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Our Ref: J27035

28 February 2011

Attention: Mr. P. Bosman

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) refers.

Arcus GIBB (GIBB) acknowledges receipt of the above-mentioned letter. We thank you for your valuable comments and your participation in the Eskom Nuclear Power Station 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:

ECONOMIC ASSESSMENT REPORT FOR NUCLEAR 1

Your comment (1)

The economic assessment report by consultants is a cost benefit study of the three possible sites named by Eskom for the construction and operation of a nuclear power station (NPS). The sites are Thuyspunt, Bantamsklip (near Hermanus) and Duynefontein (near Koeberg). Although there appear to be some mistakes in the report, e.g. the factory for the St Francis fishing industry is situated in Humansdorp instead of Port St Francis, these errors would not affect the conclusion drawn from a review of all the anticipated costs and benefits which is that

> ***"the differences in economic impact among the three sites are marginal. There are no fatal flaws in respect of any of them, and all of them would be suitable to accommodate Nuclear-1***."

There is no recommendation that Thyspunt be selected above the other sites. The reason that it has been selected must therefore be sought elsewhere.

Response (1)

In terms of identifying Thyspunt as the preferred site the comparative assessment of the three alternative sites by GIBB was based on the following:

- Results of the specialist studies: specialists have indicated the relative significance of potential impacts with mitigation at each of the three alternative sites;
- An integration workshop, involving all specialists, on 24 and 25 November 2009, where potential impacts and ranking of the alternative sites was discussed;
- Costs; and

- Transmission integration requirements.

Although there are obvious differences between the significance of the potential impacts of the three alternative sites, all specialists agreed that there are no fatal flaws at any of the sites (provided appropriate mitigation is implemented). The specialist further collectively agreed that all three alternative sites are suitable for development of a nuclear power station in time, given sufficient mitigation of impacts.

The impacts of high and medium significance after mitigation were considered important for decision-making. These impacts were further filtered to a manageable number of key impacts for the purpose of decision-making. The following decision factors were selected as most important for decision-making:

- Transmission integration factors;
- Seismic suitability of the sites;
- Impacts on dune geomorphology;
- Impacts on wetlands;
- Impacts on vertebrate fauna;
- Impacts on invertebrate fauna; and
- Economic impacts.

The Bantamsklip alternative would be costly because its location would require longer and larger transmission lines than either of the other two sites (900 km of combined 765kV and 400kV transmission lines at Bantamsklip vs. 500 km and 190 km of 400 kV lines at Thyspunt and Duynefontein respectively). The road and bridge upgrades that would have to take place to transport extra heavy loads from Cape Town harbour to Bantamsklip also contribute to the high costs of this site. The Bantamsklip alternative would be R 8 billion less costs effective than either of the other two alternative sites. Despite the positive benefits that could potentially be realised through conservation of the northern portion of the site, bearing the cost and integration factors in mind, the Bantamsklip site was regarded as the least preferred site alternative and was removed from further consideration for this application. Only Thyspunt and Duynefontein were considered for selection of a recommended site and were compared using a numerical ranking model that takes only the weighted (filtered) decision factors into account. Thyspunt was identified as the preferred site for Nuclear-1.

The most important argument in favour of Thyspunt with regards to biophysical impacts is the conservation benefits that would be realised through access control and active management of the site in the event of a nuclear power station being constructed there. This benefit would not be realised at Duynefontein, as the Koeberg Private Nature Reserve already includes the Duynefontein site. In addition the Thyspunt site has a considerably lower seismic risk profile, as well as being more favourably located in terms of Eskom's requirements for integration with the transmission system. The Thyspunt site is therefore recommended for authorisation in terms of this application. It is acknowledged that the Thyspunt site would experience environmental impacts of higher significance (particularly biophysical impacts) than Duynefontein. However, the conservation of the remainder of the site through access control and responsible long-term conservation management are significant positive impacts associated with this site. Mitigation of identified potential negative impacts recommended by the specialists and in this EIR must be ensured.

Your comment (2)

The only other comment that I have is to note that no sites other than those named were considered. I believe that the identification of the possible sites was made by Eskom some thirty years ago. There have been some very material changes in the country since then which have been ignored in the identification of possible suitable sites. One is that the whole political structure of the country has changed by the reincorporation of the previous "Bantustans" into the provincial structure of the country

and the other is that a new harbour and Industrial Zone has been established just North of Port Elizabeth. The focus of electricity demand in the Eastern Cape is likely to intensify in the Port Elizabeth area as a result. In these circumstances the logical place to seek a suitable site for a new NPS is as close as practicable to the area of maximum demand.

I understand that 30 years ago Eskom considered the possibility of a NPS near to where the Coega industrial development zone is today but rejected the site for security reasons because it was close to a "Bantustan". If this can be substantiated, or even if it cannot, the site should be subjected to the same investigation as the other three sites because it is geographically and for many other reasons (labour supply, proximity to a port, road infrastructure, construction and operation support services, proximity to the national electricity grid, impact on tourism, etc.) the obvious site for a new NPS.

If the site (Coega) is rejected there should be convincing reasons for doing so which should be made public.

Response (2)

Your comments are noted. In terms of the site selection process, the basis of the site selection process, namely the Nuclear Site Investigation Programme (NSIP), was reviewed during the Scoping Process and the specialists all considered the sites to be reasonable and feasible for Nuclear-1. This approach has also been approved by the Department of Environment Affairs (DEA) and the Final Scoping Report, in which certain of these sites were carried forward for further investigation in the EIA phase, and the Northern Cape site were not recommended for further investigation, was also approved by the DEA.

The NSIP included a wide range of specialist studies, such as engineering, social, geology, ecology and town planning. The EIA team, comprising the lead consultants and specialists, undertook site visits to each of the five sites (Duynefontein, Bantamsklip, Thyspunt, Brazil and Schulpfontein) in order to obtain an overview of the potential environmental risks and key impacts associated with the proposed Nuclear Power Station. Risks and key impacts associated with the construction, operational and decommissioning phases were identified and addressed in consultation with I&APs. This led to the recommendation that two of the original five alternative sites assessed during the Scoping Phase, namely Brazil and Schulpfontein in the Northern Cape, be excluded from further consideration in the EIA.

In terms of Coega IDZ and it being considered as a reasonable and feasible site alternative, GIBB was informed by the Coega Development Corporation that the Coega IDZ did not have available space in 2007. Although space for a nuclear power station is now available, due to other limitations (such as the need for micro-seismic monitoring), the Coega IDZ cannot in terms of this EIA process for the proposed Nuclear-1 be considered reasonable and feasible, as there is currently a lack of information regarding its seismic suitability.

In an evaluation carried out by specialists it was stated that it could take at least a period of 5 years to bring the geological database (micro-seismic monitoring program) for the Coega IDZ on par with what is currently available for Thyspunt Duynefontein and Bantamsklip site alternatives. This does not guarantee that a suitable site will be found in the vicinity of the Coega IDZ. In fact the position of the Coega Fault needs to be considered carefully before undertaking any geological investigations for nuclear siting in the vicinity of the Coega IDZ. The Coega fault runs across the southern part of the Algoa basin before extending into Algoa Bay near the Coega harbour, the currently available geological data, indicates that the Coega fault, which represents the easternmost component of a fault line with known Holocene reactivation, should be considered to pose a risk with regard to future seismicity.

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

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Jaana-Maria Ball
Nuclear-1 EIA Manager