

ENVIRONMENTAL IMPACT ASSESSMENT (EIA)

EIA: 12/12/20/944

**FOR THE PROPOSED ESKOM NUCLEAR POWER STATION AND
ASSOCIATED INFRASTRUCTURE**

**REVISED DRAFT ENVIRONMENTAL IMPACT ASSESSMENT
REPORT**

**MINUTES OF AUTHORITY MEETING: DEPARTMENT OF ECONOMIC
AFFAIRS, ENVIRONMENT AND TOURISM (DEAET)**

**OFFICE OF THE EASTERN CAPE DEPARTMENT OF ECONOMIC
AFFAIRS, ENVIRONMENT AND TOURISM, PORT ELIZABETH**

07 JUNE 2011

10:00 – 12:30

TABLE OF CONTENTS

TABLE OF CONTENTS 2

PREFACE 3

1. ATTENDANCE..... 4

 1.1. ATTENDANCE – DEPARTMENT OF ECONOMIC AFFAIRS ENVIRONMENT AND
 TOURISM (DEAET)..... 4

 1.2 ATTENDANCE – ESKOM HOLDINGS LIMITED 4

 1.3 ATTENDANCE – INDEPENDENT ENVIRONMENTAL CONSULTING TEAM 4

2. WELCOME AND INTRODUCTIONS..... 4

3. AIM AND EXPECTED OUTCOME OF THE MEETING 4

4. PRESENTATION: KEY CHANGES TO THE DRAFT ENVIRONMENTAL IMPACT
ASSESSMENT REPORT AND ENVIRONMENTAL MANAGEMENT PLAN 4

5. ISSUES AND COMMENTS RAISED AND DISCUSSED 5

 5.1 ISSUES AND COMMENTS RAISED 5

6. WAY FORWARD AND CLOSING REMARKS 5

 6.1 MINUTES OF MEETINGS..... 5

 6.2 TIMEFRAMES 5

 6.3 CONCLUDING REMARKS..... 5

APPENDIX 1: RECORD OF ISSUES RAISED AND DISCUSSED..... 6

APPENDIX 2: PRESENTATION OF REVISED DRAFT ENVIRONMENTAL IMPACT REPORT 16

APPENDIX 3: ATTENDANCE REGISTER 17

PREFACE

Should participants who attended the meetings require any changes to these proceedings, please notify the Public Participation Office (nuclear1@gibb.co.za) in writing within 14 days of receipt.

In order to provide a structure and to enable the reader to follow the proceedings with ease the minutes have not been captured verbatim and post-meeting notes have been added for clarity and information purposes and are indicated in **bold**.

1. ATTENDANCE

1.1. Attendance – Department of Economic Affairs Environment and Tourism (DEAET)

Name	Position/Role
Mr Dayalan Govender	Regional Manager
Mr Alan Southwood	Biodiversity Officer
Mr Andries Struwig	Manager: EIM

1.2 Attendance – Eskom Holdings Limited

Name	Position/Role
Ms Lorraine Ndala	Senior Environmental Advisor
Mr Mervin Theron	Manager: Regulation and Localisation
Mr Lerato Sedumedi	Senior Advisor

1.3 Attendance – Independent Environmental Consulting Team

Name	Organisation	Role in the project
Ms Jaana-Maria Ball	Arcus GIBB (Pty) Ltd	Nuclear-1 EIA: Project Manager
Mr Reuben Heydenrych	Arcus GIBB (Pty) Ltd	Senior Environmental Scientist and Minute-taker

2. WELCOME AND INTRODUCTIONS

Ms Jaana-Maria Ball (GIBB), representing the Independent Environmental Impact Practitioners, welcomed everyone to the meeting and thanked the Department for hosting the GIBB Environmental Impact Assessment Team, as well as the Applicant, Eskom Holdings Limited (Eskom). She explained that the meeting was being recorded and that the minutes will be transcribed for comment. The issues and comments raised will be included in the Final EIR.

3. AIM AND EXPECTED OUTCOME OF THE MEETING

The aim for the meeting was to relay to the Department of Economic Affairs Environment and Tourism (DEAET) the changes in the Revised Draft Environmental Impact Assessment Report (EIR), and to give background regarding these changes as well as why they were implemented in the report. Further, an aim of the meeting was to discuss the process going forward according to the 2006 National Environmental Management Act (NEMA) Regulations, under which the EIA is being conducted.

4. PRESENTATION: KEY CHANGES TO THE DRAFT ENVIRONMENTAL IMPACT ASSESSMENT REPORT AND ENVIRONMENTAL MANAGEMENT PLAN

By way of introduction, Ms Ball, thanked all present for their time and indicated that Arcus GIBB is pleased to present the key changes to the Draft EIR.

Mr Reuben Heydenrych (GIBB) presented the findings on the Revised Draft Environmental Impact Report (EIR) (refer to presentation slides provided in Appendix 2).

The issues raised and discussed following Arcus GIBB's presentation are captured in the table presented in Appendix 1.

5. ISSUES AND COMMENTS RAISED AND DISCUSSED

5.1 Issues and Comments raised

The table contained in Appendix 1: "Record of Issues Raised and Discussed" details the issues, comments and concerns, which were raised and discussed at the meeting.

6. WAY FORWARD AND CLOSING REMARKS

6.1 Minutes of Meetings

Ms Ball indicated that the EIA Team would endeavour to distribute the minutes of the meeting to the commenting authority as soon as possible after the meeting.

The DEA&ET will have 14 days to verify the minutes and provide their comments to the GIBB Public Participation Office.

6.2 Timeframes

In terms of the timeframes, those in attendance were informed that the public review period of the Draft Environmental Impact Report (EIR) has been extended to 07 August 2011.

Comments received will be used to produce the Final EIR, which will then be submitted to the Department of Environmental Affairs (DEA) (the decision-making authority for the EIA) for their consideration.

The timeframe for submission of the Final EIR will depend on the quantity and type of comments that are received from the authorities, as well as other I&APs during the review period.

A letter will be sent to all registered I&APs informing them of the authorities' decision.

6.3 Concluding Remarks

Ms Ball thanked everyone for constructive engagement and encouraged them to submit comments on the Revised Draft EIR. The meeting was closed at 12:30.

APPENDIX 1: RECORD OF ISSUES RAISED AND DISCUSSED

No	Name	Comment	Response
1	Mr Andries Struwig	Mr Struwig asked why the Brazil and Schulpfontein sites were scoped out.	<p>RH responded that the main reason was because of integration problems surrounding transmission lines. The Brazil and Schulpfontein sites were judged to be too far from the existing and future electricity load centers. This was because the length of the transmission lines would mean a lot of power would be lost, as a result of 'line losses' during transmission of the power to the end users. He went on to say that it was not necessarily unfeasible from a nuclear perspective but the sites were not suited to the criteria for Nuclear-1.</p> <p>JMB added that Eskom would encounter difficulties building the long transmission lines required by the Brazil and Schulpfontein sites because they would have to negotiate with numerous land owners for servitude rights and there were environmental issues within these long transmission corridors. However, Eskom has not ruled out the possibility of building nuclear power plants at these sites in the future.</p>
2	Mr Andries Struwig	In response Mr Struwig stated he was concerned that the Brazil and Schulpfontein sites were scoped out based on issues surrounding transmission lines. He said construction of transmission lines should be the concern of a separate EIA.	JMB responded that the two sites were indeed scoped out based on transmission integration issues. But also they were scoped out because of the urgent need for more power generation. According to the IRP ¹ an additional 9 600 MW have to get onto the grid by 2023 and there is an urgent need to replace 40 000 MW of existing generation capacity. Finally she said that currently South Africa is sitting at an 8 % reserve margin but it needs to increase this to 15 %. Because of this South Africa is currently facing an energy crisis.
3	Mr Andries Struwig	Mr Struwig expressed concern about the affects of spoil on the spawning grounds of Chokka.	RH stated that Chokka spawns at depths of no more than 50 m. The spoil will be dumped 5 km from shore at a depth far greater than 50 m.
4	Mr Andries Struwig	Mr Struwig asked if the dumped spoil would be transported by coastal processes into the	RH responded that to the best of his knowledge no but he would have to check the oceanographic report. He reiterated that the specialists' advice for the EIA was based on making the project workable.

¹ Integrated Resource Plan
RECORD OF DEA&ET MEETING
07 JUNE 2011

PROPOSED ESKOM NUCLEAR POWER STATION AND ASSOCIATED INFRASTRUCTURE
 REVIEW OF REVISED DRAFT ENVIRONMENTAL IMPACT ASSESMENT REPORT

No	Name	Comment	Response
		Chokka spawning ground.	<p>Post-meeting Note: The Marine Assessment (Appendix E15 of the Revised Draft EIR) states the following: <i>“When associated with the discarding of spoil, disruption to the marine environment is significant. When mitigated by disposing spoil offshore (and by using only a medium pumping rate at Thyspunt), the impact is reduced to one of medium consequence and medium significance. The temporal and spatial limitations of the impacts associated with the disposal of spoil on Chokka squid at Thyspunt will have limited impact on the overall squid stock, when taken within the context of the extensive area over which this species spawns.”</i></p>
5	Mr Andries Struwig	Mr Struwig cited the EIR, which stated that spoil will affect only 1% of the national Chokka spawning ground. But he wanted to know how big this affect would be on the local Chokka fishery.	<p>JMB responded that studies have been done that have found that Chokka are widespread in the Thyspunt region and thus the significance of a 1% impact will not be great. But she said GIBB will have to relook at the report to confirm its findings.</p> <p>Post-meeting note: Page 35 of the Marine Assessment (Appendix E 15 of the Revised Draft EIR) states the following with respect to the impact on Chokka: <i>“From the above it is clear that <i>L. reynaudii</i>² will be impacted by the release of warmed cooling water. It is expected that adults will avoid an area of about 0.2 km² if a nearshore release is chosen where they are likely to experience temperatures above 22°C and a certain amount of egg mortality is to be expected. Nonetheless, the area to be affected is less than one percent of the coastal spawning ground centred between Plettenberg Bay and Port Alfred.</i></p> <p><i>“It is also important to note that individuals of this species show no dependence on specific spawning grounds and move great distances between spawning grounds (Sauer et al. 2000). As such, adults avoiding the warm water plume are likely to simply move to another spawning ground.”</i></p>

² *Loligo reynaudii* (Chokka squid)

**PROPOSED ESKOM NUCLEAR POWER STATION AND ASSOCIATED INFRASTRUCTURE
REVIEW OF REVISED DRAFT ENVIRONMENTAL IMPACT ASSESMENT REPORT**

No	Name	Comment	Response
6	Mr Andries Struwig	Mr Struwig asked if there will there be an exclusion zone along the coast which will affect the Chokka fishers.	JMB responded that only 1 km of coastline would be closed off directly adjacent to the site for security reasons. She also said that it would close off a small portion of the Chokka fishing grounds. She added that they would get to the bottom of the issue on 20 June at a specialist's meeting with the Squid Working Group and the South African Squid Management Industry Association (SASMIA) ³ .
7	Mr Andries Struwig	Mr Struwig asked what changes would have to be made to the road network surrounding Thyspunt.	RH stated that the modelling for the roads was based on the equipment needed for construction materials being bought from the port in Port Elizabeth. He went on to state that there would be small upgrades to roads. Specifically the interchanges of the N2 where some turning circles would have to be widened. He added that the Kromme River would also have to be upgraded. JMB said that the plans for the roads were not cast in stone.
8	Mr Andries Struwig	Mr Struwig asked if the eastern access road would be built to take heavy loads.	JMB stated that the construction of the road will be suitable for heavy loads. She went on to say that there will be approximately 63 heavy loads ⁴ throughout the 9 year construction period. The road will also be used to transport workers to the site from Sea Vista, St. Francis Bay and Cape St. Francis. She added that the engineers think building the eastern access road will be much easier due to alignment issues.
9	Mr Andries Struwig	Mr Struwig questioned if it was appropriate to be building a road that could take heavy loads through a sensitive wetland. He went on to ask if building the	JMB responded that the western access road would be more difficult to build because it would cut through dunefields. There are also social issues connected with the western access road. In a public meeting the residents of Oyster Bay and Umzamuwethu have asked that the connection between the internal access road and DR176 does not cut through Oyster Bay and Umzamuwethu.

³ A meeting with the Squid Scientific Working Group (under the Department. of Agriculture Forestry and Fisheries) has been arranged at the request of the SA Squid Management Industry Association (SASMIA)

⁴ Defined as a load of more than 100 tons

PROPOSED ESKOM NUCLEAR POWER STATION AND ASSOCIATED INFRASTRUCTURE
 REVIEW OF REVISED DRAFT ENVIRONMENTAL IMPACT ASSESMENT REPORT

No	Name	Comment	Response
		western access road would have a smaller environmental impact.	She reiterated the point that according to engineers the eastern access road would be easier to construct than the western access road.
10	Mr Andries Struwig	Mr Struwig questioned how appropriate it is to be building a large road to carry heavy loads that is only needed for the construction period. He went on to ask if plans have been made to downscale the road after the construction period had ended.	RH replied that the road is not that much bigger than a normal road because the trucks are of a standard design. The main concern is the trucks have large turning circles, which makes the geometry of the road different to a road for normal vehicles.
11	Mr Andries Struwig	Mr Struwig asked if the existing R330 could take the heavy loads disregarding the bridges. Mr Struwig further stated that residents are concerned that the road (in reference to the R330) will be used for construction traffic.	RH replied yes it could. Post meeting note: Construction traffic will be via the Western access and not the R330.
12	Mr Andries Struwig	Mr Struwig asked could the predicted traffic problems in Umzamuwethu be mitigated with underpasses and bridges.	JMB replied that building the road is a double edged sword because there are unavoidable social and biophysical issues. But the specialists think that this is the best alternative. The road currently carries a large number of pedestrians and runs by a crèche for small children. The community are unhappy about this even though underpasses will be built.
13	Mr Andries Struwig	Mr Struwig stated that Oyster Bay has huge problems with	JMB responded that the dune specialist, Dr Werner Illenberger, was of the opinion a road could be built through the dune field because there are ways to ensure that sand can blow

PROPOSED ESKOM NUCLEAR POWER STATION AND ASSOCIATED INFRASTRUCTURE
REVIEW OF REVISED DRAFT ENVIRONMENTAL IMPACT ASSESMENT REPORT

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		mobile dunes and he expressed concern that building a road through a mobile dune field will create a large management burden.	across the road safely. She said that there were still outstanding issues with the road that had yet to be resolved, and that GIBB would be providing Eskom with a recommendation in this regard.
14	Mr Andries Struwig	Mr Struwig asked where the construction waste will be disposed of.	RH and JMB said that they would need to consult the waste specialist report. Post-meeting note: The Revised Draft EIR states that the Aloes Waste Site near Port Elizabeth would be used. The report states that the site has a remaining lifespan of approximately 5 years. Thus, in its current design it would run out of capacity prior to completion of construction at Thyspunt. However, expansion of the site is currently being planned.
15	Mr Andries Struwig	Mr Struwig stated that the visual impact of the nuclear power plant is much less than that of wind turbines.	JMB stated that the SAHRA had recently approved a wind farm in the area, stating that a wind farm could potentially preserve the landscape value.
16	Mr Andries Struwig	Mr Struwig asked if the light as a visual impact been considered in the EIR.	RH replied that yes it had been. He went on to say that there is already a significant amount of light pollution from the Chokka industry. The light pollution of Nuclear-1 could be as large or smaller than the pre-existing light pollution but it will depend on the final design of the plant. Despite this the light pollution from the plant will not have an impact further than 2 km.
17	Mr Andries Struwig	Mr Struwig asked for the map ⁵ to be explained further because it was unclear.	RH replied that the green outlined shape on the map indicated the EIA Corridor; within which the power station can be placed and the yellow area is where the high voltage yard can be placed. The white hatched area is what is left over after all the environmental sensitivities have been considered. JMB added that in the white hatched area of the map there was the possibility for non-

⁵ "SITE SENSITIVITY: THYSPUNT – RECOMMENDED FOOTPRINT" as per the presentation

**PROPOSED ESKOM NUCLEAR POWER STATION AND ASSOCIATED INFRASTRUCTURE
REVIEW OF REVISED DRAFT ENVIRONMENTAL IMPACT ASSESMENT REPORT**

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			essential infrastructure to be built such as a visitor centre or museum. She emphasised that there is limited space and the non-essential infrastructure may have to be located off site.
18	Mr Andries Struwig	Mr Struwig asked what methodology was used to create the scoring system.	<p>RH said that the scoring is a weighted comparison. At the specialist integration meeting the waiting for each impact was agreed upon.</p> <p>JMB added that Chapter 9 of the EIR gives a full and detailed explanation of the methodology used for the scoring system. In short she said more than 250 potential impacts were put into a table. The impacts that were considered not significant or were the same across the three sites were removed from the table, thus leaving the impacts that differed at the three sites.</p> <p>She went on to say the site selection was both quantitative and qualitative. The weighting was created by GIBB has been subject to a round of public comment as well as three different peer reviewers.</p>
19	Mr Andries Struwig	Mr Struwig asked how the transmission integration factors can be weighed when it should be an entirely separate EIA.	RH responded that for the EIR GIBB considered transmission integration on a national scale, where the best place was to place a power station in relation to existing transmission infrastructure and demand. Thus the transmission integration in this context does not refer to the impacts of the powerlines.
20	Mr Andries Struwig	Mr Struwig asked why social impacts were not considered in the scoring.	JMB said the social impacts were considered to be the same at all sites and were therefore excluded.
21	Mr Andries Struwig	Mr Struwig stated that a minimum of 25% of employees will be taken from the local community. He asked will the migrant workers leave once the project has finished. And he went on to ask has it been considered that people will	<p>RH responded by saying that workers moving from the agricultural sector to work as a construction worker for Nuclear-1 was a concern but the social specialist did not consider it as a huge risk.</p> <p>JMB said that there is also concern about the ability of the current infrastructure to deal with an influx of workers. In an attempt to counter this problem, recruitment offices will be placed in the local communities such as Humansdorp and Jeffrey's Bay and not at the gates of the Nuclear-1 construction site.</p>

**PROPOSED ESKOM NUCLEAR POWER STATION AND ASSOCIATED INFRASTRUCTURE
REVIEW OF REVISED DRAFT ENVIRONMENTAL IMPACT ASSESMENT REPORT**

No	Name	Comment	Response
		move from the agriculture sector to the construction sector.	
22	Mr Andries Struwig	Mr Struwig asked where the workers village will be constructed.	RH replied that the workers village was not considered in this EIA. However, Eskom is in discussions with local authorities who are helping them identify the best sites.
23	Mr Andries Struwig	Mr Struwig asked if Eskom will buy a site which already has authorisation to build the workers village.	MT replied yes Eskom would buy a site with pre-existing development rights.
24	Mr Andries Struwig	Mr Struwig asked if any considerations had been made about what was going to happen to the workers houses after the construction phase was over. And what was going to happen with the workers once the construction finished.	JMB stated that Eskom has a reasonable track record with similar big projects. For example at the Medupi Power Station although Eskom was required only to hire 25% locals in some cases their workforce has been made up of 40% local people. MT said that the aim for Nuclear-1 is to make use of local people so that minimum relocation is necessary. JMB added that communities have said in a public meeting that there is a dire need for more housing in the area and there has been some anger expressed at Eskom who will be taking up land that could be used for current housing needs for locals.
25	Mr Andries Struwig and Mr Dayalan Govender	Mr Struwig asked if local services were going to be upgraded. Mr Struwig and Mr Govender expressed their concern that no land is currently zoned with development rights for a workers village in the area. They went on to say that the	MT responded that there is a need for Eskom to establish a stronger partnership with the local municipality because the municipality faces major challenges when it comes to service delivery. RH and JMB responded that it is acknowledged in the Social Impact Assessment and in the EIR that the municipality faced major service backlogs. It is therefore recommended that Eskom must agree with the relevant services providers (including municipalities) on the apportionment of responsibility for service upgrades before the start of construction for Nuclear-1.

**PROPOSED ESKOM NUCLEAR POWER STATION AND ASSOCIATED INFRASTRUCTURE
REVIEW OF REVISED DRAFT ENVIRONMENTAL IMPACT ASSESMENT REPORT**

No	Name	Comment	Response
		<p>developers will not be able to get approval for a workers village because of a lack of infrastructure. Current EIA applications are being blocked until it can be demonstrated that sufficient services are available. Furthermore, the municipality lacks money to update infrastructure, thereby compounding the problem.</p>	
26	Mr Andries Struwig	<p>Mr Struwig asked if the figure quoted in the IRP of 9 600 MW generated by nuclear power includes existing power generated by nuclear.</p>	<p>RH said that there is a need for 20 000 MW of power to be generated in the next ten years. Of this amount 9 600 MW will be generated by nuclear.</p> <p>JMB added that this is in addition to the current capacity at Koeberg.</p>
27	Mr Andries Struwig	<p>Mr Struwig asked if another nuclear power plant will be built after Nuclear-1.</p>	<p>Mervin Theron responded that it has been indicated in the EIA that the other sites considered for Nuclear-1 will be considered in the future for other nuclear power stations.</p>
28	Mr Andries Struwig	<p>Mr Struwig asked for clarification on the emergency zoning.</p>	<p>RH responded by stating that no private development within 800m of Nuclear-1. Furthermore Eskom owns all land within 800 m of the power station. There will also be a 3 km zone within which development will be regulated. These zones are based on European Utility Requirements (EUR).</p> <p>The nuclear utilities of all European countries agreed on universal safety criteria for all nuclear power stations on the continent. The assumption of the EIA is that the National Nuclear Regulator (NNR) will approve the EUR zones. If this assumption is not correct, then the EIA may need to relook at these zones.</p>

**PROPOSED ESKOM NUCLEAR POWER STATION AND ASSOCIATED INFRASTRUCTURE
REVIEW OF REVISED DRAFT ENVIRONMENTAL IMPACT ASSESMENT REPORT**

No	Name	Comment	Response
			RH added that, apart from the above-mentioned zones, there is a non-regulated 2 km owner-controlled zone around the power station. Eskom would prefer to own this zone to make it easier for them to control the environment surrounding Nuclear-1. Finally he added that these zones are much smaller those than the ones imposed at the Koeberg Nuclear Power Station, which are 5 km and 16 km.
29	Mr Andries Struwig	Mr Struwig asked that if in the event of a nuclear disaster would Oyster Bay and Cape St Francis be affected.	RH stated that Oyster Bay is 5.5 km away from the proposed site of Nuclear-1 and Cape St. Francis is 10 km away. Both towns would be unaffected by the security zone. JMB added that originally residents from both towns supported the power plant because the security zones would mean controls on development in and around the towns.
30	Mr Andries Struwig	Mr Struwig asked what the existing no development zones were that the NNR imposes.	MT responded that these zones are 5 km and 16 km as at Koeberg. Post-meeting note: The Duynfontien residential development is about 2-3 km away from the Koeberg Nuclear Power Station.
31	Mr Andries Struwig	Mr Struwig expressed concerns about the evacuation plan and asked if evacuation timescales had been looked at. He added that it should be considered that the population of Cape St. Francis doubles during the December holidays and this would affect evacuation timescales.	RH responded that evacuation planning is based on the temporary evacuation within 3 km from the power station.
32	Mr Andries Struwig	Mr Struwig asked if different types of fuel cells such as	MT responded that no, different types of nuclear fuels have not been studied because Eskom want a system similar to that at the Koeberg Nuclear Power Station. He went on to say this

**PROPOSED ESKOM NUCLEAR POWER STATION AND ASSOCIATED INFRASTRUCTURE
REVIEW OF REVISED DRAFT ENVIRONMENTAL IMPACT ASSESMENT REPORT**

No	Name	Comment	Response
		Thorium had been studied.	<p>was because Eskom have 27 years experience of managing the power station and want to use this knowledge to run Nuclear-1.</p> <p>JMB added that an optional presentation by Eskom on nuclear safety in light of the Fukushima disaster has been offered after the public participation meetings.</p>

APPENDIX 2: PRESENTATION OF REVISED DRAFT ENVIRONMENTAL IMPACT REPORT

APPENDIX 3: ATTENDANCE REGISTER