

Cape Town

14 Kloof Street
Cape Town 8001
PO Box 3965
Cape Town 8000

Tel: +27 21 469 9100
Fax: +27 21 424 5571
Web: www.gibb.co.za

05 August 2015

Our Ref: J27035/ J31314
Your Ref: Email received 05 August 2011

Email: Andrea.VonHoldt@coega.co.za

Dear Andrea Von Holdt

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

COEGA DEVELOPMENT CORPORATION'S CONSIDERED COMMENTS ON THE DRAFT ENVIRONMENTAL IMPACT REPORT FOR THE PROPOSED NUCLEAR POWER STATION AT THYSPUNT AND THE PROPOSED HV TRANSMISSION LINES TO SERVE THE NUCLEAR POWER STATION

The Coega Development Corporation (CDC) has been intimately involved in the EIA process for Nuclear-1 at Thyspunt from the beginning. The CDC's interest in the success of this project and its associated EIA process lies in the provision of safe and reliable base load power, which is needed for the successful development of the Coega IDZ and the future growth of the NMBM, the Eastern Cape and the country. However, the CDC's support is for the nuclear new build programme per se and any flaws in the process to determine a preferred site have to be brought to the attention of the public and the authorities.

Notwithstanding the foregoing comments, the CDC has serious concerns in the way both projects (Nuclear 1 and transmission line EIA) are being managed, particularly from a co-operative governance perspective, since the one project is directly related to the other and neither can proceed without the other. In our view, the two projects should have been investigated as if they were one project with two different aspects. Of particular concern, bearing in mind the co-operative governance aspects, is that the content of the EIA report and associated specialist studies for Nuclear1 at Thyspunt contradict each other. The result is a flawed process, which has been and is still being rightly criticised, and which is very likely to be appealed. The result will be the delayed provision of reliable power which will negatively impact the growth and development of the NMBM, the Eastern Cape and the country as a whole. With all the other challenges facing the country, we simply cannot afford this. Further, as is clearly demonstrated below, the process to determine the preferred locations for Nuclear1 is flawed and hence the choice of the preferred site, being Thyspunt, is seriously flawed.

Set out below are some of the points that the CDC would like to raise regarding the contents of both EIRs, but this is not necessarily an exhaustive list.

1. COMMENTS ON THE REVIEW OF NSIP:

Comment 1:

1. The basis for the further site investigation process which led to the choice of 5 sites for Nuclear1, then reduced to 3 sites with Thyspunt as the preferred site, was the NSIP studies. These studies

were not rigorously re-assessed before embarking on that (sic) current EIA process. For example, one of the reasons for not looking at sites near Port Elizabeth/Coega IDZ was the probable higher seismic risk but this is all relative since Koeberg is also near a fault and all along the Cape Fold Mountain Chain there are seismic risks. Another key reason was that such sites were within 100km of the old homelands (Ciskei and Transkei). That aspect is irrelevant in the current democratic dispensation. Further and indisputably, at that time, the Eastern Cape was definitely not a Province favoured by the old dispensation and Eskom would have followed that lead. It is acknowledged that Thyspunt is in the Eastern Cape but it is rather remote and certainly away from the main opposition centres pre the democratic elections. Effectively, the whole contextual environment changed in 1994 but that has not been factored in to the selection of sites forming the basis of the current process for Nuclear1 at Thyspunt. If the fundamental basis of any process has flaws, then the process itself becomes flawed.

Response 1:

Your comments regarding the site selection process are noted. Planning cycles for nuclear power stations are known to be long-term processes, due to the long time frames for construction and the long life spans of these power stations. Typically, the life cycle of a nuclear power station from start of planning to decommissioning can take up to 100 years. Early identification of potential sites for a nuclear power station is therefore an essential part of the planning process.

Whilst the political limitations of the Nuclear Site Investigation Programme (NSIP) that was undertaken during the last two decades of the 20th century are acknowledged, seismic and geological factors that were used in the identification of the sites have not changed since the NSIP. Furthermore, the distribution of the main population centres in the Eastern Cape and Western Cape that act as load centres (centres of electricity demand) have also not changed.

Your statement that potential seismic risks of sites near Coega should not be considered is noted and it indeed true that the Duynefontein site does have higher seismic risks than either Bantamsklip or Thyspunt. However:

- the seismic risk of the Duynefontein site is a known factor, and it is known that design measures can be put in place to mitigate the seismic risks at Duynefontein. The design of the Koeberg Nuclear Power Station is an example of such design, as it includes a seismic raft specifically designed to protect the power station against earthquakes experienced in the Cape Folded Belt; and
- the scientific identification of seismic risk is based on the accumulation of at least 5 years' worth of micro-seismic monitoring, which has not been undertaken for any sites near Coega, but has been undertaken for the sites identified in the NSIP. Thus, the seismic suitability of sites near Coega cannot be confirmed at this time.

You note above that the delayed provision of power will impact negatively on the Nelson Mandela Bay Municipality, the Eastern Cape and Country as a whole. However, if the seismic suitability of sites around Coega were first to be confirmed to include it as a potential candidate site for Nuclear-1, it would result in a delay of at least another five years. It could then be questioned, if it is found the Coega environment is not seismically suitable, why the urgent development of additional power generation capacity was unnecessarily delayed for investigation of a site that could in any event be considered for future nuclear power stations. The Integrated Resource Plan provides for 9,600 MW of nuclear generation, and Eskom has indicated its intention to develop more than one nuclear power station. A site around Coega or in the former Eastern Cape homeland areas could therefore be investigated in future nuclear power generation EIAs.

Project planning for large construction projects typically includes a pre-feasibility and feasibility assessment prior to detail planning and environmental impact assessment. Considering that the NSIP was focused on initial identification of potential nuclear power station sites, it should be regarded as an initial feasibility or even pre-feasibility study. Given this focus of the NSIP, it is reasonable that it would not have addressed associated infrastructure, environmental impacts, emergency planning and economic considerations. As indicated above, the socio-economic realities today have not changed to such an extent that the major load centres in the Eastern and Western Cape (Port Elizabeth and the Cape Metropole) have changed, and the location of power station sites in each of these regions therefore remains as valid today as it was when the NSIP was undertaken.

Your argument regarding review of the NSIP after the 1994 Constitutional changes is noted. Such an approach would imply that all planning undertaken prior to 1994 should have to be frozen pending review – a situation that is untenable as all planning and delivery processes would necessarily have been in limbo for the time it took to review planning priorities in view of the new political dispensation. In the case of the NSIP, planning would have been delayed by many years, since the NSIP process took in excess of a decade. It can be questioned whether the freezing of all power supply planning for a full review of planning conducted over a period of two decades (and the resultant delay in rolling out of power supply) would be of benefit to South African society. Apartheid era planning did not serve all the people of South Africa, yet planning for the development of a power station does in fact serve the entire population, no matter where it is planned, as it feeds electricity into South Africa's national grid.

Comment 2:

2. Almost 30 years have passed since Eskom undertook the studies to identify possible coastal sites for Nuclear 1 in RSA. The current EIA for Nuclear-1 is being done based on the contents and outcomes of those studies. Many aspects (mainly political and social but also environmental) may have changed between then and now. Therefore, there exists the possibility that the three selected / preferred sites on which the EIA for Nuclear 1 is currently being done, may not necessarily be the optimal sites. The fact that Eskom considers that the process is too far down the line to identify alternative sites is not an acceptable response to the flawed basis on which the current EIA for Nuclear 1 has been undertaken. One of the fundamental principles underlying the EIA process, in South Africa and most of the world, is the proper consideration of alternatives and this is an unqualified requirement. Further, there have been advances in technology and lessons have been learnt by the nuclear industry at large in the intervening 30 year period. There is no indication that such information has been incorporated into the decision making process before proceeding with the 5 sites previously selected for Nuclear1.

Response 2:

Please refer to Response 1 above.

Indeed many technological advances in nuclear power generation have been made in the last two to three decades.

However:

- the decision of a suitable site for a nuclear power station is still largely driven by factors of seismic suitability, as this is arguably one of the prime factors that influences the design and cost of nuclear power stations. Nuclear power station (such as those built along the Pacific Rim) can be designed to withstand earthquakes¹, but at considerably higher cost than a "standard" nuclear power station design.
- irrespective of the type of technology (nuclear vs. non-nuclear or renewable), it is preferable on a strategic level to place power generation as close as possible to major "load centres" where it will be required to prevent power loss due to long transmission lines and to stabilise the grid. In this respect, nothing has changed in the last 30 years – the Duynefontein and Thyspunt sites are still close to two major urban centres.

Comment 3:

3. Some regions were ruled out on the basis of a single constraint, although they were not necessarily less favourable in any other respect. This must be regarded as a serious weakness in the investigation of alternatives.

¹ In this respect it is important to note that the Fukushima nuclear incident was caused by the tsunami and not by the earthquake itself.

Response 3:

It is unfortunately not clear from this comment whether the disqualification of sites on the basis of a single constraint refers to the NSIP or the Nuclear-1 EIA process. As such it is not possible to respond to this comment.

Comment 4:

4. The regional suitability study (Phase 3a) did not take into account anticipated future power demands and ease of connection to the national grid. This has to be a major consideration.

Response 4:

Your comment is noted. Whilst the NSIP may not have considered future power demands and ease of connection to the national grid, these factors are explicitly considered in the Transmission Integration / Grid Planning Report (Appendix E28 and E35 of the EIR). This contains more updated information than was available at the time that the NSIP was produced and provides more current information on the location of the power demands and transmission integration.

Comment 5:

5. Power transmission only gets mentioned in Phase 3b, site specific studies, and anticipated future demands are not mentioned at all which is a very serious oversight bearing in mind the huge environmental impacts of major HV transmission lines. This is particularly true where visual impacts are likely to be some of the most significant because of future tourism considerations.

Response 5:

Your comment is noted. Comprehensive environmental impact assessments (EIAs) of the proposed transmission lines from each of the proposed Nuclear-1 sites have been commissioned. With the exception of the transmission line from the Bantamsklip site, these EIAs have been completed and provide detailed accounts of the potential environmental impacts, including the visual impacts, of the transmission lines.

Comment 6:

6. Comments and possible actions to revisit certain aspects of the findings are given in the Tables and hence there was clearly the anticipation of further reviews which either have not happened or have not been made public.

Response 6:

No further review of the NSIP has been undertaken.

It is clearly preferable to base current decision-making on current information. The Nuclear-1 power station EIA and the EIAs for the transmission lines from the proposed Nuclear-1 sites provide publicly available documentation on the potential environmental impacts of the power station and transmission lines. This information in these studies is current and as such, provides more valuable knowledge than that contained in the NSIP.

Comment 7:

7. A description of the process that was followed in the elimination of sites is also needed to ensure transparency.

Response 7:

The description of the process with reference to the NSIP is discussed in the NSIP studies. The process is briefly discussed below:

- The process starts off by performing a comprehensive screening desk top study at national level, involving all relevant stakeholders and multiple inputs at national level, culminating in the identification of typically the four most appropriate regions based on negative mapping. Transmission network requirements, regional seismicity, mineral resources, population densities, defence force operational areas, developmental planning, etc. all play a pivotal role in the selection and prioritisation of focus regions. The ultimate aim of the National Desk Top Study (NDTS) is to identify the four most appropriate and suitable regions.
- Each of the selected regions is studied and through further negative mapping typically three candidate areas were selected per region.
- Each of these selected areas was studied in further detail, typically resulting in 6 to 10 candidate sites per area.
- Each candidate site was then investigated in more detail and ranked through an appropriate selection technique like MADA (Multi-Attribute Decision Analysis model). The site selection ranking is based on predetermined criteria and weightings.
- Confirmation of the suitability of the two highest ranked sites per area results in what is termed selected sites.
- Selected sites were qualified by performing siting investigations.

2. THE NEED FOR BASE LOAD POWER GENERATION:

Comment 8:

Any developing industrial country, and South Africa is such a country, needs base load power generation. South Africa's indigenous primary energy sources are coal and nuclear and, to a limited extent, hydro-power. With current technology, nuclear has a significantly lower carbon footprint than coal but carbon sequestration technologies must be pursued and fossil fuels may conceivably be used in the future

From South Africa's perspective, the preferred nuclear technology is Generation III PWR reactors of which the Westinghouse AP 1000 and the ERP are the best known.

Response 8:

Your comment is noted. As indicated in Chapter 3 of the revised Draft EIR, nuclear electricity generation has a carbon footprint similar to many of the renewable power generation technologies. It is agreed that carbon sequestration may play a part in coal-fired power generation in future.

Comment 9:

It is recognized that fissile nuclear power is not currently sustainable, as it relies on non-renewable resources and breeder reactors are still a challenge as is fusion nuclear power. However, it is the best option for now for base load generation, especially considering that coal is the alternative and coal is far more damaging to the environment.

Response 9:

Your comment is noted.

Comment 10:

The renewable energy sector can contribute to the energy mix but most renewable energy technologies are still intermittent energy sources. With advances in those technologies and particularly with energy storage technologies, concentrated solar and to a lesser extent photovoltaic, wind, wave,

tidal and geothermal energy sources will have a place in the global energy mix but not necessarily all of them in South Africa.

Response 10:

Your comment is noted.

3. COEGA IDZ AS AN ALTERNATIVE SITE:

Comment 11:

The Coega IDZ could be an alternative site for the development of Nuclear 1 or some or all of additional nuclear power stations that will be constructed to achieve the 9.3 GWH nuclear contribution to the latest IRP.

Response 11:

Your comment is noted. Please refer to Response 1 for the reason why Coega is not considered as an alternative in the Nuclear-1 EIA. However, it may be considered as an alternative site for nuclear power stations after Nuclear-1.

Comment 12:

1. Coega's location is better for integration with the national grid, for the export of power to the hinterland and as a local power demand centre, compared to the Northern Cape which has no local demand and no grid connection.

Response 12:

Your comment is noted. The Northern Cape sites were not further considered in the Nuclear-1 EIA process at the end of scoping.

Comment 13:

2. Compared to Thyspunt, Coega is better for transmission and for network security and stability as there would now be an "anchor" for the long transmission lines from up country. There would also be support to the Eastern Cape generally to enable greater growth and socio-economic development which is so urgently needed.

Response 13:

Similar to Coega, Thyspunt is also suitable for transmission and network security and stability. As pointed out in Response 1, Coega's seismic conditions are still unknown and still need significant investigations compared to the Thyspunt site. It also needs to be considered that the emergency planning zones of Nuclear-1 may effectively sterilise significant parts of Coega, should Nuclear-1 be constructed there.

Comment 14:

3. Coega is located in the NMBM and therefore can support the significant demands on local amenities including accommodation, education, medical, retail, recreational, land, sea and air transport, etc. During operation, maintenance and refueling, the same local amenities can provide continuing support.

Response 14:

Your comment is noted. All of these points with regards to goods and services being supplied in Port Elizabeth are valid points and apply equally to a site like Duynfontein, which is located in the Cape Town metropole. The Economic Assessment (Appendix E17 of the EIR) assesses the economic benefits of the alternative sites and found that Thyspunt would have a higher economic benefit than either Bantamsklip or Duynfontein. Macroeconomic indicators favour the Western Cape sites but household and social indicators favour Thyspunt. The cost-effectiveness analysis indicates that Thyspunt has a very slight edge over Duynfontein and a somewhat larger edge over Bantamsklip. These benefits would continue to accrue to the Eastern Cape economy, whether Nuclear-1 is constructed at Thyspunt or Coega.

Comment 15:

4. "The current environment would not be affected by the No-Go decision" is an incorrect and misleading statement in the Nuclear1 Draft EIR. Global warming will result in significant biophysical changes (e.g. greater water stress) leading to economic challenges and ultimately social unrest and doing nothing is not an option.

Response 15:

The statement made in the first paragraph of Section 5.1.5 of the Revised Draft EIR is: "*The current biophysical, social and economic environments would not be altered **by the development of the proposed project***". It is therefore not suggested, as indicated by your comment, that there would be no changes in the environment. Global warming is a reality and continuing to rely exclusively on fossil fuels will aggravate this situation. It is, further, acknowledged in the EIR that there are other stresses on the environment (e.g. coastal urban development) that would, in the absence of Nuclear-1, also cause continuing transformation of the environment at the Bantamsklip and Thyspunt sites.

Comment 16:

5. An EIA cannot be based on information which may not be relevant anymore, due to the passage of time, and, further, the generation capacity should be placed where the highest local current and future demand is, i.e. Port Elizabeth (Coega IDZ) or East London. The massive power lines that now have to be considered between Thyspunt and the Coega IDZ will not have to be installed if Nuclear1 is located close to Coega or in the IDZ.

Response 16:

The EIA is based on current information.

From a transmission perspective the Thyspunt site can be easily integrated into the current network. Transmission lines from the Thyspunt site will feed into existing sub-stations (Grassridge and Dedisa) and a new proposed Port Elizabeth substation.

4. CAPACITY OF THE KOUGA MUNICIPALITY:

Comment 17:

One institutional aspect which has not been given enough emphasis in the Nuclear1 Draft EIR is the capacities and capabilities of the local municipality and other local institutions. In terms of the required human and financial resources to effectively interface with the main players, being Eskom, the prime contractor and all of the sub-contractors, the present Kouga Municipality is hopelessly under resourced.

Response 17:

It is acknowledged in the Revised Draft EIR that there are severe current service delivery backlogs, particularly in the Kouga Municipality, and that the municipality does not have the capacity to cater for current demand, never mind additional demand that will be created by the influx of construction and operational personnel for Nuclear-1. It is therefore a key recommendation that Eskom must engage with the relevant municipalities well before construction to agree on the apportionment of financial responsibility for upgrades to infrastructure.

Comment 18:

In terms of the above, the serious weaknesses in the specialist studies for Nuclear1 at Thyspunt had to be pointed out by I&AP's and there is still no clear resolution unless Eskom is willing and able to step in with significant financial and human resources.

Response 18:

Please refer to Response 17. It is clearly acknowledged in the Revised Draft EIR that Eskom will be responsible for a portion of infrastructure upgrades that will be required due to Nuclear-1. However, Eskom cannot be held responsible for funding the "catch-up" plans for existing service delivery backlogs that are the result of poor planning by the responsible service providers, including provincial and local government.

5. BENEFITS/POSITIVE IMPACTS OF NUCLEAR:

Comment 19:

1. Although seemingly counter-intuitive, a nuclear site has a large surrounding area of land with formal protected status which will give benefits for conservation. The terrestrial ecology study has identified already degraded adjacent areas which theoretically should not be impacted by the low level of development. However, such a prime coastal location will undoubtedly come under increasing pressure from developers who are unlikely to make environmental considerations a priority above purely financial considerations. In previous comments, it has been suggested that the whole area from Oyster Bay to the outskirts of Cape St. Francis and St. Francis Bay should be declared a reserve with a highly protected status. To make the impact even more positive, a visitors' centre should be constructed which would show humankind's development from simple hunter-gatherer societies (Strandloper) through the stone, iron and subsequent ages to the 22nd century as epitomised by the iconic nuclear power station. Effectively, the St. Francis Bay area would become the hub of the Garden Route and tourists could continue in which ever direction they are going or cross over to the Langkloof and Gamtoos Valley and onwards to Baviaanskloof and the other magnificent wilderness areas.

Response 19:

Your comment is noted. The potential conservation benefits of the large surrounding areas, particularly with respect to the wetlands areas around the recommended power station position, is well-recognised by the terrestrial ecological specialists. It is a key recommendation that the Eskom property should be expanded to maximise on the benefit created by the creation of a *de facto* nature reserve around the proposed power station.

Comment 20:

The social impacts, identified as generally negative during the construction phase, can be mitigated or even turned into a positive by adopting the CDC's unique and proven approach to managing labour and skills development. Humansdorp and the surrounding areas will be revitalized if the Project is planned and developed as it should be.

Response 20:

Your comment is noted with thanks. It will be recommended that the CDC's model of "Zone Labour Agreements" should be considered in the development of labour and skills development policies for Nuclear-1.

Comment 21:

2. Accommodation for construction workers will also be a positive and not a negative if the CDC's approach is adopted. The project would add to the permanent housing stock of the area.

Response 21:

Your comment is noted.

Comment 22:

The greatest positive impact is country wide with a future guarantee of sufficient power for both the industrial and residential sectors as those who do not have access to electricity now are connected and as the general living standard of the country rises so that the inequalities of the past are eliminated. Those of us who are lucky to have all our energy needs met and who can afford such a lifestyle cannot deny those opportunities to all of our fellow countrymen in the future. This is about the future and not the privileges of the past.

Response 22:

Your comment is noted. It is to be noted that some interested and affected parties instead recommend switching off power supply to large industrial facilities rather than generating more power.

6. SPECIALIST STUDIES:

Comment 23:

Reading the specialist reports supporting the EIA process for Nuclear 1 at Thyspunt and hearing how some of the specialists responded to questioning at the public meeting on 25th May 2010 in St. Francis Bay, the almost inescapable deduction is that Eskom's desired outcome is driving the conclusions of the specialists' reports. This deduction is reinforced by the fact that, some time ago, Eskom purchased the land for the three preferred sites, bearing in mind that these three sites were arrived at by a process which can be considered to be flawed – see Section 1 above.

Response 23:

As indicated in Response 1, the planning and development of nuclear power stations is subject to very long time-frames. Had Eskom not taken a strategic decision to acquire the potentially suitable sites several decades ago, their options would today be limited. Furthermore, it is well known that demand for a particular piece of land drives prices. Should Eskom not have acquired these properties when it did, the price today would have been astronomical, after it became known that these sites were wanted for power station development. Eskom has, therefore acquired the sites at risk, knowing that there are several legal processes (of which the EIA process is only one) required prior to the construction of a power station.

Comment 24:

There appears to be a decidedly generic approach to the Terms of Reference of the specialist studies supporting the EIA process for Nuclear 1 at Thyspunt. Further, there is a serious lack of real local

knowledge and there has been insufficient engagement with local people who do have domain knowledge. It is suspected that the specialists had minimal engagement with local people who do know their surroundings intimately and, further, the specialists did not widen their approach to include comparable projects/information from other parts of the world.

Response 24:

All the Nuclear-1 EIA specialists were required to engage with local specialists and have indeed done so. Specialists based their assessments on data obtained through field visits and secondary data collection, experience with similar large construction projects, experience in similar environments and through consultation with relevant local specialists or interested and affected parties.

7. THE TRAFFIC AND TRANSPORT ASSESSMENT:

Comment 25:

A good example of an inadequate assessment of realistic alternative routes to the proposed site at Thyspunt is the option to come off the N2 near the Kromme River Bridge. The reason for looking at this option is that it should be practical to have a dedicated haul road to the site thus avoiding mixing heavy construction traffic with school children, pedestrians, cyclists and cows crossing on the existing roads. This separation of traffic was a key strategy when the CDC was assessing the construction requirements of the now discontinued Coega Aluminium Smelter Project. As it stands, the study just looks at existing roads or tracks and there are many problems with this approach, not least being their exclusion from the EIA process and the lack of clarity in terms of who will fund and implement this significant piece of infrastructure. Even the transport specialist understood that Humansdorp would be a bottleneck but the study has continued in this wrong direction. It is worth bearing in mind that the main traffic scenario presented assumed that the existing R330 would take the heavy construction traffic and an upgraded minor road would take the buses bringing the workers to the site. This is the wrong way round.

Response 25:

Your comment is noted. The Thyspunt site requires transport route upgrades with regard to public roads, access and emergency evacuation during the construction phase. The recommended routes in Version 9 of Transport Report were revised after the Revised Draft EIR was provided for public comment in May 2011. Based on this revision, the R330 is now proposed to be used only for passenger 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 and heavy vehicle traffic and as an emergency evacuation route for areas such as Oyster Bay. The DR1762, which links the R330 and Oyster Bay Road is now proposed to be surfaced to provide improved east-west connectivity. Bypass roads to the east and west of Humansdorp are also now proposed to be constructed to reduce the traffic impact on central Humansdorp.

Comment 26:

The recent (June and July 2011) flooding in the Kouga area and subsequent washing away of a bridge and portion of road that links St Francis Bay, Port St Francis, Cape St Francis and the residents of the Rebels Rus Nature Reserve to the outside world is an example of how inadequate the existing infrastructure is to deal with a relatively small natural disaster. Evacuation of residents was near impossible. How would Eskom deal with a nuclear disaster at the proposed Thyspunt site? It is imperative that more information is supplied regarding the evacuation protocols in the event of a disaster, and equally importantly, the adequacy of the existing and proposed transportation infrastructure must be assessed in the EIA for Nuclear1 at Thyspunt. This critical aspect has been overlooked/left out in the EIA and it must now be included.

Response 26:

Your comments are noted. A revised Transport Assessment has been compiled to discuss this issue. This report will be made available for public comment and review as part of the Revised Draft EIR Version 2.

The study notes that the section of R330 across Sand River was destroyed by flood in July 2011. The destruction of the bridge by flood was linked to unauthorised channels constructed on the Links Golf Course that placed a large amount of water in the dune field. The damming of this water was released in conjunction with the flood water in the Sand River and caused the bridge to wash away (twice). The box culvert was severely damaged and inhibited traffic flow between Humansdorp and St. Francis Bay while it was being repaired for a few days.

Bridges and culvert are generally designed for 1:100 year floods. The flood experienced in 2011 was, however, considered to be a flood with much greater scale than designed for and the additional release of the dammed water exacerbated the problem. Construction and operation of Nuclear-1 may be affected should the flood occur again during the construction and operations phase of the proposed nuclear plant. It is, therefore, suggested that a Stormwater Assessment Plan should be undertaken for the flooding situations of Sand River at the R300 crossing. Design specifications of the bridge should be reviewed and mitigation measures, such as embankment protection, should be implemented.

Comment 27:

A realistic noise impact assessment on residents in the St Francis Bay area has not been undertaken and that is one of the big advantages of the alternative route from the N2. This route was pointed out by local residents which clearly showed the superficial local work undertaken by the specialists; lateral thinking is key to a project like this.

Response 27:

The Noise Impact Assessment (Appendix E23 of the Revised Draft EIR) was undertaken strictly in accordance with the applicable SABS standard. However, as indicated in Response 26, the TIA has been extensively revised so that construction traffic will not use the R330.

8. THE SOCIAL IMPACT ASSESSMENT:

Comment 28:

There are many social issues which will arise from the implementation of a project of the magnitude of Nuclear1 at Thyspunt including inward migration of job seekers, additional schooling and medical facilities, greater demand for municipal services such as potable water supplies, sewerage and sewage disposal, refuse collection, security and safety services, etc. There are also the other social factors with such large projects including a higher incidence of infections, more crime, greater risk of labour instability, etc. The CDC's experience with the above aspects can be accessed by the role players, particularly the Kouga Municipality.

Response 28:

Your comment is noted with thanks. A recommendation will be included in the next revision of the EIR (Draft EIR Version 1) that the Coega Development Corporation be consulted with regards to the design of social mitigation measures, employment and labour policies.

Comment 29:

Provided it is approached in the right way, the housing that will be required for skilled imported labour can be a useful addition to the local housing stock but expectations need to be managed. As far as

possible, skilled and semi-skilled labour must be sourced from the surrounding communities but a proper recruitment process must be put in place. Again, the CDC's experience could be invaluable.

Response 29:

Your comment is noted with thanks. A recommendation will be included in the next revision of the EIR (Draft EIR Version 1) that the Coega Development Corporation be consulted with regards to housing development policies and recruitment.

Comment 30:

There is lack of clarity in terms of who will fund and implement this significant piece of social and municipal infrastructure and ensure sustainability into the future.

Response 30:

It is a key recommendation of the Revised Draft EIR that Eskom must reach agreement with municipalities regarding the funding of infrastructure upgrades that would be required to cater for the influx of construction and operational personnel for Nuclear-1 prior to the start of construction, so that the required upgrades can take place before the start of the Nuclear-1 construction.

Comment 31:

The labour requirements for the construction phase are massive (estimated at 7 700). Where will the labour be sourced from? Any high level technical skills must not simply be imported from abroad.

Response 31:

Your comment is noted. The use of local labour must be maximised as far as possible. On a high-technology project such as the construction of a nuclear power station, it is inevitable that some labour will be imported and it is likely that the vendor will provide significant staffing from abroad. However, it has been recommended that a minimum of 25% of construction phase labour must be local.

9. ECOLOGY OF THE THYSPUNT SITE:

Comment 32:

Thyspunt is special and an innovative approach to the disturbance of flora will be required. Further, there should be an independent oversight committee with local and other NGO representatives starting from the planning and design phase, through the construction phase and including the operation phase. This would be similar too but an improvement on the EMC set up for the Coega Project.

Response 32:

Your comment is noted and it is agreed that an innovative and original approach to the conservation of the site outside the immediate power station footprint will be required. The Thyspunt site has significant natural and cultural history assets that need to be protected. As you mention in Comment 19, the conservation of the site could provide substantial conservation benefits. Therefore the effective protection of these natural and cultural assets throughout the construction phase is essential, as most this is the phase of development during which there is the greatest potential for negative impacts.

It is a key recommendation of the Revised Draft EIR that an Environmental Monitoring Committee (EMC) should be set up, with representation from local communities. The proposed terms of reference for the EMS are specified in the Draft Environmental Management Programme (Appendix F of the Revised Draft EIR).

10. GENERAL COMMENTS:

Comment 33:

How much hazardous (non nuclear) waste will be generated during construction and operation of the nuclear power station at Thyspunt? Insufficient information is given on where and how the waste will be (temporarily) stored on site and then where it will be taken for disposal? The only reasonably close licensed H:H waste facility is Aloes in Port Elizabeth. No information is supplied regarding the life span of this waste facility and whether it can accept the volumes and types of hazardous waste anticipated.

Response 33:

Information of the capacity and expected life-span of the Aloes waste disposal site is provided in Section 9.29.3 of the Revised Draft EIR. This section states the following: *"This site has an H:H rating and is estimated to have a remaining lifespan of only approximately 5 years. This site in its current design would therefore run out of capacity prior to completion of construction at Thyspunt. However, expansion of the site is currently being planned. General waste would also have to be disposed at this site."*

Comment 34:

Is RSA ready to handle nuclear? Who will fund the construction and operation of the proposed Nuclear-1 facility at Thyspunt; it shouldn't automatically be Eskom? It is more than 30 years since Koeberg was constructed and the expertise from that time has now either gone or has been seriously diminished. The IAEA recognizes that a nuclear renaissance will be challenged by the lack of experienced engineers and a new cadre of suitably trained engineers.

Response 34:

Government made a decision in late 2012 that Eskom will be the operator and owner of nuclear plants. However, the procurement and investment process is currently still being driven by Government.

Comment 35:

It is proposed that Generation III technology is used and Emergency Planning Zones (EPZ's) of 800m and 3km have been stipulated based on European utility companies' proposals. How will RSA afford this technology? If a more affordable technology is selected and more extensive EPZ's are required, what process will then be followed? Will the EIA be re-started?

Response 35:

The application of EPZs based on European Utilities Requirements is a key assumption of the Nuclear-1 EIR. If another form of technology is used that needs larger EPZs, then this assumption would be incorrect and the EIA would have to be amended.

References to detailed assessments of the Life Cycle Cost of Electricity (LCOE) of nuclear technology vs. other forms of electricity generation are provided in Chapter 5 of the EIR Version 2. These indicate that although nuclear power stations have a high capital cost compared to other generation alternatives, their operational costs is low and therefore the overall cost of nuclear generation over its life cycle is comparable to other forms of generation.

Comment 36:

It is strongly recommended that a thorough revision of the investigation of alternatives (specifically alternative sites) is done, as the basis for the current Nuclear1 EIA (NSIP studies) was determined

more than 30 years ago. There have been substantive changes in our political regime, and our social and environmental legislation, all of which will impact on the investigation of alternatives that will ultimately define the preferred site(s) for nuclear power stations in the country.

Response 36:

Your comment is noted. Please refer to Response 1 regarding the consideration of alternative sites. It is also to be noted that GIBB has reviewed the NSIP and has found the proposed alternative sites to be reasonable and feasible. The DEA, in its approval of the Nuclear-1 Scoping Report, also found the proposed sites to be reasonable and feasible.

Comment 37:

The engineering feasibility study that was done for the seawater intake pipelines for Thyspunt during June 2011 should be made available to the public for review and comment.

Response 37:

GIBB is not aware of an engineering feasibility study that has been undertaken for the offshore pipelines.

Comment 38:

At the public meetings and at various key stakeholder meetings, Eskom was asked what it would do with the land should a negative environmental authorisation be issued for the Thyspunt site. The response has always been that Eskom would sell the land to the highest bidder. However, it has also been made clear in the EIA Report, including in some of the specialist studies (e.g. VIA), that Eskom will be constructing nuclear power stations on all three of the proposed sites, as and when required. These statements are contradictory. Again, this leads to the clear need for the investigation and assessment of alternative suitable sites along the South African coastline for nuclear power stations.

Response 38:

The statement in the VIA is incorrect. The three sites considered as alternatives in the Nuclear-1 EIA process are alternative sites for nuclear power station development. Eskom has been it clear that it intends developing additional power stations after Nuclear-1 (in line with the Integrated Resource Plan, which requires 9,600 MW of nuclear power by 2025), and would consider these sites for the development of Nuclear-2 or Nuclear-3. However, the development of the remaining alternative sites for Nuclear-2 or Nuclear-3 is dependent on future EIA processes, which may identify additional sites besides those considered in Nuclear-1.

Comment 39:

It is understood that there is or will be a review panel which will peer review the recommendations and conclusions that will come out of the EIA process for Nuclear1. In the interests of transparency and good corporate governance, the constitution of that panel should be made known. Such a panel must not include any entities or individuals who have a vested interest in the outcome of the current EIA process. It would be hoped that at least one of the panel members would be from the IAEA and another from an internationally recognized and benchmarked operational nuclear power plant; Koeberg would be excluded but not for reasons of poor operation.

Response 39:

The review panel has been appointed by the Department of Environmental Affairs (DEA) to assist it with the review of the Nuclear-1 EIA. As such, a request to make the names of the review panel members known should be directed to the DEA.

Yours faithfully
for GIBB (Pty) Ltd

A handwritten signature in black ink, consisting of a large, stylized 'S' shape with a small loop at the top and a tail that curves back to the right.

The Nuclear-1 EIA Team