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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 *"Appendix 5, Comment on Transportation Report - Thyspunt"* 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.

Your Comment (1)

Terms of reference
These are limited to fairly elementary back-ground information, but include a visual inspection of the routes to the "Port" (Port Elizabeth?) and waste storage site (Vaalputs?).
Emergency Planning delegated to NNR.
Existing and future projections (5,10, 50 years) of the transport network.
Transport of hazardous materials.

Response (1)
Your comments are noted. The transportation study is currently being revised to include additional detail regarding the transportation of waste. Acquism has also been appointed to undertake an independent waste study for the EIA. Both studies will be appendices (Appendices E25 and E29 of the EIR, respectively) to the Revised Draft EIR.

Your Comment (2)

Major transportation issues posed byThyspunt

- Up-grades required to N2 to carry exceptionally heavy loads, and cost implications;
- Siting of Construction and Staff villages, and commuter implications;
- Proposal to take all traffic down Humansdorp Main Street;

- Social impact of use of R330 for exceptionally heavy and heavy loads and for commuter traffic;

- Realism and cost of constructing 10 km roadway for exceptionally heavy & heavy traffic on shifting dunefield possibly subject to plastic flow;

- Environmental impact.

- Impossibility of evacuation of Greater St Francis area in the event of a nuclear accident when the prevailing wind was blowing..

Response (2)

Your comments are noted and are responded to in the sections below where the above bullets are expanded.

Eskom will develop accommodation villages when the infrastructure of the surrounding towns cannot support the project accommodation requirements (like the Bantamsklip site).

1. Staff accommodation.

Limited staff accommodation will be required during construction and operation. It is Eskom's intention that staff will rent or purchase from the existing market. It is likely that the current market will not accommodate all the needs and therefore some supply will need to come from new developments to supply the need of the project. Accommodation for Eskom staff will therefore not be localized in a "village" but will be integrated into the communities of the surrounding towns. 2. Vendor general worker accommodation

The accommodation needs during construction will be significant and require planning. Eskom is currently busy investigating the availability of land on preferably the southern side of Humansdorp. The number of units that will ultimately be required is for vendor as well as availability of local work force dependant. The EIR states that a minimum of 25% of general workers will come from the local community and an accommodation village will be created for the rest of the people. Eskom will need to work closely with the local councils and planning departments prior to construction starting to ensure that residential developments can go ahead without negatively impacting on local infrastructure such as roads, water, sewerage, schools and clinics.

The social study has investigated these issues and provided recommendations to minimize the impact on the local communities.

Your Comment (3)

Opening statement

Thyspunt requires significant transport up-grades with regard to public transport and access during the construction phases. The R330 is proposed to be used for heavy load transport, and may require pavement structure up-grades to cope with the increased heavy loads. The Oyster Bay Road is proposed to be upgraded to a surfaced road to be used during the operational phase for surrounding staff access and as a required emergency evacuation route for areas such as Oyster Bay.

Response (3)

This is correct, the R330 pavement's structural integrity will be tested for the additional loading and will in all probability require strengthening.

Your Comment (4)

Limitations

There is still no clarity regarding the technology to be used, the vendor, or the siting of staff and construction villages. As with everything else, much remains speculative. It is unfortunate that Fig 10.14 does not appear on the CD, but from "information" received from various sources, and from the diagrams contained in the report, it is concluded that the ultra-heavy loads and most of the heavy loads will be delivered from Port Elizabeth, (requiring major upgrades of sections of the N2); passing

straight down Main Street, Humansdorp, and via the R330 to Sea Vista, where a new road will lead for 10 kilometres to Thyspunt. Once again, because of lack of detail on the specific technology, it is not possible to determine the actual volumes of heavy traffic.
Furthermore, no details are given on the turning area required for extra heavy loads.
It is speculated that the new villages are likely to be situated on the northern side of Humansdorp, or in Jeffreys Bay.,
We are told in Section 10.3.1 on p. 65 that the exceptionally heavy loads are expected to be approximately 42 metres in length, and either 5.3 or 8.2 metres wide. They are presumably of a similar height, although this is not stated. Also not stated in this report is that the loads themselves are expected to be in the region of 750 tonnes, and with their SPMT, will weigh in the region of 1000 tonnes.
All of this leaves huge questions unanswered, notably in relation to modifications to the N2 and the impact of all this traffic down the main street in Humansdorp.

Response (4)

The technology for Nuclear-1 has been chosen and stated in the EIR as Pressurised Water Reactor (PWR) technology. Based on this technology choice, the maximum number of abnormal loads and the maximum mass of components per unit is displayed in the revised Traffic Impact Report which will be made available for public comment and review as part of the Revised Draft EIR. Please see response # 5 concerning the abnormal loads.
Initial testing of turning radii for ultra heavy loads has been conducted and will require some construction at intersections. An initial assessment of the N2 for the abnormal loads has been done. The initial report indicates that (with some reconstruction), the routing is feasible. More detailed work is required with regard to bridge crossings to ensure the loading on the structure is within acceptable limits.

The routing of traffic through Main Road Humansdorp has been reviewed due to the potential impact and is addressed in the revised Transport Impact Assessment Report.

Your Comment (5)

Transport *Status Quo* assessment (p. 27 -33)
Studies of peak hour traffic are contained in Appendix C which is not supplied.
This section is purely concerned with the physical possibility of using various roads and intersections to transport the different types of traffic. There is no thought whatsoever given to the impact on the local community of such arrangements. The classic is the proposal to take all the heavy traffic down the Humansdorp Main Street, with a right-angled bend at the bottom. This will almost certainly involve demolition of buildings, and will transform the Main Street into a minefield of congestion and hazards. It is simply not acceptable to deliberately create traffic congestion on this scale in a commercial centre, which is already congested regularly while delivery vehicles block the road.

The very fact that such a proposal could be made, without discussion of its implications or possible alternatives, raises serious questions regarding the competence or due diligence of the specialists.Has the Municipality been consulted on such a major issue?

Response (5)
Your comments are noted. It is estimated that the total number of loads larger than 100 ton will be in the order of 63 loads over the construction period (54 months) with an estimated annual maximum of between 13 and 20 per year. Loads between 10 and 100 ton (for equipment) will be in the region of 200 during the construction time. All the abnormal loads requiring special traffic interference is regulated and special permits must be obtained to ensure minimal impact for residents and road users. All abnormal traffic will be moved during the late night / early morning hours when traffic volumes are very low.

Omissions to report have been rectified and will also be included in the Revised Draft EIR. Routing through Humansdorp Main road has been addressed in the previous comment (Comment 4).

Your Comment (6)

Thyspunt Construction Phase Impact Assessment (Section 10, p.56 – 67)
This section appears to be concerned purely with possible traffic back-up at intersections by 2018, and up-grades which may be required. Once again, there is no discussion on the overall impact, or on possible alternatives.

Response (6)
Social impacts have been addressed in the revised Social Impact Assessment Report (Appendix ??? of the EIR), which will be included in the revised Draft EIR..

Your Comment (7)

Exceptionally heavy loads (Section 10.3,p-. 65)
This, surely, must be one of the most serious challenges to the selection of the Thyspunt site. We are looking at loads of up to 1000 tonnes, 42 metres in length, between 5.3 and 8.2 metres in width, and presumably of equivalent height. These have to be conveyed from Port Elizabeth Harbour (why not Nqura?), through the streets of Port Elizabeth, along the N2, passing over and under numerous bridges, including Van Staadens River, Gamtoos and Kromme River bridges, through Humansdorp, along the R330 and a new road to be constructed over sand dunes which could be subject to plastic flow under wet conditions.

In such a context it would be reasonable to assume that a detailed indication would be given in the transportation assessment of the reality, implications and cost of such an exercise. No such luck. The entire matter is covered in one page (p.65), most of which is devoted to a description of the loads and their carrying vehicles.

All that is said is that a 1988 (Drennan) report investigated the feasibility of transporting heavy loads from Port Elizabeth harbour to the Thyspunt site, and that if the movement of exceptionally heavy loads is required, Eskom will undertake a detailed study of the transportation route from Port Elizabeth harbour to the Thyspunt site. Nothing else is said about the findings of the Drennen report
There is also reference to a preliminary assessment of the route undertaken as part of the study. The preferred route was allegedly contained in Fig 10.14, which does not appear on the CD. There is no discussion whatsoever of the findings of the preliminary assessment.

Once again, we are faced with lack of material information and fragmentation of the whole EIA process. The transportation route is a key element in determining the viability of the site. Whether or not the road system is able to sustain the loads required; what up-grades will be needed, and, above all, at what the cost, would be one of the very first considerations for any business venture considering such a proposal. Here it is being treated as an after-thought on a project costing many billions of rands.

At least some thought is given to minimising the impact of transporting these enormous loads, and avoiding unnecessary disruption of traffic on the N2. Unfortunately, because of failure to include Appendix C on the CD, it is not possible to discuss the findings.
A Traffic Management Plan still has to be devised. We would strongly support requiring exceptionally heavy loads to be transported at night. We are not talking about large volumes, and the disruption caused would be minimal.

On the other hand, we would like the Traffic Management Plan to impose strict limits on the use of the R330 for normal heavy loads. These should only be permitted during daylight hours. To have heavy

traffic passing St Francis Bay during the night would be intolerable. There is no reference to this in 10.4.

Response (7)
Your comments are noted. Omissions to Transportation Report have been rectified and will also be included as Appendix E25 of the Revised Draft EIR. Initial assessment of the abnormal load routing from Port Elizabeth harbour via the N2 to Thyspunt has been completed. The initial recommendation is that the routing is feasible and will require some construction of bypasses around some overpasses and interchanges. Detailed design work is required to transport the abnormal loads over some bridge structures to ensure acceptable loading on the structure. However initial indications are that it is entirely feasible. Transport of these loads will occur in off-peak periods, as approved by the road authorities.
Travelling of heavy traffic during daylight hours only is noted.

Your Comment (8)

Mitigation

1. There is no reference at all to the cost of the various traffic measures to be taken. This is, or should be, a major consideration in determining the viability of the Thyspunt site.

2. There is no reference under "mitigation" to determining the capacity of the N2 or the costs of up-grade to enable it to carry exceptionally heavy loads.

3. The use of Main Street in Humansdorp is a non-starter. This cannot be permitted, and alternative routes should be sought and costed.

4. A decision is required on the siting of the Staff & Construction villages, and on commuter routes from these to the site. This will have a major influence on the social impact. It is not clear why commuter traffic should not use the new Oyster Bay road.

5. Exceptionally heavy loads should be restricted to the hours of darkness, so as to minimise their impact on other traffic.

Response (8)
1. Some of the costs are included in the Economic Report.
2. Final costs of mitigation have not yet been determined. Eskom is prepared to pay the full costs of the recommended mitigation.
3. The routing through Main Road Humansdorp is being addressed in the revised Transport Report (Appendix **??** of the EIR).
4. Additional information is provided in the revised Transport Report on the construction village and the commuting to site.
5. Abnormal traffic will only be permitted on off-peak times, as required by the road authorities.

Your Comment (9)

Operational Phase - Emergency evacuation (Section 13.7, p. 96)
Here is a classic evasion of a potentially serious problem. By restricting "Urgent Protective Action Zones" (UPAZs, formerly Emergency Planning Zones) to 3 kilometres, the nuclear industry has successfully excluded communities outside these areas from their area of responsibility. The position is aggravated by the NNR legislation pertaining to Koeberg, which permits 16 hours to evacuate the 16 kilometre EPZ. What the future relevance of this will be in the light of the new UPAZ requirements remains to be seen. Either way, everything is loaded in favour of the viability of the site, rather than public protection.

The reality at Thyspunt is, that if there were to be an emergency requiring the evacuation of the Greater St Francis community while the prevailing south-westerly wind was blowing, depending on wind speed, the entire community would have to be evacuated in a matter of minutes. There is no possible disaster management plan which could achieve this, whether under peak or normal conditions.
We have been pointing this out for many years, and believe that it is a real threat to the viability of Thyspunt as a nuclear site. The industry has managed to protect itself by bureaucratic & legislative measures, but the reality remains.
The Transportation Assessment is purely concerned with evacuation of staff. No attention is paid to the needs of the community.
By excluding all specifically nuclear issues from the EIA, this has been quietly swept under the carpet.

Response (9)
The emergency plan is determined through the worst possible postulated accident. This determination takes into account, inter alia, the integrity of the containment building and the prevailing winds. The NNR performs in-depth reviews of the operator's studies and assertions, and in line with their mandate, make a ruling on the validity of assumptions and the feasibility of the required precautions required are feasible or not.
The current plant specification adopted by Eskom is that the plant to be constructed must not have any population evacuation beyond 3 km. This is the standard that is also adopted by the European utilities (captured in the European Utility Requirements) for the new build of plants.
The Emergency Evacuation Plan will fully conform to NNR legislation and regulations.

Your Comment (10)

Mitigation action required (Section 13.10, p.97)
We would add:
A viable evacuation route to ensure the evacuation of the entire Greater St Francis community, to include Rebelsrus, Mostert's Hoek, Cape St Francis, Sea Vista, and St Francis Bay,(approx 30000 persons) during peak holiday seasons, with a south-westerly wind of 50 kph.

Response 10

The comment is noted.

Your Comment (11)

Conclusions Section 14,p. 98
There is no reference to the route to be taken for staff access during the construction phase. Is there any reason why this should not be the Oyster Bay road, rather than the R330, which is expected to handle all traffic during the construction phase?

Response (11)

This issue has been addressed in the revised Transport Report.

Your Comment (12)

Questions raised

1. Is it of any concern to the Traffic specialist as to what up-grades would be required to the N2, and at what cost?

2. Can van Staden's River bridge take loads approaching 1000 tonnes?

3. How can the traffic assessment make any judgment on traffic numbers when the sites for the Construction and Staff villages have not yet been identified?

4. Does the traffic specialist seriously believe that it would be feasible, or even desirable, to take all traffic down Main Street Humansdorp?

5. There is no reference at all to the social impact of the vast traffic volumes predicted. Does the traffic assessment specialist consider this to be outside his area of concern?

6. Assuming that the two villages will be situated in or near Humansdorp, why can commuter traffic not use the Oyster Bay road during the construction period?

7. How is it that the traffic assessment pays no attention to the 10 kilometres of roadway required from the R330 to Thyspunt, over shifting sand dunes.

   Is this feasible and at what cost?

8. How can the public react responsibly when crucial information, such as diagrams and Appendix C are omitted from the CD?

9. Did the specialist give any thought to the practicality of evacuating up to 30000 people, covering the coast line from Rebelsrus to St Francis Bay, via a network of rural roads, down one escape route, in 10 – 30 minutes, in the event of an emergency when the prevailing south-westerly wind was blowing? If not, why not?

Response (12)

1. Initial assessment has been completed and the route is viable. Detailed work will determine final costs.
2. The detailed work to ensure the structure loading is within acceptable limits has not been completed. Initial indications are that it is feasible by spreading the loading.
3. This matter is addressed in more detail in the revised Transport Report (Appendix E25 of the Revised EIR).
4. This matter is addressed in the revised Transport Report.
5. This matter has been addressed in the Social Impact Report.
6. This routing option is addressed in the revised Transport Report.
7. The routing has been investigated. Substantially the routing is over stabilized sands and not the moving sand dunes.
8. Omissions to report have been rectified and will also be included in the revised Draft EIR.
9. Please see response # 11 above.

Your Comment (13)

This report is a model of complacency and incompleteness. None of the major issues raised at the beginning of this review have been addressed. Even the simple technical exercises undertaken on road access and intersections show naivety, especially with regard to the use of Main Street in Humansdorp.

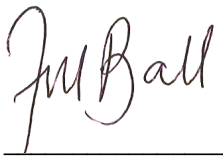
There are so many uncertainties remaining that this document can at best be regarded as a preliminary enquiry. Surely this cannot be the final document for an Environmental Impact Report, and less still for an ROD?

Response (13)

Your comments are noted and will be addressed in the revised report.

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