

THYSPUNT ALLIANCE

NUCLEAR 1

RESPONSE TO APPENDIX E 25:

TRANSPORTATION SPECIALIST REPORT

Response compiled by H.Thorpe, and submitted on behalf of the St Francis Bay Residents' Association, the St Francis Kromme Trust and the Thyspunt Alliance

General comment

This response should be read in conjunction with the response to the Noise & Social Impact Assessments.

Despite its being a sizeable volume of some 130 pages, with numerous appendices, the detailed proposals for the Thyspunt Construction Phase, which is the major concern, are outlined in pages 76 – 91, together with Appendix C12 in Volume 2. It leaves many questions unanswered. At best it is little more than a very limited and incomplete technical exercise on the feasibility of getting around corners and past road junctions. A number of general comments on this report are appropriate:

- The recommendation in the NSIP that the “small holiday resorts along the coast be left unaffected” has been ignored, and no attempt has been made to avoid St Francis Bay.
- The statement in 10.1.1 that there are currently no viable direct access roads connecting the Thyspunt site to the existing road network is an understatement of note. The reality is that road access to the Thyspunt site is a major problem, and should be regarded as a serious flaw in the site selection.

The only way in which Thyspunt can be accessed by road is by traversing the Oyster Bay By-pass Headland Dune System. This has been described in the specialist dune geomorphology assessment (Appendix E2) as follows:

5.3.7 Geomorphologic conservation value

The conservation value of the headland-bypass dunefields is high, as they are the only remaining large dunefields of this type that are still active in South Africa (Figure 5.3; Tinley, 1985; Illenberger, 1998). The headland-bypass dunefields at Cape St Francis are thus unique on a local, regional and probably global scale. (Illenberger, 1998).
Specialist EIA Report - dune geomorphology.doc Version 5 - February 2010

The vegetated dunefield is a classic, almost pristine example of a suite of Holocene and Pleistocene dune ridges with a variety of origins: parabolic dunes, hairpin parabolic dunes, and sidewalls of previously mobile headland-bypass dunefields, including fairly unique examples of such sidewalls. The dunefield has high interpretive value for elucidating coastal dune dynamics.

What the dune morphologist does not state here is that the entire dune system, running from St Francis Bay to Thyspunt, can be regarded as a wetland system. This frequently holds huge quantities of water, which are subject to violent release, as happened in July, 2011 when the

culvert under the R330 was washed away. This is completely ignored by the Transportation specialist. Constructing a road for ultra-heavy traffic in such a context is a major and costly challenge.

The conclusion has to be that access to Thyspunt can only be achieved at huge expense, both to the natural landscape and financial cost.

- This report is relevant to the Noise, Social Impact and Economic reports, all of which are dependent on the information contained. Unfortunately it is deficient in a number of important respects, thus depriving the other specialists of material information. These include uncertainties with regard to traffic volumes, and the cost of road construction and up-grade, as outlined below.
- The Economic Report has concluded that the Thyspunt site is favoured over the other two under consideration on financial grounds, yet two of the major cost factors, namely road up-grade and road construction costs are not included at all in the report!
 - i) There is no investigation of the feasibility of using the N2 & R330, or the cost of any upgrades required to take the ultra-heavy loads from Port Elizabeth to the site. It is simply stated that “Eskom will undertake a detailed study of the transportation route from PE harbor to the Thyspunt site”.
 - ii) No feasibility study has been done on the suitability of the dune slack wetlands of the dune system from Sea Vista to the Thyspunt site for heavy duty & ultra-heavy duty vehicles, or specifications or costing of such a road. How can the economic study be credible when major infra-structural requirements such as access roads are not costed into the transportation report?
- Proposals for access from the N2 change with every step in the process. The whole of the Transport Status Quo Assessment (Ch 6) of the First DEIR assumed that all the heavy traffic will travel from the Port Elizabeth direction on the N2; leaving the N2 at the Humansdorp off-ramp; travelling right down the Main Street of Humansdorp, with a right-angled turn into Park Street, and thereafter along the R330, past St Francis Bay, to turn onto a new access road opposite Sea Vista Township.

The revised proposal in the revised DEIR (section 10.1.2.a) is to take the heavy traffic down Saffery Street in Humansdorp. This is a small residential street. This was greeted with howls of laughter and incredulity, when announced at the public meeting in St Francis Bay. It is so naive that it brings the credibility of the whole Transportation report into question.

- The absence of important figures referred to in the report, e.g Figure 10.1 ff, (either in Vol 1 or 2) makes it impossible for the reader to envisage or evaluate the proposal. The lack of a Contents section in Vol 11 is also questioned, as the only way to locate a specific item is to work laboriously through the volume to find it, if, indeed, it is there at all. This is directly contrary to

the instruction by the Department of Environmental Affairs in its letter of approval of the Scoping Report (item 1.4) that “the EAP must ensure that the structure and readability of the reports is ensured when drafting the EIR, and that clear cross-referencing takes place.” (DEIR 1 Approval of Scoping Report. DEA letter from Ms Joanne Yawitch, ref 12/12/20/94) addressed to Tim Liversage, dated 19/11/08)

- An indication of the traffic volumes anticipated is given in Ch 3, Project Description, Item 3.21.3, Tables 3-14 & 3-15: “Traffic figures”. A much more detailed breakdown is given in App C 12, but it is difficult for the layman to interpret, and it is assumed that the summary given in Tables 3-14 & 3-15 correctly reflect the details given there, with the exception of the comments below.
- Comments on App C12 and Table 3-14:
 - Zero attention is paid to the huge increase in traffic volumes along the R330 during peak holiday seasons. Once again, as with population, numbers are based on low-volume periods. If work continues for 365 days a year, as is suggested in Appendix C 12, this will lead to traffic gridlock.
 - Appendix C 12 gives no clear indication as to which route will be used for different categories.
 - Furthermore, C 12 suggests that there will be a 3 shift system, operating 24 hours per day. This contradicts earlier assurances that all activities would take place during daylight hours. Transportation obviously reflects on the real impact on each road and community, and a shift system would have a massive social impact on the urban areas of Humansdorp and St Francis Bay.
 - “Vendor Staff vehicles per day” in Year 4 (63109!) is clearly incorrect . In consequence it is not possible to calculate the total daily, monthly and annual volumes for year 4.
 - The “total vehicles per day” does not tally with the three categories listed above it.
 - It is not clear whether the table represents single or return trips. Either way, the numbers shown must be doubled to reflect the actual number of trips.
 - Most of the vendor & Eskom staff traffic will be mainly at normal commuter traffic peak times.
 - Assuming that the other details for staff and heavy delivery vehicles are correct, the last three lines of table 3-14 should read as follows:

Year	1	2	3	4	5	6	7	8	9
Daily	231	279	470	?	933	1172	973	800	653

Monthly	6930	8370	14100	?	27990	35160	29190	24000	19500
Yearly	83160	100400	169200	?	335880	421920	350280	288000	234000

Of these the proportion of ultra-heavy & heavy loads is given in Table 3-15.

According to this table, a monthly total of 64 “ultra-heavy” loads in excess of 100 tons, and in fact in some cases of nearer 1000 tons, and 220 “heavy” loads of between 10 & 100 tons will be made between years 2 & 7. This does not tally with Table 3-14, which indicates monthly heavy load figures far in excess of these. **What are we to believe? Repeated requests for clarification on these points have been ignored.**

- Attached to these comments are comments on this report prepared by a qualified roads consultant, on the real road requirements, upgrades and specifications for the proposed traffic loads & volumes, and approximate costing per kilometer to provide for such roads. Without this information we cannot see how the economic specialist is able to draw comparisons with other sites.
- It must be clear to anyone who applies his mind to this proposal that the R330 is not constructed to carry these levels of traffic. The road will need to be completely re-built, both before and after the construction period, if the St Francis community is not to be left with a ruined road with ruts and potholes for ever after.
- There is no consideration at all of the social impact of the proposed route. For the Social Impact & Noise Reports to ignore the impact on the communities of Humansdorp and St Francis Bay of this scale of traffic is an indication of the irresponsible manner in which these surveys have been conducted.
- In the Project Description (Ch 3, section 3.13), it is stated that the management of the transportation of abnormal loads should be detailed in a heavy-load traffic management plan. Apart from very vague speculations in 3.13.3, no sign of it has been detected in this report, or anywhere else in DEIR 2 . Surely this is a requirement for an ROD, and should be contained in this report? It has huge social impact implications.
- It is our view that any proposal to take the scale of heavy traffic envisaged through Humansdorp and past St Francis Bay is contrary to the legal requirements of reasonable, just and fair administration.

We therefore demand that the Department of Environmental Affairs rejects any proposal which requires any access road to Thyspunt to fall within one kilometer of an urban edge. It is Eskom’s responsibility to identify and pay for suitable access roads to Thyspunt. If this cannot be achieved, it should be regarded as a fatal flaw. The proposal to use the road to the south of the Mpopfu Dam should re-considered.

We submit that this report is totally inadequate for the responsible authority to give any record of decision.

Appendix 1 Comment by Roads Consultant John Roux.

ESKOM PROPOSED NUCLEAR -1 POWER STATION

Revised Draft Environmental Impact Reports

Volume 22: Appendices (Transport Specialist Study – Impact Assessment Phase)

COMMENTS

(Paragraph numbering and page numbers refer to those in Volume 22)

1.3 Aim of the Transport Impact Assessment Study

Statement - page 3.

“The aim of the Transport Impact Assessment (TIA) is to determine the transport impact on the **existing transport network** during all phases, ie. Construction, operation and decommissioning of the proposed nuclear power station. This takes into account the impacts and possible mitigation measures for the development of Nuclear-1 for each of the proposed sites listed below:

- Duynfontein
- Bantamsklip, and
- Thyspunt

This report serves as the transportation output of the assessment phase and presents the **detailed transportation** finding of each site.”

2.2 Assumptions and Limitations

Statement –

“Nuclear fuel delivery to Nuclear- 1 will occur during operational stage approximately 2 to 3 times a year The fuel will be manufactured internationally and will enter South Africa via a **major port** and transported **by road** ... Due to the infrequent annual fuel delivery road transport impacts are expected to be negligible and are therefore **not considered further** in this study.”

Question:

Size of vehicles and numbers per delivery?

3.0 Description of Sites and Surrounding Environment

3.3 Thyspunt

3.3.2 Surrounding Land Use

Statement –

“The surrounding coastal towns such as Oyster Bay and Cape St Francis are mainly **low-density holiday and tourist destinations** with Humansdorp being the closest major town.”

Comment :

Very brief description and no mention of St Francis Bay or Jeffrey’s Bay.

3.3.3 Road Network

Statement –

“Access to the N2 from Thyspunt is via Humansdorp along R330 ...”

Comment:

No mention as per Bantamsklip (page 12) that “The Overland Local Municipality experiences a large influx of holiday makers during the summer holidays. On average a 50% increase in vehicular traffic Delays in excess of 30 minutes are experienced during weekday peak hours, with increasing delays during holiday periods.”

St Francis Bay also experiences a major increase in vehicles during the summer holidays. Overseas and up-country owners migrate to St Francis Bay from November to March/April (+- 4 months per annum). The normal permanent population can increase from approximately 3 000 plus by tenfold to 30 000 or more. This had not been mentioned anywhere or taken into account in the study.

3.3.6 Harbours

Comment:

It is stated the small boat harbour, Port St Francis, is mainly used for recreational purposes and commercial fishing. This highlights the importance of this area as a holiday environment and especially the fishing industry (Chokka).

6.0 Thyspunt Transport Status Quo Assessment

6.1.1 Background Traffic

Statement –

“Manual traffic counts were undertaken on 24,25 and 26 June 2008

Comment:

It is imperative that the increase in traffic during the summer holidays, November to February/March, be taken into account when analysing the capacity of the road and its intersections.

The traffic has also increased along the R330 since the opening of the Fountains Mall at Jeffrey’s Bay circa 2009.

It is doubtful that all the intersections will operate at a LOS A and LOS B, particularly in Humansdorp, taking the increased traffic into account during the summer holidays.

10.0 Thyspunt Construction Phase Impact Assessment

10.1.2 Access Routes

Statement –

(a) Main Access.

“Several routes have been investigated to access the construction site from Port Elizabeth harbour via the N2 and R102 as shown in Figure 10.1”

Statement –

10.3 Abnormal Loads (page 88)

“Port Elizabeth harbour is the closest harbour and should be used to transport abnormal loads to Nuclear-1. The main section of the abnormal vehicles route will be from Port Elizabeth Harbour via N2, R102 Abnormal loads may have to be transported via a two trailer wide self propelled modular transporter (SPMT), as shown in Fig 10.13 ...”

Comment:

No detailed description of this route is reported on as per the access from Cape Town harbour to Duynefontein and Bantamsklip. In their relevant sections, see paragraph 9.3, Abnormal Loads (page 72), they go to great lengths to show that transportation from Cape Town Harbour through Cape Town is not feasible due to the number of bridges and interchanges requiring costly major upgrades.

This scenario is also applicable for the transportation from Port Elizabeth Harbour through Port Elizabeth right up to Humansdorp. **There is no mention of this aspect in the report.** A detailed report with mitigating factors is required.

Statement –

“It is recommended that the R330 be used as the main access route, and Oyster Bay road be used as the secondary construction route (for smaller construction vehicles and construction workers), (page 76).

Comment:

On page 80 ,in discussing the secondary access W1 to Thyspunt via Oyster Bay the statement is made that “the disadvantage of this alignment is its **close proximity** to Oyster Bay ...”

Is this not true for the R330 **through Humansdorp**. It is **in close proximity to St Francis Bay** and it passes between the village of St Francis Bay, the St Francis Links Golf Estate and Sea Vista School, creating a barrier. There are also numerous pedestrian crossings.

Statement –

E1 : Considered unsatisfactory due to wetlands, springs, mobile dunes and several coastal properties.

E2: Considered unsatisfactory as it affects a coastal forest.

E3: Recommended access as it crosses land that has a low environmental sensitivity.

Comment:

Route E3 runs parallel to the same mobile dune system (shifting sands) as routes E1 and E2 and is located in a large wetland area subject to periodic flooding.

The eastern, western and northern secondary access roads form part of the actual access to the Nuclear-1 site and form an important function with regard to importance and risk. However, what must be taken into account , they are the only portions of road that do not form part of an existing road network possibly requiring upgrading, but a new road still to be constructed. Those secondary access roads can therefore be termed as “Greenfield” projects. “Greenfield” projects normally require a more detailed impact assessment report with costing and associated risks, particularly if any structures are required, which would be the case when traversing wetlands subject to periodic flooding.

CONCLUSION

Further to the above it is recommended that:

- The traffic impact assessment must assess out of season as well as in season (summer holidays). Particularly with the St Francis Bay traffic.
- Vehicle/capacity (V/C) ratios as well as LOS should be quoted.
- Scrutiny of the construction traffic predictions reveals that approximately 325 000 one-way movements over the nine year construction period is expected. At an average of 2,5 E80's per vehicle, this will result in over 0,8 million E80's in total. This is significant enough to warrant a detailed assessment of the integrity of the existing R330 to determine whether it can carry this projected loading. Without knowing what the existing pavement residual life is it is difficult to estimate the expected rehabilitation cost, but it could be substantial.

J.E.Roux, Pr.Eng, B.Sc Eng (Civil), NSAACE, FSAICE

Appendix 2

Request for clarification, dated 20 May 2011, and repeated on 25 June, 2011

NUCLEAR 1, DEIR 2 TRANSPORT SPECIALIST REPORT

REQUEST FOR CLARIFICATION

As the spokesman on nuclear matters for the St Francis Bay Residents' Association, and as a member of the Thyspunt Alliance, I have been perusing the 2nd Draft Environmental Impact Report on Nuclear 1 in preparation for the public meeting to be held on 31 May, 2011, and with a view to written submissions by 21 June. I have been studying the Transportation Specialist Report, and have got as far as Appendix E25 with its various Annexures, but have got stuck on Annexure C 12.

There are a number of uncertainties from my reading of E25, which make it difficult to draw conclusions. This applies particularly to the detailed trip predictions. It would be appreciated if the specialist who drew up the document could answer a few direct questions in simple terms. These are:

1. Item 10.2.1/2 on p. 76

There would appear to be a contradiction between 10.1.1 & 10.1.2.

10.1.1 indicates that the main access will be used to convey abnormal loads (presumably the ultra-heavy loads), & some construction material, provide access to operational (not construction?) staff and provide an emergency evacuation route.

The secondary access route is required to convey aggregate to the site, provide access to construction workers, staff & operational staff housing, convey construction materials and provide an evacuation route. This would appear to indicate that most of the heavy traffic during the construction stage will travel via the secondary route.

However, in the last paragraph on p.76, it states that the secondary route will be used for smaller construction vehicles & construction workers. No further details are given.

Question 1

Will the heavy construction materials (apart from ultra-heavy) be transported along R330, the Oyster Bay Road or both? If both, in what proportions?

Question 2

Will all the commuter traffic use the secondary access (Oyster Bay road) during the construction period, as is suggested in 10.1.1?

2. Shift system

Our understating all along has been that there will be no shift system during the construction phase, and that this will only begin during the operational phase. However, Appendix C appears to indicate that there will be a shift system during construction. If this is so, and commuters and heavy materials are to be imported 24/7, this hugely affects the social impact of the project.

Question 3 Will a shift system over 24 hours per day be used during the construction phase?

3. Request for simple table

The major concern for the Greater St Francis community is the amount of traffic which can be expected along the R330 during the construction period. At present this is not clear. Would it be possible to draw up two tables over the 9 year construction period, indicating the estimated number of daily trips for commuters & construction materials on the R330?

On the left axis of each table there could be 3 hourly slots 0000-0300; 0300-0600; 0600-0900; 0900-1200; 1200-1500; 1500-1800; 1800-2100; 2100-0000. On the base axis could be years 1 – 9. If there is to be no shift system during the construction period, it might be sufficient to show only four time slots.

Your assistance with this would be much appreciated. There is a measure of urgency, since we require this information for the public meeting scheduled for 31 May, 2011, and some time to assimilate the information will be required before then.

Hilton Thorpe
Vice-Chairman, St Francis Bay Residents' Association

Email: hbthorpe@telkomsa.net
Tel 0126541215 (until 29 May)
Cell 0836608909

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