

5 August 2015

Our Ref: J27035 / J31314

Your Ref: Email received 26 July 2011



Ms Gayle Ritchie
32 Siesta Sands
Port Elizabeth
6070

Email: gesritchie@googlemail.com

Tshwane

Lynnwood Corporate Park
Block A, 1st Floor, East Wing
36 Alkantrant Road
Lynnwood 0081
PO Box 35007
Menlo Park 0102

Tel: +27 12 348 5880
Fax: +27 12 348 5878
Web: www.gibb.co.za

Dear Ms Ritchie

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

I, Gayle Ritchie would like to register as an Interest and Affected party to the proposed nuclear site at Thyspunt nuclear site. My address is 32 Siesta Sands, Port Elizabeth.

The revised EIA is flawed and my reasons are as follows:

Comment 1:

Thyspunt is a very sensitive ego (ecosystem?) system and believe that it needs to be protected. There is a variety of animals, birds, plants, a moving dune system, wetlands, otter breeding grounds and squid breeding grounds.

This is their habitat and we cannot take it away.

Response 1:

Your comment is noted. However, specialist ecological assessments that investigated the impacts on dunes, flora and fauna have concluded that the significance of the ecological impacts at Thyspunt would be low enough to permit the construction of a power station at this site. A key element of this outcome is the mitigation measures proposed by the specialists which Eskom will be required to implement if approval is received. This includes the creation of a nature reserve around the power station which will result in the formal protection the property excluding the footprint which will be impacted by the construction and operation of the plant. This includes key ecological communities like wetlands in this nature reserve. A similar nature reserve currently exists at the Koeberg Nuclear Power station at Dynefontein in the Western Cape.

Comment 2:

Thyspunt is about to be declared a World Heritage Site, and you need to respect Khoisan and their ancestral home ground. This area needs to be protected and preserved.



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Response 2:

It was indicated in the Heritage Impact Assessment in the revised Draft EIR (Appendix E20) that Thyspunt has the potential to qualify as a World Heritage Site. However, there are currently no plans to turn the site into a World Heritage Site. Such declaration is subject to nomination by the Department of Environmental Affairs and acceptance by the United Nations Educational Scientific and Cultural Organisation (UNESCO) according to strict criteria. No such nomination has been lodged by the South African government. It is also required in terms of the National Heritage Resources Act that if there is an intention to register the site formally the land owner should be notified. To date Eskom has not been notified of any such intention.

The vast majority of the Khoi / San heritage sites, and especially those of high quality and a good state of preservation, occur along the coastline on the Thyspunt site. An intensive investigation into heritage sites undertaken in 2011 revealed that the central portion of the site, where the power station is proposed to be placed, contains very few heritage sites. The coastal sites will be conserved through maintaining a 200 m undeveloped zone from the coastline. Any sites within the footprint of the power station will be properly excavated prior to the commencement of construction.

Comment 3:

I am deeply concerned about the nuclear waste being removed passing residential and numerous schools from St Francis to George where it will be dumped.

We cannot put our present and future generation at risk.

Response 3:

Only Low Level Waste (LLW) and Intermediate Level Waste (ILW) will be transported from the nuclear power station to the Vaalputs nuclear waste disposal site in the Northern Cape. George will not be a final destination of these wastes. LLW and ILW will be transported in sealed drums (metal drums and concrete drums, respectively) that prevent the escape of radiation into the environment. This is an internationally acceptable practice that will be undertaken in terms of the conditions of the National Nuclear Regulator and the IAEA Regulations for the Safe Transport of Radioactive Material. In terms of the Regulations, the transport process is subject to radiation protection, emergency response, quality assurance and compliance assurance programmes. Such waste transport to Vaalputs has continued to take place from Koeberg Nuclear Power Station since it was commissioned more than 20 years ago without major incidents.

Radioactive waste management practices envisaged for Nuclear-1 are consistent with the IAEA guidelines for a Radioactive Waste Management Programme for nuclear power stations, from generation to disposal. Nuclear Power Station strives to minimise production of all solid, liquid and gaseous radioactive waste, both in terms of volume and activity content, as required for new reactor designs. This is being done through appropriate processing, conditioning, handling and storage systems. In addition, production of radioactive waste is minimised by applying latest technology and best practices for radiological zoning, provision of active drainage and ventilation, appropriate finishes and handling of solid radioactive waste. Where possible, the Nuclear-1 power station will reuse or recycle materials.

All forms of radioactive wastes are strictly controlled and numerous specialised systems and management practices are in place to prevent uncontrolled contact with these substances. These controls and practices differ for the different forms of radioactive waste. South Africa still has to

formally release a strategy for the long-term management of HLW, including spent fuel. Until such time, all spent fuel is stored temporarily either in spent fuel pools (wet storage), or in dry cask storage facilities (dry storage). This allows the shorter-lived isotopes to decay before further handling, a management strategy that is acceptable from a safety perspective. It must be noted however that as per the Department of Energy's Media Statement on Nuclear Procurement Process Update as released on 14 July 2015 strategies are complete to develop an approach for South Africa to deal with Spent Fuel/High Level Waste disposal.

Disposal of radioactive waste at an authorised facility is being done according to an approved disposal concept, defined and developed with due consideration of the nature of the waste to be disposed of and the natural environmental system, collectively referred to as the disposal system. The disposal system developed for this purpose makes provision for the containment of radionuclides until such time that any releases from the waste no longer pose radiological risks to human health and the environment. The safety assessment process used as basis for this purpose considers both intentional (as part of the design criteria) and unintentional (natural or human induced conditions) releases of radionuclides. Unintentional releases include consideration of unintentional human or animal intrusion conditions, which might lead to direct access and external exposure to radiation.

Once released into the environment, radionuclides might migrate through the environmental system along three principle pathways: atmospheric, groundwater and surface water. Due to the physical nature of L&ILW and HLW disposal concepts, migration along the atmospheric pathway is highly unlikely. The principle environmental pathway of concern is thus the groundwater pathway, with the surface water pathway of secondary concern as an extension of the groundwater pathway. Disposal systems are designed so that releases to groundwater or surface water are highly unlikely as further explained in Chapter 10 of this EIR.

Comment 4:

The highly toxic waste has been proposed to be stored on site and it takes 200 thousand years to decompose. The proposed site has a 60 year life span and to leave the responsibility of such waste to future generations who have no say this moment.

Response 4:

The practise of storing of high level radioactive waste on a Nuclear Plant site is an international global acceptable practise. The same practise is applied at the current operating Koeberg plant. The South African government, Department of Energy, is in the process of establishing the radioactive Waste Management Institute . One of the functions of this institute will be to identify a repository for high level waste in South Africa.

Kindly refer to response 3 above for further information regarding the radioactive waste management practices to be followed.

Comment 5:

This area is prone to tremors and earthquakes; there is no guarantee that we will not have an earthquake that is larger than 6 magnitudes.

Response 5:

The Seismic Risk Assessment (Appendix E4 of the Revised Draft EIR) found that based on the current state of knowledge there are no disqualifiers for this site.

All three alternative sites for this nuclear power station are the subject of intensive seismic monitoring. Of the three alternative sites, Thyspunt was found to present the lowest seismic risk. A nuclear power station designed for peak ground acceleration (PGA) of 0.3g can withstand an earthquake of approximately 7 on the Richter Scale approximately 8 km away from the location of the earthquake. In this respect, it must be remembered that the Richter Scale is a logarithmic scale, This implies that an earthquake measuring 7 on the Richter Scale has a magnitude 10 times higher than one measuring 6 on the Richter Scale.

Comment 6:

I have a constitutional right to clean green energy. Nuclear is not sustainable and hugely expensive and not green.

Response 6:

Your comment is noted. It is the South African government's prerogative to determine the mixture of energy resources that are to be used to cater for future electricity demands. Government embarked on an extensive consultative process, the Integrated Resource Plan (IRP) to determine the future mixture of energy sources for electricity generation. As determined in the Draft IRP released for public comment in October 2010, nuclear and renewable technologies are both important components of the future energy mix.

Yours faithfully
for GIBB (Pty) Ltd



Jaana-Maria Ball
Nuclear-1 EIA Manager