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**Johannesburg**

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Attention: St Francis Bay Residents' Association, on behalf of the Thyspunt Alliance

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. Bongi Shinga of ACER (Africa) entitled "Comments on Draft Scoping Report: Appendix E10 – Air Quality" refers.

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

**Your Comment (1)**

This submission focuses on the Thuyspunt site in respect of the Air Quality Study (Appendix 10) prepared by Airshed Planning Professionals (Pty) Ltd dated January 2010.

It is noted that this is a review of the report only and that the actual Modelling was not re-run or tested and thus parameters / variables were not examined. It is anticipated that this has been undertaken through the peer review and it would be appreciated if this report could be forwarded onto me for consideration.

It is also noted that issues around Health and Safety, radiological emissions / radionuclide emissions were not considered in this submission. Although this is an important and integral component of the EIA it is noted that it will be dealt with through the NNR. Furthermore it requires highly technical specialist input and detailed base data, which is not currently available and at this stage goes beyond the scope of this review. It is assumed that at the time when the application is made to the NNR that substantially more site specific and detailed studies and modelling will be made available in this respect. In the meantime it is noted that appropriate submissions, specifically in this respect have been made by Mr M. Kantey of Water Course cc and Mr H. Thorpe of the St Francis Residents Association.

Regarding the report the following is submitted without prejudice:

**Response (1)**



GIBB Holdings Reg: 2002/019792/02  
Directors: R. Vries (Chairman), Y. Frizlar, B Hendricks, H.A. Kavthankar, J.M.N. Ras  
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A list of divisional directors is available from the company secretary.



Your comments are noted. However please note that 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 (2)**

In terms of on-site air monitoring, significant gaps exist. As stated on page 5 of the executive summary:

“The recommended air quality monitoring programme provided in Section 5.2.1 should preferably be initiated a year prior to construction. This would provide an adequate baseline air concentration trend which would incorporate all seasons. This programme must include both non-radionuclide and radionuclide compounds (as stipulated by the NNR)”

Further to this, on page 96: “Similar to Bantamsklip, no ambient air sampling data are available to provide historical air pollution concentration quantities at Thyspunt. A three-month sampling exercise was completed during March to May 2009”

A year’s baseline monitoring is required and to date the three-month sampling is insufficient. This is further complicated by the aim to begin terracing in January 2011. This is worrisome and needs to be urgently addressed.

In terms of the air modelling, as stated in the report, air models cannot predict air emissions exactly (page29). The potential inaccuracy is compounded by the following gaps:

- Page 20: The exact location and shape of the stockpiles is unknown, therefore how can this be modelled and how can the emissions be calculated?
- Page 104: It was assumed that “the stockpiles were placed in close location to the plant with shortest routes assumed for the roads from the plant to the stockpiles”. If this is not the case then emissions may be under-predicted.
- Page 106: “In order to account for annual differences, five year’s hourly average meteorological data have been utilised in the simulations” and further “... (SAWS) Station of Cape St. Francis for the period 2004 – 2007 was selected for Thyspunt”. This means that the models were based on 3 years of meteorological data, not 5 years as indicated. Furthermore, the CSF wind data used in the model varies to that at Thyspunt which may produce inaccurate results. Therefore it is imperative that the modeling be based on the appropriate Thyspunt data especially since this area experiences high wind velocities that differ to the CSF data. This is especially pertinent given the extent of the site clearing, excavation works, and stock piling in an area characterized by fine sand during the construction phase and the effects of radionuclide emissions during the operational phases. In light of the above, it is vital that the data used for modeling is correct, if the modeling is inaccurate it would falsely show a lower concentration at the nearby residential areas to the east (Cape St Francis) and north east (St Francis Bay).
- In the first line of the Limitations and Assumptions in the Executive Summary: “The lack of knowing the specific vendor for the NPS is considered to be significant gap” and the last recommendation: “Air dispersion modeling must be repeated using the

source terms for normal and upset emissions of the successful vendor and onsite meteorological data prior to construction of the NPS". This gap may drastically change emission results and casts a shadow of doubt overall the results discussed in the report.

### **Response (2)**

Page 106: Were possible, five year's data were used. Cape St Francis had three year's data available. This will be corrected in the text. In terms of the CSF wind data. Subsequent monitoring data at Thyspunt (2008 to 2010) indicate very similar weather conditions and the modelling is still appropriate. The modelling will be updated as part of the Nuclear Licensing procedures. Lastly when compared to the recent Thyspunt observations, the CSF data showed very similar wind speeds. On a number of occasions, the CSF wind speeds were slightly higher. The predictions would therefore be very similar in magnitude.

Limitations and assumptions – Executive Summary: The simulations would be repeated with more information on the source term and meteorological measurements, as part of the NNR licensing procedures. The EIA emissions were based on an envelope of emissions, release heights and locations of releases in an attempt to cater for the two designs considered for the nuclear power station.

### **Your Comment (3)**

A further problem associated with the models include:

- The isopleth maps which do not show proposed roads and surrounding receptors.
- Sweeping statements, based on the modelling results, such as "The predicted impacts would be similar at all three sites" (page 166) are false given the higher emissions as shown in table 3-13 (radionuclides) , 3-8 (particulate emissions) and 3-12 (emissions from Backup Electricity Generators – SO<sub>2</sub>, NO<sub>2</sub>, PM<sub>10</sub>) at Thyspunt. The high emissions have not been highlighted in the report, which is seen to be a down-fall.
- Further to the major issues, the report has many formatting problems, such as incorrect table headings, naming locations and data periods incorrectly and miscommunications between the text and headings (seen on pages 69, 68, 74, 75).
- This highlights the apparent fact that the available modelling results cannot be relied upon given the significant gaps.

### **Response (3)**

Sweeping Statements: The emissions from the backup generators and radiological emissions would be the same, irrespective of the site. Wind generated dust was predicted to be higher at Thyspunt than the other two sites. This is partly due to the higher wind speeds and partly due to the increased excavation activities at Thyspunt. However, due to the relatively better ventilation that the stronger wind offers, the impact distances of particulates from construction would be similar to Bantamsklip.

The higher maximum ground level concentration and dose value predicted at Thyspunt is due to the nearby hills. The magnitudes are similar further away from the proposed sites.

Formatting Problems: The will be rectified in the revised Air Quality report which will be made available to the public for review and comment as part of the revised draft EIR.

Available Modelling Results: The modelling was conducted using the available information at the time. As a result we used an envelope to include the possible alternatives (i.e. design and location options).

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, appearing to read 'JMBall', written in a cursive style.

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Jaana-Maria Ball  
Nuclear-1 EIA Manager