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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

Arcus GIBB (GIBB) acknowledges receipt of the submission received from your organisation discussing the above report. We thank you for your valuable comments and your participation in the Eskom Nuclear Power Station Environmental Impact Assessment (EIA) process. Your questions and comments concerning the Nuclear-1 have been noted.

YOUR COMMENT 1.1

COMMENTS ON THE PROPOSED TRANSPORTATION SYSTEM

1. The draft EIA report on transportation matters consisted mainly of detailed traffic engineering assessments for various road intersections between Humansdorp and St Francis Bay.

The following shortcomings in the draft report are noted:

- 1.1 Projected traffic counts do not include the numbers and routes of construction vehicles carrying cement, stone and aggregate. The traffic figures are required to be upgraded.

RESPONSE 1.1

Additional information on routes and construction vehicles (including construction materials) are included in the revised Transport Report which will be available for public review and comment as part of the Revised Draft Environmental Impact Report (EIR) as Appendix E25

YOUR COMMENT 1.2

- 1.2 The proposed route through Humansdorp down the main road of the town would inevitable result in traffic accidents and their associated social costs to the community.

RESPONSE 1.2

These comments have been noted and are addressed in the revised Transport Report which will be available for public review and comment as part of the Revised Draft Environmental Impact Report (EIR) as Appendix 25.

YOUR COMMENT 1.3

1.3 The proposed route for the majority of construction and material vehicles through Humansdorp along the R330 to St Francis Drive in St Francis Bay does not take into account the proximity of low cost housing adjacent to proposed route, dairy farming activities adjacent to route and the minimum of two schools who's entrances are on proposed route as well as at least four schools where the school is situated on the opposite side of the road from where the majority of the learners live. Not to mention the number of busses and cars transporting learners to and from schools that use this proposed route as well as the number of learners who walk along the side of the road. As there are no bridges or side roads / pavements a number of pedestrians can be found walking on the verge at any time of the day as it is the only route from their homes into Humansdorp. Cattle, goats and pigs roam freely in this area and have already resulted in a number of accidents. These activities adjacent to a heavily trafficked road would result in future road fatalities and their respective social cost to the community. A number of busses transport learners from St Francis Bay to just beyond the van Stadens Bridge daily to Woodridge School.

RESPONSE 1.3

Your comment is noted. These aspects will be included in the revised Transport Report which will be available for public review and comment as part of the revised Draft EIR. The potential social impacts associated with the above facilities/ environments are described in the Social Impact Assessment report (Appendix E18 of the EIR).

YOUR COMMENT 1.4

1.4 Details were not supplied in the report on the effect of the increase in vehicular axle loads would have on the existing paved roads and road bridges between Humansdorp and St Francis Bay. Existing roads would probably have to be upgraded and widened due to the increase of load. Road bridges would have to be strengthened to sustain the loads of the extra heavy duty loads to be transported to Thyspunt.

RESPONSE 1.4

Some places of the R330 would require strengthening. More detailed testing of the road pavement will indicate the extent of the upgrading required. Bridge structures are in the process to be assessed by Consulting Engineers. Preliminary studies so far have indicated that all the structures will be able to support the anticipated loads. More detailed studies are currently in progress. .

YOUR COMMENT 1.4.1

1.4.1 If the Kromme River Bridge's future strengthening requires the construction of additional piers this could result in further silting of the river with its subsequent impact on tourism and also potential property buyers who wish to settle in the area. This matter needs to be investigated in much greater detail in the report.

RESPONSE 1.4.1

Initial indications are that the bridge would not require additional pillars or strengthening. Temporary props under the bridge would be installed if strengthening is required.

YOUR COMMENT 1.5

1.5 Details of the proposed new access road from St Francis Bay along the sensitive Sand Dune Area to Thyspunt were not given in the report. The effect of this road on the dune geomorphology has not been investigated in the report.

RESPONSE 1.5

The routing is largely through stabilised sands.

YOUR COMMENT 1.6

1.6 Details of access and haul roads across the Sand River dunes at Thyspunt are not given in the report. Mention was made at public meetings at the Links Golf Course on the 25th May 2010 of constructing an elevated roadway supported by concrete columns and the possible use of a conveyor belt system for the transport of sand. Any disturbance of the Oyster Bay Dune Field would cause significant secondary impacts on the wetlands and on the dune geomorphology.

RESPONSE 1.6

Access roads are discussed in Section 10.1.1 of the Transportation Assessment which is currently under review and the revised report will be made available for public comment as part of the revised Draft EIR. Access roads are further discussed in Chapters 5 and 9 of the Draft and revised Draft EIR. The impacts of the access roads on the dune and wetland systems are discussed in the Wetland , Dune and Botany and Dune Ecology Assessments (Appendix E12, E3 and E11 of the Draft and revised EIR respectively)

The proposed main access route from the east was laid out following close collaboration between the wetlands and botany specialists, Gibb, ESKOM and Ninham Shand (now Aurecon) in Port Elizabeth, who are the civil engineers consulting on the road design. The final route chosen was agreed to be as being the best possible route that would minimize impacts on wetlands and dunefields. This work was done before Dr Werner Illenberger was appointed to undertake the dune geomorphology investigation.

The northern route would traverse sensitive mobile dunes and fragile interdune wetlands and hence the assessment of this route required extensive investigation. The other routes pass through less sensitive terrain and hence did not require such extensive investigation. As reported in the Dune Geomorphology Report, there are no impacts to the vegetated dunes along the eastern and western access routes that cannot be mitigated adequately (Section 5.3.2, pages 56-57) as far as issues in the Terms of Reference are concerned. The decision to abandon northern route was taken in early 2010 after numerous draft specialist reports showed that the northern route was the least favoured, and probably fatally flawed.

YOUR COMMENT 1.7

1.7 No mention was made in the report of any investigation of constructing an alternative access to the Humansdorp / R330 / St Francis Bay route. This alternative route should have been investigated.

RESPONSE 1.7

Alternatives will be reported on in the revised Transport Report which will be available for public review and comment as part of the Revised Draft EIR.

YOUR COMMENT 1.7.1

1.7.1 It is noted that the proposed extra heavy duty loads (a minimum of 4 such loads) will not be able to make the 90 degree turns, of which there are a number on route. The existing off ramp from the N2 from Port Elizabeth requires a 90 degree turn at the top of the ramp to get onto the Humansdorp road. Construction of an alternative off ramp would have to be undertaken. The existing main road through Humansdorp also culminates in a 90 degree T-junction.

RESPONSE 1.7.1

The extra heavy loads require construction of bypasses to pass through interchanges. Minor reconstruction of intersections is also required.

YOUR COMMENT 1.7.2

- 1.7.2 The small road over river bridge 3 kms to the east of Humansdorp on the R330 has extremely sharp approach and exit ramps. It was previously stated at a public meeting that a 90% turn for the abnormal extra heavy duty loads requires a turning circle of up to 1500m in length to make a 90% turn. Major road works to the approach and exit of bridge could be required, this matter should be investigated in the report.

RESPONSE 1.7.2

Turning radii for the extra heavy loads have been tested. Relatively minor reconstruction at intersections is required.

YOUR COMMENT 1.8

- 1.8 The upgrading of the N2 and the strengthening of the various road bridges on the N2 and R330 roads for the extra heavy duty loads was not investigated in the report, probably due to the fact that this was not included in the consultants' scope of investigation.

RESPONSE 1.8

An initial investigation of the extra heavy routing from the Port Elizabeth harbour to Thyspunt has been concluded indicating that the route is feasible. Construction of bypasses around overpasses and interchanges will be required. Detailed design is also required to load the extra heavy load over several bridge piers to reduce the pier loading to acceptable limits.

YOUR COMMENT 1.8.1 – 1.8.3

- 1.8.1 The numerous bridges passing over the N2 Highway will have to be assessed for vertical clearance to process the expected abnormal loads to Thyspunt.
- 1.8.2 The unpredictability of the Sand River flash floods was not investigated.
- 1.8.3 The subsurface of the existing road from St Francis Bay to Cape St Francis needs to be investigated. A large section of this road has already collapsed.

RESPONSE 1.8.1 – 1.8.3

1.8.1 This has been completed in the initial assessment.

1.8.2 Dr Illenberger (the appointed Dune Geomorphology Specialist) was asked subsequent to the public meeting of 25 May 2010 to investigate the supposed debris flows and debris flow deposits as well as the November 2007 flood. These investigations will be presented as an Addendum Report to the Dune Geomorphology Report. A preliminary summary of his findings, presented without prejudice and reserving the right to make changes subject to the outcomes of the Addendum Report, are:

1. Dr Illenberger has never in his numerous field visits, including some visits shortly after flood events of the Sand River, seen any debris flows or debris flow deposits. Dr Illenberger has perused the literature and consulted with a number of specialists well-versed in sedimentology and with extensive knowledge of the area, and their unanimous opinion is that the supposed debris flow deposits are conventional river flood deposits of sand, some mud, a few pebbles, and some plant debris, made by the Sand River. The quicksands that occur during floods of the Sand River result from lateral or upward pressure of groundwater in some areas. Vehicles are not washed away by these floods; they may settle in quicksands generated by the Sand River when in flood. These statements will be substantiated in the Addendum Report.
2. The November 2007 flood Prof Fred Ellery alludes to was a case of erosion and transport of sediments by strongly-flowing floodwaters along the steep V-drains along the R330, which sediments were subsequently deposited in the style of alluvial fans where flow speed dropped. These floodwaters did not originate from the Sand River. These statements will be substantiated in the Addendum Report.

1.8.3 More detailed assessment of the R330 road pavement will be conducted to ensure the loadings are acceptable and the integrity of the road pavement is retained beyond the construction phase

YOUR COMMENT 1.9

1.9 The noise generated by additional vehicular and construction loads along St Francis Drive and in Humansdorp might require the construction of sound barriers along the road to reduce the noise level. This matter was not investigated and needs to be addressed.

RESPONSE 1.9

The noise impact, from the specialist reports that on a small number of residences in the nearest informal settlements along the R330 at sea Vista near the Thyspunt site would be high. In all instances no noise mitigation would be required in terms of the Noise Control Regulations (NCR).

YOUR COMMENT 1.10

1.10 The Thyspunt site has a significant impact on the transport network with upgrades required to the public transport system, heavy load routes and road upgrades required for emergency evacuation purposes. These upgrades will contribute to the financial cost of construction of the power station at this site.

RESPONSE 1.10

The development of any power station project requires surrounding infrastructure development by Eskom. The envisaged costs are in line with development costs of ultra large projects. Savings on the other hand is realised with shorter transmission lines (as in the case of coal stations in Limpopo and Mpumalanga) as well as a 60 year saving on transmission losses.

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 dark ink, appearing to read 'Jm Ball', written in a cursive style.

Jaana-Maria Ball
Nuclear-1 EIA Manager