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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 "*Thyspunt: The Case for a Total Review*" 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)
Changes since 1980

Since the Thyspunt site was selected in the early nineteen eighties, a number of important political, legislative, economic, and technological changes have taken place. These include:

- Advances in nuclear technology, resulting in Generation 111-type PWRs, with improved safety margins and reduced EPZs.
- Growth in the economy of the Eastern Cape, notably the Coega IDZ, with demand for a power station here;
- Huge cost increases in the provision of associated infra-structure.
- Concerns over climate change, leading to a need to reduce dependence on fossil fuels;
- Major new environmental legislation, imposing strict rules, specifically designed to protect the natural and social environment;
- Reunification of South Africa into one single state, and adoption of a model constitution, with its emphasis on public participation;
- Neglect by government over a period of 10 years of warnings that South Africa would soon be short of power generation capacity, with resultant need to rush through measures to address this.

Arguably the most important of these is Generation 111 technology. The claimed advantages of Generation 111 are spelt out in Ch 3 of the DEIR, "Project Description", Section 3.5 p. 3-3. They are:

- A standardised design for each type to expedite licensing, reduce capital cost and reduce construction time;

- A simple and rugged design, making them easier to operate and less vulnerable, to operational upsets;
- High availability and longer operating life than Generation II reactors - typically 60 years,
- Reduced possibility of core melt accidents;
- Minimal effect on the environment;
- Higher burn-up to optimise fuel use and reduce the amount of waste; and
- Burnable absorbers to extend fuel life.

As such, Generation 111 conforms with European Utility Requirements, and qualifies for reduced Emergency Planning Zones of 3 kilometres. This has immense significance for siting criteria, and raises the possibility of placing NPS closer to population centres, where they are required.

Response (1)

Your comment is noted, siting of a nuclear power station is not limited to the EPZ and safety aspects.

Your Comment (2)

Environmental legislation and alternative sites

The new **environmental legislation** requires very specific and detailed investigations into the potential environmental and social impacts of any proposed development, including the investigation of **alternative sites**. Consultants Arcus Gibb argue that their brief only extended to Nuclear 1, i.e. the first of the proposed five plants, and that they considered alternative sites in the form of the five sites originally selected in 1980. The community argues that Nuclear 1 is part of a much larger project, which will eventually include all five sites, and that this precludes regarding these sites as alternatives. It is highly questionable whether Thyspunt would have been selected as a site, had the original brief to Arcus Gibb have been to select the most suitable site in the Eastern Cape in the light of contemporary realities. Eskom's brief to Arcus Gibb is clearly deficient in this respect.

Response (2)

The selection of the five sites referred to was the culmination of the exhaustive Nuclear Site Investigation Programme (NSIP), in which several criteria, including economic, social, environmental and technical criteria were considered.

Eskom communicated their intention to develop a fleet of nuclear power stations and that their immediate plans are to develop at least three Nuclear power stations. However, the current application is for a single power station and therefore, the three sites that were identified as being suitable for investigation in the impact assessment phase are regarded as alternatives. This approach has been accepted by the Department of Environmental Affairs.

Any future environmental applications will have to be subjected to a similar process and such EIA processes will have to assess reasonable and feasible alternatives. Such alternatives are likely to include the current site alternatives but may include additional sites if progress is made with further site investigation studies which Eskom will embark on in the near future.

Your Comment (3)

The current EIA process

There is little sign that Eskom has taken these changes into account in its present planning. It has taken the five sites selected 30 years ago, and looked at no others. There would appear to be an assumption that all five sites are suitable, and that the only decision is which to develop first. Everything points to rushing the EIA process through as quickly as possible, as little more than a formality, paying lip-service to the process, with a pre-determined outcome, and public participation

relegated to little more than tokenism. Extreme leniency is being applied, on the grounds that the project is "in the national interest".

The result is the probability of a huge, environmentally and socially invasive, and possibly unnecessarily costly, industrial development on an unspoiled piece of coastline, and total change of character for a successfully developing adjacent tourism area, when potentially preferable sites are not even considered. This could legitimately be described as environmental vandalism, or an environmental tragedy. How this is consistent with the right to just administrative action as contained in the Bill of Rights, is not clear.

Response (3)

We take note of your comments. All relevant factors have been considered in the EIA process, including potential ecological, visual, social, economic and tourism impacts. The final recommendation must be based on a balanced approach to all these factors. The recommendation regarding the preferred site is based on the integration of all the relevant decision factors. Weighting of the decision factors was based on a consensus view by all the EIA specialists.

Your Comment (4)

Thyspunt

The public has never been informed on the positive reasons for the choice of Thyspunt in 1980. It is believed to be for its seismic and geological stability, low population density at that stage, and situation on the ocean for dispersal of cooling water.

Arguments against Thyspunt are the monumental environmental impact of placing a major industrial plant, across sensitive dunefields, on a piece of pristine coastline, in an established tourism area; development of the St. Francis area into a recognized tourism destination; the social impact on the established community; the change of sense of place; and the huge cost of associated infra-structure in terms of road up-grade and construction and transmission lines.

Response 4

We take note of your comment. Eskom's preference for a site in the Eastern Cape is documented in Appendix E16 of the Draft EIR. For technical reasons associated with grid planning on a national level, Eskom prefers to develop a power station in this province. With respect to the identification of the Thyspunt site specifically, the NSIP has identified this as a technically suitable site for a nuclear power station.

Your Comment (5)

Coega

Other thing being equal, the obvious site for a power station in the Eastern Cape is the **Coega** area.

Advantages of Coega

- Industrial Development Zone, with an almost unlimited appetite for power;
- Environmentally down-graded area;
- Deep-water harbour adjacent;
- Excellent road system in place for delivery and emergency evacuation;
- Two sub-stations close by;
- Source of potential labour in Motherwell;
- Prevailing wind off-shore;
- Sizeable areas of undeveloped coastal land.

Known disadvantages of Coega

- Known seismic fault and less favourable geology;
- less favourable ocean currents.
- not be possible to build an "off-the-shelf" NPS there.

Mitigation

This should be balanced against the infra-structural cost (between R5 & R10 billion) involved in building at Thyspunt. The question posed is whether these disadvantages cannot be mitigated, with such large funds available, at lower cost. We require evidence that this option has been examined in depth. If it has not, then it should be a pre-requisite to an ROD that this should have been done.

Other options

Should Coega prove unsuitable with mitigation, then Eskom should be seeking a site mid-way between Port Elizabeth and East London, which are the two economic hubs of the Eastern Cape.

This community does not deny that this project is in the “national interest”, but this does not justify making decisions with long-term negative consequences which cannot be mitigated, especially where there may be other sites which could avoid these problems, and the huge accompanying infra-structural costs. The “national interest” would be much better served by reviewing 30 year-old decisions in the light of contemporary realities.

Response (5)

Your comments are noted. Coega was considered as an alternative during the Scoping Phase of the EIA process. However, at that time, although the potential for additional electricity was welcomed by the Coega Development Corporation (CDC), it indicated that there was no suitable site available within Coega. These circumstances have now indeed changed, and recent communications with Coega during the EIA phase has indicated that there is space available for a nuclear power station. The currently available geological data, indicates that the Coega fault, which represents the eastern most component of a fault line with known Holocene (i.e. the last 11,700 years) reactivation, should be considered to pose a risk with regard to future seismicity. Thus, with the current state of knowledge the Coega IDZ is not considered to be a feasible option at this stage of the EIA. In addition the length of time that is required to undertake the necessary seismic investigations (a minimum of five years), and the urgency with which it is necessary to develop additional base load power generation capacity, Coega cannot be considered as a reasonable and feasible alternative within the scope of the current EIA process. Coega may be considered as a reasonable and feasible alternative during future EIA process for additional nuclear power stations.

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



Jaana-Maria Ball
Nuclear-1 EIA Manager