase – I am pleased to see the comment that applying too much effort to define exactly how decommissioning will be carried out in 70 to 90 years time, using the understanding of today’s technology that is currently used, may be rather different all that long time into the future. In 60 or more years time professional nuclear staff will be just as knowledgeable, perhaps even more so, in the techniques that will be involved in decommissioning then, as they are in using today’s technology, now.

However, as was mentioned in a response to the point I raised about this issue at the Key Stakeholders Nuclear-1 EIA meeting held on Tuesday, April 20, at Duynefontein, details would necessarily have to be included based on today’s technology.

Response 50

Information on decommissioning techniques included in the EIR and specialist studies is necessarily based on today’s technology.

Your comment (51)

P.32 Last line of Section 4, quoting – “ - - - should include alternatives that are real *alternatives* to the proposed activity”. [*My italics*] Word repetition: perhaps it could be reworded as “ - - - should include alternatives that are strictly relevant to the proposed activity”

Response 51

Your comments and recommendations are noted. The report has been amended accordingly.

Your comment (52)

P.33 Section 4.2 Thyspunt, Summary, quoting – “Infrastructure: On the infrastructure measure (i.e. transport and communications networks, industrial activities and, in general, anything that may influence the rapid and free movement of people and vehicles in the region of the site), Thyspunt is

currently not suitable due to the fact that the region is relatively undeveloped. *However, this could be mitigated by the infrastructure development that will take place during the commissioning of the NPS* [My italics].

I don't understand the phrase that I have italicised wrt infrastructure development taking place *during the commissioning phase*. The sort of incident, although of extremely low probability, that could occur during the operational phase could, in theory, also occur during the commissioning phase, the only difference being that, for the initial startup, the reactor core is fuelled completely with new fuel, in particular containing no fission products. Surely whatever infrastructure development that it is considered essential to have in place *at any time* needs to be dealt with *before* commissioning?

There isn't the same problem which might have arisen with the Koeberg NPS, if for no other reason that, in contrast to everyone being on a learning curve in the 1970s and 80s with the existing Koeberg NPS, being the first power nuclear facility in South Africa, Eskom, the City of Cape Town and the NNR now have many years of experience in what is necessary, together with later recommendations which have been made by the NNR from time to time. Therefore surely there is adequate knowledge for the respective municipalities, Eskom and the NNR to be able to get together and discuss what features are most likely to be required at Thyspunt in order to facilitate emergency evacuation, for example. There might be some aspects which I would anticipate would be relatively minor details needing to be sorted out after commissioning, but I wouldn't expect them to be in any way dramatic, seriously affecting the safety of the public through having been omitted.

Or is there some vital point which I have missed in all this?

Response 52

All emergency requirements will be in place before new fuel is loaded in the reactor and will be put in place during the construction phase of the development.

Your comment (53)

P.33 Section 4.3 Duynefontein, Summary, quoting – “The Duynefontein site is considered the least preferred site due to the population factor”.

It is stated that there's a population of over 83 000 people living within a radius of 16 km from the proposed site. No data have been provided to show how this figure compares with the populations within this distance from existing nuclear power stations in the US, or Britain, or continental Europe, or China, or Russia, or France, for example. And what about the locations for new nuclear build in these countries? Are they any further from large populations within a 16 km radius? What is the size of their surrounding populations? Look at the map of the USA for the area from Harrisburg to the Three Mile Island nuclear power station: TMI-1 is still operating as far as I am aware - it most certainly was when I visited this power station in 1984. And that, of course was after the incident at TMI-2.

Have the air photos of the dust plume from the Eyjafjallajokull volcano in Iceland been looked at critically, how remarkably closely it moves along a very narrow path with only a few degrees in its spread? Although the elevation of this plume will vary depending on its heat of emission from the volcano, how would this compare with a plume which stays close to the ground under steady wind conditions? No information about these aspects has been offered. A wide sideways spread of the airborne particulates will eventually occur, of course, as a long plume becomes subject to crosswind variations, but normally only after considerable dilution because of its spread over long distances, even though it's gradual.

What path would it be expected that a plume emitted under steady wind conditions would track from a nuclear reactor? Would it be any different other than in a narrow vee? Particulates are particulates anywhere, whether or not they happen to be radioactive. They possess no special properties where wind dispersion is concerned. Size and height are the criteria for how far they will spread.

Would it be preferred to have a nuclear power station in a totally isolated area, where living far from towns and cities would make life intolerable? Where any sense of community spirit of staff and their families would be non-existent, even if families would wish to live under such conditions of isolation. Are there any nuclear power stations in the world which have been constructed in totally isolated locations? If the answer is yes, then what has been done for their staff and families to make life even a little tolerable? And, more to the point, what is their staff turnover rate?

Highly educated professionals and technical staff are not nomads: they have never been brought up under such conditions, compared with nomads where they exist have lived this sort of life for many generations, and are tuned to it. Such a lifestyle, even if in partial isolation, would be likely to greatly prejudice the safe operation of a reactor. The same criteria will apply to the general workforce.

In South Africa the most likely candidates to fit in with such isolation would be the Khoisan, although I would hazard a guess that to find sufficient well educated individuals to train to operate a multi-reactor nuclear power station might well pose some logistics problems.

The comment from the report which I have quoted above would appear to have a strong subjective character about it, not objective, which isn't the wisest way on which to base a very important decision. This subjectivity is emphasised because the comment, which is tantamount to saying this is the only way to go without any other considerations being taken into account, has also been made in isolation of all the various factors which I have mentioned above. The phrasing needs to be amended in order to ensure that it is strictly objective. I can see no justification for being subjective only because of the absence of the information which I have suggested is required for the locations of nuclear power stations in other countries across the world. These data need to be included in order that I&APs are given the opportunity to formulate objective opinions about location iro population density and highway access.

If, of course, South Africa feels that it has become necessary to set a precedent for the world iro locating nuclear reactors in highly remote areas, this wouldn't be done through a specialist's report but in discussion with the NNR, on whose shoulders the responsibility would fall for such a decision to be made and promulgated in appropriate legislation. However, setting such a precedent wouldn't be a world-beater because other countries have, in general, adopted different location criteria.

The matter of location makes it all the more important to know exactly what the EUR document recommends on the subject.

Finally, let me repeat the quotation from the report given in my previous comment – see above - namely: "Infrastructure: On the infrastructure measure (i.e. transport and communications networks, industrial activities and, in general, anything that may influence the rapid and free movement of people and vehicles in the region of the site), *Thyspunt is currently not suitable due to the fact that the region is relatively undeveloped*" [My italics]. An interesting comment, isn't it!

Response 53

The Emergency Planning (EP), as outlined in the NNR requirements, describes measures to be taken in case of an emergency evacuation taking into account the population densities in the EP zones. Currently Eskom has adopted the EUR standard for Emergency Plan radii. Due diligence with respect to the feasibility of the emergency plan will need to be demonstrated by Eskom in licensing the plant with the NNR.

Your comment (54)

APPENDIX 27 SITE CONTROL ENVIRONMENTAL IMPACT REPORT

P.2 Executive Summary, Duynefontein, 1st dotted comment - “• The site is already developed as a NPS with full access and site control, which has been in place since commissioning in 1979 and prior to this during construction”.

Commissioning refers to the final checks which are carried out on the reactor control room electronic and plant electrical equipment that it is all working correctly, immediately prior to actual startup of the nuclear reactor, i.e. the first time that the core goes critical. The commissioning phase continues throughout all the testing work to ensure that all the reactor systems are working properly. When this phase is satisfactorily completed, the commissioning will continue to ensure that the secondary system, generating plant and seawater cooling system are working correctly. Only after all this work has been completed, and the NNR are satisfied, will the operating phase be allowed to start, finishing with the final connection to the national grid. At the time in the 1980s when this final approval-to-operate phase was reached, the licensing authority was the AEC’s Licensing Branch at Pelindaba.

When I first joined Eskom in late 1982 neither reactor had gone critical. Sometime during 1984, as I recall – it might have been 1983 – some ANC cadre set off an explosive device on the top of one of the reactor pressure vessels which had to be repaired, resulting in a delay of about 6 months to commissioning. I was transferred to Koeberg from Megawatt Park in 1984 and neither reactor had gone critical at the time. I don’t recall the exact years for criticality (the startup of the two reactors was staggered), but it must have been 1985 or 1986. This can be checked with the Koeberg staff.

As far as I am aware, if Duynefontein is selected for the Nuclear-1 NPS, this will be located just north of the existing Koeberg NPS. The wording of the above clause gives the impression that the Nuclear-1 site will be an extension of the existing Koeberg site. This is not the case: the two power stations will be separate entities. The commonality is that the whole *area* is owned by Eskom, and there could be a new joint Visitors Centre.

Response 54

Commissioning is referred to as the performance testing of the systems in the integrated design. This various stages of commissioning activities span performance test prior to loading the fuel, testing with fuel loaded, testing with the reactor critical and finally the grid connection tests. Upon satisfaction of the NNR, the Operational Phase will be granted. It is incorrect in the main report that commissioning took place in 1979 as construction was still in progress at the time. This point in the report will be rectified.

In the case of another NPS being built north of Koeberg inside the Eskom owned property, this will be licensed separately from the existing Koeberg license. However, the management of the Nuclear Installations inside the Duynefontein site would remain the same.

Your comment (55)

P.8 Section 1.1 Background, 1st paragraph, quoting – “The plant will have a commercial lifespan of ~60 years”. I suggest the following rewording: “The plant will have a design operating life-span of ~60 years”.

The two existing KNPS reactors had a design life of 40 years. This was recently extended by the French to 50 years. Similar Westinghouse PWRs, on which the French modified ones at Koeberg were based, are typically having their lifetimes extended to 60 years. I anticipate that the two PWRs at

Koeberg will eventually follow this 60 years operating life. Now, the Generation III PWRs, both the Areva EPR and the Westinghouse AP1000 types, one of which Eskom will be choosing for its Nuclear-1 project, have a design life of 60 years. Following similar reasoning, therefore, whichever reactor manufacturer Eskom selects, I would anticipate that their lifetime could also be extended beyond 60 years, maybe to 70 or 80 years.

Response 55

The proposed change to the statement is acceptable and has been made in the amended version of this report included as an appendix to the Revised Draft EIR..

Your comment (56)

P.11 5th dotted point, quoting – “• The area controlled zone in which there will be no access to the public will be 800 m from the inner plant security fence”. 800 metres will, of course, also stretch out to the sea, where access control may not be so easy to achieve as it is on land. Obviously a fence cannot be constructed offshore. How is it envisaged that boats at sea are to be made aware that they are transgressing this 800 metre zone? The most likely boats are fishing and recreational ones.

Response 56

Your comments are noted. The restricted area will be gazetted in terms of the Seashore Act. All skippers of seagoing vessels will be informed of the requirement. The area will be visually monitored by Eskom.

Your comment (57)

P.11 2nd paragraph after the last dotted point, quoting – “Acquisition of nuclear sites must be completed by Eskom as soon as possible after the sites have been selected so that nuclear requirements can be incorporated into the spatial plan”. I don’t understand this comment. I was under the impression that the Duynefontein, Bantamsklip and Thyspunt sites were already owned by Eskom. (The same goes for the Brazil and Skulpfontein sites up the west coast).

Response 57

Eskom do own all the properties mentioned above. However, Eskom’s position is to acquire properties located within 2km of the site boundary. Hence additional properties may need to be purchased.

Your comment (58)

P.11 Paragraph immediately before section 1.2.3, quoting – “Construction will take place and will be contained within the site security fence”. What about the storage areas for the construction materials? Thus in the case of Duynefontein, one of the other reports indicates that the construction storage area will be located across the R27 from the main entrance road to Koeberg. However, I don’t recall the necessity for offsite storage areas being mentioned for the Bantamsklip and Thyspunt sites. (The proposed storage area for the Duynefontein site is over-run by Port Jackson trees, thus in its present state it contains little of environmental interest).

Response 58

Construction materials will be stored in a laydown area on site.

Your comment (59)

P.12 Clauses 1 & 2 – it is a pity that Figures 3.1, 3.2 and 3.3 (Thyspunt, Bantamsklip and Duynefontein, respectively) haven't been appropriately numbered to be able to view them at this point in the report. Hunting around an electronic copy of the report offers no concessions to the inconvenience of doing so, as distinct from being able to simply page through a printed report. Or at least a reference to the report pages could be given. (They are in fact on electronically numbered pages 17, 19 and 21, respectively, or report pages 14, 16 & 18, respectively).

Response 59

Figures 3.1, 3.2 and 3.3 are contained one page after they are mentioned in the amended report.

Your comment (60)

P.13 Table 1.3 – the long term duration for the impact of an activity on the environment is given as “ - - 16-30 years. Where the impact ceases after the operational life of the activity either because of natural processes or by human intervention”. The figure of 30 years may be relevant to the existing KNPS, although its life has already been extended to 50 years, but the Nuclear-1 PWRs have a design life of 60 years, with a possible extension after that period. So, is there something that I have missed which explains the apparent anomaly iro design life?

Ditto, 'Permanent' line, quoting – “The impact will persist indefinitely *based on current knowledge and technology*” [*My italics*] I am pleased to see that it is acknowledged that *knowledge and technology* are likely to evolve over the next 60 years.

Response 60

Your comments are noted.

Your comment (61)

Page 13 Table 1.5, Low, quoting – “Impacted natural, cultural or social functions and processes will never return to their preimpacted state”. Does this rather desperate situation not need some explanation? For example, other developments may take place over such areas which would virtually leave the area permanently covered with concrete, but still be developed for useful purposes. Or indigenous flora may have been totally destroyed by invasive aliens.

Response 61

In impact assessments, the change in environmental conditions from current conditions is assessed. The current condition of the environment (prior to change) is therefore of prime importance. If an environment's flora has already been completely destroyed, the degree of change (or the impact) will be less than in a pristine environment. If the environmental were already covered in concrete, there would be very little if any impact.

Your comment (62)

P.14 Table 1.9 Significance ratings – I think the *Intensity, Extent and Duration Ratings* under the heading *Consequence*, ie *High* and *Low* are intended to give a message about which I am obviously

missing something in view of the tuning of the ratings. For example when one can get the identical rating under both the high and low consequences.

Response 62

Although high, medium and low intensity ratings occur under both the high and low consequence headings the rating is related to the scale of the extent and duration of the activity. Thus an activity, whilst being of high intensity, will have a low consequence rating if the scale of the extent and duration of the activity is low. Whereas the same activity with the same intensity rating could have a high consequence rating if the scale of the extent and duration of the activity is increased.

Your comment (63)

P.33 Section 6 Conclusions and Recommendations – for the first dotted point see my first comment to this report above.

Response 63

Your comments are noted.

Your comment (64)

APPENDIX 28: COMPARISONS BETWEEN THYSPUNT, BANTAMSKLIP AND KOEBERG SITES

P.3 Figure 1 – it is most unfortunate that this map hasn't been reproduced in its original colour. There seems to be no reason for this not to have been done for copying on to a CD Rom. This applies particularly to the triangles which are merely shades of grey.

Response 64

The original report provided by Eskom was black and white.

Your comment (65)

P.4 2nd paragraph – this is the first time I have read anywhere the number of reactors which would be constructed for this Nuclear-1 project, depending on which manufacturer Eskom decides on, namely either two Areva EPR 1600s [1 600 MW(e)], or three Westinghouse AP1000s [1 184 MW(e), or possibly the 1 250 MW(e) version]. All other specialists' reports have assumed just two reactors.

Response 65

The Areva EPR and Westinghouse AP1000 are only two of the possible technologies that may be used. In the assessment of impacts the "worst-case scenario" footprint with a maximum generating capacity of 4000 MW has been used. The impacts of the proposed plant are based on an envelope of characteristics, based on a number of different suitable technologies. This envelope is defined in the Consistent Dataset (Appendix C of the Revised Draft EIR).

Your comment (66)

P.4 Section 3.1 High Technical Losses, quoting – "The current system losses in the Cape network amount to roughly 400 MW(e)". Is this loss given for 400 VAC transmission or 765 VAC transmission?

Although the vague term “technical” losses are referred to, is this not primarily due to transmission losses?

Response 66

Your comments are noted.

Your comment (67)

P.6 1st dotted point – “TDP”? What is this - no table of abbreviations has been provided

Response 67

TDP refers to “Transmission Development Plan”.

Your comment (68)

P.8 Section 4.3 – meaning of “SCO”?

Response 68

SCO refers to “Synchronous Condenser Operation”.

Your comment (69)

P.10 Table 4.4.3 Future Generation possibilities – The renewable energy line in this table indicates that no wind energy facilities are being considered for the Eastern Cape. This is wrong. The Thyspunt site will be almost completely surrounded by no less than three wind generator sites, one of them being Eskom’s. The EIA processes are understood to have been started.

Response 69

It is correct that there are a number of wind generation sites that are currently the subject of EIA processes around Thyspunt. In addition, the draft Integrated Resource Plan, released in late 2010, indicated that wind generation needs to be a part of the energy mix in South Africa.

Your comment (70)

APPENDIX F DRAFT ENVIRONMENTAL MANAGEMENT PLAN

P.23 Section 3.2.1 General, Subsection b), Social Interaction, 2nd dotted clause, quoting – “ . Open liaison channels with nearby residents and I&APs must be developed, to facilitate communication and field concerns or complaints”. Eskom is obligated by legislation to establish a Public Information Forum at each of its nuclear power stations. (NNR Act, Section 26(4), Regulations on the Public Safety Information Forum (PSIF). Unfortunately I haven’t yet down-loaded the amended copy of these regulations, so I don’t know the year of these latest amendments).

The required PSIF was established at the KPNS as soon as the regulations were promulgated, ie around 2006 - 2007. In view of this statutory requirement, I would suggest that this clause could be

reworded to read something like: “ · Open liaison channels with nearby residents and I&APs through the statutory Public Information Forum, to facilitate communication and field concerns or complaints”

I would assume that, in the interim construction period, Eskom could make use of its existing KNPS public communications infrastructure rather than establishing a completely new Nuclear-1 communications organisation – if this Nuclear-1 project is constructed at Koeberg, of course. This would need to be checked with Eskom, but this wouldn't be unreasonable to have a common communications organisation for the two nuclear sites because they would be adjacent. It would obviously be a different matter if two utilities were involved.

Response 70

Your comments and recommendations are noted and the EMP has been amended accordingly.

Your comment (71)

Ditto, 5th dotted clause, quoting – “ · A Public Safety Information Forum (as required by DoE) will be established to disseminate relevant information during the operational phase”.

I would suggest that the phrase in parenthesis, viz (as required by DoE), would better reflect the reality of the situation if it was changed to (as is required by the NNR Act). It's the legislation which has prominence, not some government departmental pronouncement. The department is limited to communicating reminders that this or that legislation is required to be complied with or, alternatively, it can also make recommendations, the terms of which would require to be discussed and agreed with Eskom.

Ditto, 10th clause, quoting – “ · No casual employment or informal trading will be allowed to take place at the entrance to the site and on-site”. Although the need for this constraint *specifically for informal trading* during the construction phase can be fully appreciated on security grounds, local populations - who will only see opportunities for trading with a large construction labour force having a continuous movement of personnel to and from the construction site, being dictatorially denied to them for obscure reasons - will need to be told exactly what the situation is in respect of the legislation, i.e. the National Keypoints Act. Once operational, potential local traders would be expected to be no longer interested, of course.

Ditto, 11th clause, quoting – “No untrained employees will be allowed to work on-site”. I note that the matter of training facilities is dealt with in the next section, Labour. Obviously work progress cannot be slowed down whilst employees are being trained, but I would assume that a substantial staff turnover would be expected in a workforce of over 7 000.

Thus is there a strong argument for locating Nuclear-1 at Koeberg, where there is the largest potential workforce for construction activities from the nearby town of Atlantis. There's no equivalent potential labour concentration either at Bantamsklip or Thyspunt.

Response 71

Your comments and recommendations are noted.

The recommendation for preventing staff recruitment at the entrance to the construction site is due as much to the recommendations of the Social Impact Assessment study (in order to prevent undesirably social impacts), as it is to the requirements of the National Key Points Act. A proliferation of unemployed people at the entrance to the site throughout construction could potentially result in unnecessary traffic, littering, and a number of other social ills. It is a firm recommendation of the Social

Impact Assessment that recruitment should take place in the communities where the workforce is likely to be drawn from.

Your comment (72)

P.24 Section d) Employment , 1st dotted clause – Asgisa? This hasn't been included in the list of abbreviations. We don't always remember these acronyms which we read in the press, etc, so a few details about it need to be given in a footnote.

Response 72

ASGISA stands for the Accelerated and Shared Growth Initiative South Africa (ASGISA). This abbreviation has been included in the list of abbreviations.

Your comment (73)

P.25 Table 3-1 Environmental Induction Training, 2nd dotted clause, quoting – “ . The Contractor shall ensure that all NPS site staff are aware of, and understand the contents and conditions of the EMP, the key environmental issues and the consequences of non-compliance”

This clause refers to “all NPS” – i.e. Nuclear Power Station site staff: is this meant literally, i.e. does it refer to Eskom's NPS staff for the Nuclear-1 project, or to construction company staff? It needs clarification: thus construction company staff would be expected to be referred to as “on-site construction staff” – they don't become NPS staff merely through the geographical location of their work.

Response 73

Your comments and recommendations are noted. This refers to Eskom and construction company staff and will be rectified in the EMP.

Your comment (74)

P.26 1st clause, quoting – “ . Ensure that the footprint of the NPS takes into account the environmental characteristics of the site”. The individual on whose shoulders this responsibility is placed is the Project Manager. What knowledge will this individual necessarily have about the footprint vs the environmental characteristics of a site in order to be able to formulate sensible decisions? Unless the project manager has the appropriate training, shouldn't the ECO also be involved with him?

Response 74

The EIR has recommended that the following condition be included in any authorisation: A team of specialists including heritage, fauna, flora and wetland specialist need to be included in a “walkdown” assessment of the site after authorisation is received in order to determine the optimal position of all infrastructure.

Your comment (75)

P.30 Item (i) – this includes a number of designations, e.g. Sw3 or P5. In so far as this is where I have got to in reading this report on my monitor screen from the CD Rom, I haven't come across anywhere where these designations are listed, and there's no indication in this table, either. In fact no maps have

been included in this report to show where they are, especially those indicated to be “wetlands east of Koeberg NPS”. Unless I have missed something, information needs to be added to make these designations meaningful, and providing maps would be an obvious help.

Response 75

Your comments and recommendations are noted. These designations were made in the wetlands report. A reference to the relevant section and/or maps in the wetlands report will be included in the EMP in the Revised Draft EIR.

Your comment (76)

P.49 Last comment – I was associated with a recreational club in Cumbria, Britain, which had a seaside site on sandy farmland, about 10 to 12 metres above the beach. At one end of the site there was a very interesting narrow wetland caused by a freshwater stream, which ran all the year round, the water disappearing near to the head of the beach. This wetland was totally destroyed following an extremely heavy rainstorm, all which remained being a cavernous gully in the sand. Is there any way to prevent this sort of destruction on this west coast site?

Response 76

At all three sites, a requirement has been set that the power station should be an offset at least 200m from the high water mark in order to prevent impacts of sensitive coastal features. The Hydrological Report (Appendix E6) contains a number of recommendations to prevent and mitigate soil erosion and other water-related impacts.

Your comment (77)

P.67 Abnormal heavy loads, 9th dotted comment, quoting – “ . The R27 / Napoleon Street intersection should be upgraded to a signalised intersection. If Access 1 is grade separated then the signalisation of this intersection may not be required”

This Napoleon Avenue upgrading has been mentioned in the transport report. This avenue encircles the northern end of Duynefontein village, going round two sharp corners. I fail to see how this road can be regarded as being suitable for heavy vehicles. Isn't the existing main road entrance to the KPNS far more suitable? It's a straight road except near to the KNPS. Why was this particular upgrading ever suggested (elsewhere in this draft EIR) at all?

Who wants heavy vehicles skirting round the village when the main access to the KNPS is no-where near to any private dwelling houses? If the Duynefontein residents don't strongly complain about the idea of upgrading the Napoleon exit off the R27 I would be very surprised. I think that the whole idea is ludicrous, and I don't apologise for being so blunt about it. Just look at the map of Duynefontein on page 203 of the Map Studio map of Cape Town, 2007 edition.

Ditto, 13th dotted comment, quoting – “ . Eskom should acquire 130 buses to shuttle construction workers during the AM and PM peak periods and as stand-by emergency evacuation vehicles”. Here we have effectively an instruction to Eskom that it has to “acquire 130 buses”, etc, which, by implication, means actually purchasing them. It can assuredly be accepted that this matter can be left in Eskom's hands with perfect safety to decide what arrangements they wish to make to have this number of buses available. Therefore this clause should be reworded as follows: “ . Eskom will need to make arrangements to have 130 buses available to shuttle construction workers during the AM and

PM peak periods and as stand-by emergency evacuation vehicles”, the latter requirement arising because of the proximity of the KNPS, of course.

Response 77

Your comments and recommendations are noted. Napoleon Street has not been recommended as an abnormal and heavy load vehicle access route. The upgrading of the intersection is proposed to improve local traffic access to the R27 due to increased traffic on the R27.

The recommendation regarding acquisition of buses has been amended accordingly.

Your comment (78)

P.68 Emergency procedures, 1st dotted clause, quoting – “ . Key staff shall be trained in emergency response and all staff made aware of the emergency procedures”. By “key staff”, I assume this refers to key construction staff. Eskom staff will have been given their necessary indoctrination sessions. This clause needs to be clarified.

Response 78

The recommendation refers to construction staff.

Your comment (79)

P.73 Hydrology, 2nd dotted clause, quoting – “In terms of IAEA Safety Guide No NS-G-3.5 (IAEA, 2003) the drainage system needs to handle up to the 1:10 000 year storm event”. I&APs are not normally going to have ready access to this IAEA Safety Guide to check out what is expected in such a storm event. Therefore an appendix needs to be added which summarises whatever data the IAEA provides in their guide.

One might well ask the question: has Eskom given consideration to this guide in relation to the situation at the existing KNPS, which was constructed way back in the 1970s to early 1980s, i.e. over two decades before the IAEA guidelines were issued? The implications are rather important. I have already raised this issue through the KPSIF.

Response 79

Your comments and recommendations are noted. Koeberg Nuclear Power Station was designed in accordance with the legal and other requirements that were in force at the time. Your recommendation regarding the inclusion of the relevant IAEA guideline is not supported. Whilst it may be ideal to include a number of relevant documents for information, the volume of material in this EIR is already prohibitive. References to relevant documents are provided in all specialist reports.

Your comment (80)

Pp 76 & 77 Sub-section a) Fauna (vertebrate), 1st dotted clause, quoting – “ . The site fence must prevent (vertebrate) wildlife from entering the site”. Now let us go to -Sub-section b) Fauna (Invertebrate), 1st dotted clause on p.77, quoting – “ . No solid perimeter walls should be erected”

Although for requirement b) I can appreciate the reason for objecting to solid walls, primarily where insect access is concerned for low flying insects, requirement a) is tantamount to saying exactly the opposite where the smaller vertebrate fauna, e.g. snakes, are concerned. What about voles burrowing

under the fence? Is there some fine mesh screen which can be used for, say, the bottom 50 cm of a fence and which will last for 60 years or more and not degrade, unless it was to be made from stainless steel?

These two requirements need to be reworded so as to be properly compatible with their intentions. It would not in any way be adequate to invoke the argument “Oh, but we all know what is meant” as a means of rejecting the requirement for eliminating the inconsistency.

Response 80

Your comments and recommendations are noted. As indicated above, subsequent to the issue of an environmental authorisation for the power station, a walk-down assessment of the authorised site will be undertaken by a team of specialists. Details of designs such as fencing will be required to be reviewed by the specialists to ensure that it meets their requirements.

The recommendation to prevent wildlife from entering the site is relevant to mammalian fauna. Smaller faunal species such as snakes and moles would continue to be able to enter and leave the site.

Your comment (81)

P.77 3rd dotted clause, quoting – “ . Rescue and relocation is generally not recommended for invertebrate species for a number of reasons”. Three reasons are given. I don’t think that under any circumstances one is ever going to see environmental staff at a NPS rushing about like fun with nets inside the perimeter fence capturing insects and releasing them on the other side of the fence! The insects will have come from the outside of the fence in any case, and presumably they will only be present because they are indigenous to the area. I suppose that some objectionable alien species could also be present but, without a knowledgeable specialist being permanently present on site, who would be likely to be able to recognise them? I confess to being unable to suggest how best to escape from this conundrum!

Response 81

Your comments and recommendations are noted. The statement regarding rescue and relocation of insects was made in the context of sensitive species potentially being affected by the proposed footprint of the power station. In the case of vertebrate fauna, it is often possible to relocate such species. The point that was made by the specialists is that similar relocation exercises are generally not effective for invertebrate species.

Your comment (82)

P.78 Marine systems, 1st dotted clause, quoting – “ . The release of hypersaline effluent will be controlled in line with the Water Permit requirements”. I believe that the daily arising of the effluent from the desalination plant which is intended to supply desalinated water to the NPS is mentioned in another report in this draft EIR. Disposal in deep waters is recommended in order to avoid problems which could arise with sea life if it was to be disposed in shallow waters, from whence dispersal and dilution could be relatively slow.

Could an effluent pipeline be run out from the coast for about 1 km from low tide seawards to the release point on the seabed? Or could the hypersalinated effluent be pumped onto some suitable vessel which periodically goes out to sea and disposes of it overboard? It’s higher density would ensure that it will sink fairly rapidly. However, the former would arguably be the less expensive method of disposal.

Response 82

Brine emanating from the desalination plant will be disposed of via the outfall pipes. Adequate mixing of the brine with the huge volumes of water in the outfall (from the condenser) will reduce the concentration to low levels. This alleviates the concern of marine life disturbance as a result of hypersalinity. This water will be at a slightly elevated temperature, and will be disposed of in the surf zone to allow for adequate mixing, thus limiting the thermal plume.

Your comment (83)

P.78 Economics – Who is meant by the “Client Office Manager”?

Response 83

The Client Office Manager represents Eskom Holdings Limited and the future power station operations functions in the early preparation of the project and negotiations with the vendor. He is responsible for developing the user specifications for the plant and infrastructure. He is responsible for ensuring that the user specifications are met during construction and commissioning of the plant and facilities.

Your comment (84)

P.84 last dotted clause, quoting – “ Institute strict speed limits on the site including the owner-controlled conservation area (recommended maximum – 40 km/hr) and construct speed humps / rumble strips to enforce these speed limits”.

This clause, together with the first five dotted clauses on p.85, give procedures which would apply if Eskom retains ownership of the land once all the facilities have been demolished and any residual radioactive soils, etc, have been removed. We are looking at something like 120 to 130 years time from now. Land rehabilitation techniques may possibly change over this period, of course, and Eskom – or whatever utility it might be in 120 to 130 years time - could even decide that, once they have got the land all ready for whatever rehabilitation measures are considered to be necessary at that time, it may wish to hand over the land to whatever the equivalent will be to the present day Cape Nature Conservancy instead of carrying out the job themselves. The management of the operating utility in 120 to 130 years time may decide that electricity generation is strictly its business, not land rehabilitation. There could even be legislation which strictly controls land rehabilitation, even with a national organisation being allocated the specific responsibility to carry out such tasks. We just don't know.

My point is that this EMP should make it clear that those parts of the management plan which relate to becoming relevant in 120 to 130 years time can only be spelt out for the purposes of this EIR in the knowledge of how such matters would be carried out, now. No one can sensibly predict what the requirements will be those many years ahead. We must avoid getting trapped in the now-now syndrome: what will actually happen will arise only a long time into the future. Is it reasonable to impose a legally binding agreement on people and organisations over 100 years ahead? The demands of certain inflexible I&APs have to be met, now, of course, but that rider of time will remain unchanged – it marches on inexorably, for ever!

Response 84

Your comments and recommendations are noted. An EMP is by its very nature, a dynamic document and the measures that are written into an EMP now may not necessarily be applicable in 100 years'

time. It is mentioned in the EMP that this document may be revised from time to time, as circumstances change or as technology changes.

Your comment (85)

P.85 Visual – in relation to the actuality of timescales, and that no new reactors will be operating *for at least 9 to 10 years* from the start of construction, plus the 30 years after decommissioning the reactors and fuel pools, the significant changes could well stretch from 120 to 130 years into the future. I would suggest that the 60 years mentioned is a rather short timescale.

Response 85

Your comments and recommendations are noted. The current information at the disposal of the EIA team is that the lifespan of the power station will be 60 years. This may well change in time if the power station is refurbished at some point in future. Please refer to response 81 above regarding the dynamic nature of the EMP.

Your comment (86)

P.86 Section 4.1 Dune geomorphology – whatever the stability of the dune areas is under “normal” weather conditions, the possible effect of that IAEA predicted 1:10 000 year meteorological event - however it’s defined - is a spectre which will remain permanently in the back-ground, of course. It mustn’t be overlooked that the event could occur tomorrow.

Response 86

Your comment is noted.

Your comment (87)

P.87 Table 4-2 – for the reader’s convenience, I suggest that reference should be made to Table 4-5 which deals with monitoring the wetland areas.

Response 87

Your comments and recommendations are noted

Your comment (88)

P.130 Environmental Procedure: EMP – note, p.29 of 26, *et al.* I like it!

Response 88

The page numbering has been corrected in the Revised Draft EIR.

Your comment (89)

APPENDIX G - no comments

Response 89

Your comment is noted.

Should you have any queries with respect to the above please do not hesitate to contact Arcus GIBB.

Yours faithfully
For Arcus GIBB (Pty) Ltd

A handwritten signature in black ink that reads "Jm Ball". The signature is written in a cursive, flowing style.

Jaana-Maria Ball
Nuclear-1 EIA Manager