

5 August 2015

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Your Ref: Email received 01August 2011

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Dear Mr Bosman



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RE: ESKOM EIA CONCERNS FOR THE PROPOSED NUCLEAR POWER STATION AND ASSOCIATED INFRASTRUCTURE (DEA Ref. No: 12/12/20/944)

Comment 1:

I have the following further comments on TRANSPORT for the revised Nuclear 1 EIA.

The recommendation of the Transport consultant was that the route for transporting materials and equipment through Humansdorp (some 900 vehicles a day during the construction phase of several years) should be changed from the Main Street to Saffrey Street.

It is patent from this recommendation that a mere desk top study is not sufficient to obtain the best solutions to the many problems that will arise with the building of the Nuclear 1 power station.

Response 1:

Your comments are noted. Similar concerns from the public around Humansdorp area up to St. Francis have been raised and acknowledged regarding the use of Saffrey Road. As such the Transport Specialist study was revised (through both desktop and fieldwork studies) to consider other alternative routes. The revised report recommends that the main street through Humansdorp and Saffrey Street be bypassed. New transport roads for abnormal load vehicles were therefore considered and three alternate bypasses were investigated, as shown in the figure below. All three alternatives are proposed new roads that run along existing land boundaries between farmland.

Alternative A directly links between Voortrekker Road (MR389) and Park Street (MR381) and is 850 m in length. The beginning of Alternative A crosses the Boskloof Valley and the rest of the route will be constructed on Municipality land.

Alternative B connects between Voortrekker Road (MR389) and Park Street (MR381) along the east of the Boskloof area, and crosses privately owned farmlands and is 1.3 km in length. The topography of Alternative B is considered acceptable, except for the section of the route where it crosses the Boskloof Stream at a deep vertical alignment. Additional cost will be required for the construction of a bridge to cross the stream at an acceptable grade.



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Alternative C is located the furthest east from Humansdorp and is the longest of all three alternatives (2.7 km). This route also crosses privately owned farmlands. Similar to Alternative B, Alternative C crosses two relatively deep valleys, which will require additional cost for the construction of bridge structures to achieve acceptable grade crossings.

Alternative A is therefore considered as the most viable option as it is the shortest and most economical route to construct, and it has a good alignment for the transportation of abnormal loads. Once the route is constructed, it will also alleviate the traffic congestion in Humansdorp.

Lastly we also refer the author to Appendix C of the revised Transportation specialist study which shows the number of estimated vehicle numbers per day through the eastern and western access road to the Thyspunt site. As can be seen the maximum vehicle numbers through the eastern access road is 684/day in year 6 with an average of 385/day over the entire construction period and therefore not 900 as is stated.

Annexure C9: Thyspunt Construction Phase Yearly Trips

| Description | Unit | Volume | Load | Number of loads | Estimated Daily Transport Distribution | | | | | | | | | |
|---|--------|-----------|-------|-----------------|--|------------|------------|------------|------------|--------------|------------|------------|----------|------------|
| | | | | | 1st Year | 2nd Year | 3rd Year | 4th Year | 5th Year | 6th Year | 7th Year | 8th Year | 9th Year | |
| Vendor staff / day | | | | | | | | | | | | | | |
| General worker numbers | | | | | 90 | 200 | 230 | 1000 | 3800 | 4150 | 2110 | 650 | | 0 |
| Buses vendor general workers | person | 4 150 | 60 | 69 w | 2 | 4 | 4 | 17 | 64 | 70 | 36 | 11 | | 0 |
| Vendor staff numbers | | | | | 55 | 130 | 150 | 460 | 1550 | 1895 | 1000 | 505 | | 20 |
| Vendor staff vehicles | | 1 980 | 5 | 396 e | 11 | 26 | 30 | 92 | 310 | 379 | 200 | 101 | | 4 |
| Total vendor | | | | 465 | 13 | 30 | 34 | 109 | 374 | 449 | 236 | 112 | | 4 |
| Eskom staff / day | | | | | | | | | | | | | | |
| Project staff numbers | | | | | 40 | 50 | 70 | 120 | 140 | 140 | 140 | 80 | | 10 |
| Cars (Project staff) | person | 220 | 2.00 | 110 e | 20 | 25 | 35 | 60 | 70 | 70 | 70 | 40 | | 5 |
| Operational staff numbers | | | | | 10 | 10 | 100 | 250 | 550 | 950 | 1250 | 1350 | | 1350 |
| Buses (Operational staff) | person | 800 | 20 | 40 e | 1 | 1 | 1 | 4 | 10 | 19 | 29 | 31 | | 31 |
| Cars (Operational staff) | person | 550 | 1.30 | 423 e | 7 | 7 | 62 | 145 | 275 | 439 | 529 | 572 | | 572 |
| Total Eskom | | | | 573 | 28 | 33 | 98 | 209 | 355 | 528 | 628 | 643 | | 608 |
| Waste and Spoil (Totals for power station construction) | | | | | Estimated Annual Transport Distribution | | | | | | | | | |
| Sand spoil (20m-8m) | m³ | 6 372 044 | | | | | | | | | | | | |
| Spoil for HV yard | m³ | 637 204 | 10 | 63 720 w | 25 488 | 19 116 | 19 116 | | | | | | | |
| Spoil pumped to sea | m³ | 5 734 840 | | | | | | | | | | | | |
| Rock from excavation | m³ | 671 071 | | | | | | | | | | | | |
| Rock to HV yard | m³ | 134 214 | 10 | 13 421 w | 5 369 | 4 026 | 4 026 | | | | | | | |
| Rock used on site | m³ | 335 536 | | | | | | | | | | | | |
| Rock transport outside site | m³ | 201 321 | 10 | 20 132 w | 8 053 | 6 040 | 6 040 | | | | | | | |
| Rock from outlet tunnel | m³ | 12 428 | 10 | 1 243 w | | 249 | 497 | 373 | 124 | | | | | |
| Rock from inlet tunnel | m³ | 37 285 | 10 | 3 729 w | | 746 | 1 491 | 1 119 | 373 | | | | | |
| Waste | m³ | 15 000 | 10 | 1 500 w | 75 | 150 | 225 | 300 | 375 | 300 | 100 | 150 | | 150 |
| Construction Resources | | | | | | | | | | | | | | |
| Bricks | ea | 3 750 000 | 5 000 | 750 w | 75 | 150 | 150 | 150 | 150 | 75 | | | | |
| Finished Concrete | m³ | 795 320 | | | | | | | | | | | | |
| Concrete aggregate | m³ | 596 490 | 10 | 59 649 w | | 5 965 | 11 930 | 11 930 | 11 930 | 11 930 | 5 965 | | | |
| Concrete fines | m³ | 397 660 | 10 | 39 766 w | | 3 977 | 7 953 | 7 953 | 7 953 | 7 953 | 3 977 | | | |
| Cement | t | 357 894 | 10 | 35 789 e | | 3 579 | 7 158 | 7 158 | 7 158 | 7 158 | 3 579 | | | |
| Concrete reinforcing | t | 6 766 | 20 | 338 e | | 34 | 68 | 68 | 68 | 68 | 34 | | | |
| Structural steel | t | 1 299 | 20 | 65 e | | 6 | 13 | 13 | 13 | 13 | 6 | | | |
| Small bore pipe | m | 12 836 | 200 | 64 e | | 6 | 13 | 13 | 13 | 13 | 6 | | | |
| LB Pipe | m | 163 914 | 50 | 3 278 e | | 328 | 656 | 656 | 656 | 656 | 328 | | | |
| Conduit | m | 381 256 | 5 000 | 76 e | | 8 | 15 | 15 | 15 | 15 | 8 | | | |
| Cable | m | 906 884 | 1 800 | 504 e | | 50 | 101 | 101 | 101 | 101 | 50 | | | |
| Terminations | ea | 22 025 | | 100 e | | 10 | 20 | 20 | 20 | 20 | 10 | | | |
| Light delivery vehicles | ea | 80 000 | 1 | 80 000 e | 4 000 | 4 000 | 16 000 | 16 000 | 16 000 | 16 000 | 10 000 | 10 000 | | 10 000 |
| Ultra heavy loads (x > 100t) | ea | 63 | | 63 e | | 6 | 13 | 13 | 13 | 13 | 6 | | | |
| Heavy loads (10t < x > 100t) | ea | 201 | | 201 e | | 20 | 40 | 40 | 40 | 40 | 20 | | | |
| Equipment | ea | 6 000 | | 6 000 e | | 600 | 1 200 | 1 200 | 1 200 | 1 200 | 600 | | | |
| Total annual construction vehicles | | | | | 43 060 | 49 066 | 76 725 | 47 120 | 46 201 | 45 554 | 24 689 | 10 150 | | 10 150 |
| Total daily construction vehicles | | | | | 190 | 216 | 338 | 208 | 204 | 201 | 109 | 45 | | 45 |
| LIFECYCLE TRAFFIC (ONE WAY) | | | | | | | | | | | | | | |
| Vehicles per annum | | | | 246 202 | 58 025 | 72 061 | 124 905 | 163 190 | 312 286 | 402 159 | 340 049 | 285 725 | | 233 530 |
| Vehicles per month | | | | | 4 835 | 6 005 | 10 409 | 13 599 | 26 024 | 33 513 | 28 337 | 23 810 | | 19 461 |
| Total vehicles per working day (Construction and staff) | | | | | 159 | 198 | 342 | 447 | 856 | 1 102 | 932 | 783 | | 640 |
| Totals if all external material deliveries are transported via eastern access road | | | | | | | | | | | | | | |
| Estimated vehicle numbers / day through eastern access | | | | | 40 | 68 | 165 | 295 | 568 | 750 | 661 | 585 | | 486 |
| Estimated vehicle numbers / day through northern / western access | | | | | 119 | 130 | 177 | 152 | 288 | 353 | 271 | 198 | | 154 |
| Totals if all external material deliveries are transported via western access road | | | | | | | | | | | | | | |
| Estimated vehicle numbers / day through eastern access | | | | | 29 | 46 | 99 | 229 | 502 | 684 | 623 | 558 | | 459 |
| Estimated vehicle numbers / day through northern / western access | | | | | 130 | 152 | 243 | 218 | 354 | 419 | 309 | 225 | | 181 |

Comment 2:

It appears also that the Transport consultant decided that the Eastern Route was preferable and that thereafter Noise Impact and Social Impact consultants assessed the respective impacts and suggested steps to mitigate these impacts. This is also not the best way to find the best solutions. All three consultants should sit down together after visiting the site and jointly find the best solution to the many problems.

The Transport consultant originally identified three possible routes, Northern, Western and Eastern for the transportation of the materials and equipment from the N2 to the Thyspunt site. He apparently did

not consider, nor was he required to, the noise and social impacts of his recommendation and both of these impacts are very significantly different on the respective routes.

The Eastern route (R330) travels through or alongside two populated urban areas for a total distance of four or five kilometers and will have both noise and social impacts in both areas. In the Humansdorp area it travels through the town and between Kwanomzamo and the town and residents of Kwanomzamo who have to get to the town to work or to attend school or to shop or for any other purpose have to cross the road to get there and back.

In the St Francis Bay area the route passes through or alongside residential areas and two primary schools. In one place a primary school is on the opposite side of the road from the houses in which the children live. Most of the people who work at the Links development live on the other side of the road.

At the meeting held in St Francis Bay to discuss the 1st Draft report the consultants said that underpasses or bridges would be built for people to use when they wish to cross the road.

We all know that underpasses tend to degenerate very quickly into damp, gloomy passages which are often used for purposes for which they were not intended and sometimes even become dangerous. Any pedestrian bridge will have to be unusually high to accommodate the highest of the loads which will have to use the road. This will discourage people from using them as will the fact that the bridges or underpasses will often not be at the places where pedestrians want to cross the road.

In practice people will not use the bridges or the underpasses most of the time and the additional danger of the huge increase of traffic will not be abated by these mitigating measures neither is there any way that they will mitigate the danger of the increased traffic to the livestock that regularly and constantly crosses the road from Kwanomzamo to the grazing on the other side.

These problems do not, of course, show up in a desktop study.

Response 2:

Your comments are noted and whilst it is acknowledged that potential access alternatives were determined prior to the assessment of impacts all specialists (including the noise, social and transportation specialists) appointed in terms of the Nuclear-1 EIA assessed impacts related to both the western and eastern access routes to the Thyspunt site. The author is therefore referred to sections 3.6.1 and 3.9 of the Noise Assessment (Appendix E23) and Social Impact Assessment (Appendix E18) of the Revised Draft EIR Version 2 respectively.

The findings and recommendations from all specialist studies were subsequently considered in the context of one another and of the preferred and recommended options for access to Thyspunt are thus discussed in Chapter 9 and 10 of the Revised Draft EIR Version 1.

Lastly as mentioned above the Transportation specialist study has been revised and confirms that the R330 is now proposed to be used for light vehicle traffic and abnormal load transport, and sections will require upgrading for this purpose. The Oyster Bay Road is now proposed to be upgraded to a surfaced road to be used during the construction and operations phases for staff access, light vehicle traffic, heavy vehicle traffic and as an emergency evacuation route for areas such as Oyster Bay. DR1762, which links the R330 and Oyster Bay Road is now proposed to be surfaced to provide improved east-west connectivity. The recommendation that a combination of both Oyster Bay Road

(Route 1 to western access) and R330 (Route 2 to eastern access) be used for transportation during the construction phase, will improve the impact on traffic congestion, noise and safety impacts to a low / medium significance.



Comment 3:

This serious impact on people living alongside the proposed route will not occur on the Northern or the Western Routes nor will the impact of noise which will also be serious for the many hundreds, if not thousands, of people living within earshot of the Eastern Route.

For these people the drone of heavy vehicle traffic will be constant and unmitigated and the damage that the heavy vehicles will inevitably do to the road, which was not built to take them, will be an added impact and inconvenience.

The Eskom plan contemplates in any event the building of a road on the Northern or Western Route and it seems to make sense that that road should be constructed and used as the main supply route during the construction period.

It is worth repeating and emphasizing that all of the impacts on people that are mentioned above will be avoided by the use of that road.

Other victims of the increased traffic will be the many cyclists that use the road not only to get to and from work but for leisure purposes, on the whole distance between Humansdorp to St Francis.

Response 3:

Your comments are noted. Please refer to our responses 1 and 2 in terms of the revised Transportation specialist study and its new recommendations. Again please note that significant upgrades will be made to the R330 it is now demarcated for use in terms of light vehicle traffic and abnormal load transport. The remainder of the traffic (staff access, light vehicle traffic, heavy vehicle traffic) will be routed via the Oyster Bay road. Lastly the Northern access road to the Thyspunt site is not considered suitable due to significant impacts in terms of dune ecology and wetland sensitivity.

Yours faithfully
for GIBB (Pty) Ltd



The Nuclear-1 EIA Team