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DEA Ref.:12/12/20/944

NEAS Ref: DEA/EIA/918/2008

05 August 2015

Email: mgoedhart@mweb.co.za

Dear Marc Goedhart

RE: ESKOM EIA CONCERNS FOR THE PROPOSED NUCLEAR-1 NUCLEAR POWER STATION (NPS) AND ASSOCIATED INFRASTRUCTURE (DEA Ref. No: 12/12/20/944)

GIBB (Pty) Ltd acknowledges receipt of the submission received from the Marc Goedhart dated 17 November 2012. We thank you for your valuable comments and your participation in the Eskom Nuclear Power Station (NPS) Environmental Impact Assessment (EIA) process to date. Your questions and comments concerning the Nuclear-1 have been noted.

Comment 1:

As an I&AP, and team member of the Eskom SSHAC committee (Senior Seismic Hazard Assessment Committee), I would like to get the overview of the Thyspunt site as provided in the EIA.

Response 1:

An overview of the Thyspunt site with regards to its seismic characteristics is provided in Appendix E4 of the Revised Draft Environmental Impact Assessment (EIR). The baseline environment of all sites, including Thyspunt, is discussed at length in Chapter 9 of the EIR.

Comment 2:

I was responsible for the geological mapping of the Regional, Site Vicinity and Site Area, and initial Site Location work (1:5,000 scale). These are regulated investigative distances from the reactor site. I am also the person who mapped out and removed the 'Klippepunt fault' previously indicated by the AEC team (now NECSA), and helped co-ordinate and interpret the geophysics around the site, both onshore and offshore. These maps and reports are all at CGS and Eskom, and I am sure you have perused them.

Response 2:

Your comment has been noted. GIBB confirms that your maps and reports were used to assist in the compilation of the Seismic Risk Assessment.

Comment 3:

Following recent discussions with people and organizations who contributed to the EIA, and are probably referenced in it, I realized I never saw the final EIA

Response: 3
Your comment is noted. The final Environmental Impact Report (EIR) has not yet been published. The EIR is still in draft form at the time of writing this response.

Comment 4:

What is the purpose of the 3km boundary from the EIA corridor, and how is it defined? Or for that matter, the 800m line from the EIA corridor? Are these distances regulated, as per NUREG Site Area and Site Location regulations? Are they defined in the EIA?

Response 4:

As indicated in Chapter 3 of the Revised Draft EIR Version2, all nuclear power stations are required to have emergency plans in the event of a disaster. At this stage, the exact delineation of the Emergency Planning Zones (EPZs) is unknown and the sizes of the EPZ have been assumed, based on current international practice for Generation III reactors. The extent of the emergency planning zones will be set by the NNR licensing process.

EPZs assist in accomplishing the emergency response goals by careful controlling the activities in the region closest to a nuclear power station. In order to provide some clarity on the purpose of such zones, the existing Koeberg power station emergency zones are briefly discussed below as an example. Given that the technology of nuclear reactors has changed significantly since the commissioning of Koeberg, it is likely that the EPZ will be reduced in comparison to Koeberg Nuclear Power Station's EPZs. The emergency planning zones for Koeberg are characterised by 5 km and 16 km radii around the power station. The 5 km radius around Koeberg is referred to as the Protective Action Zone (PAZ) and the zone between 5 - 16 km radius is referred to as the Urgent Protective Zone (UPZ).

It is likely that the corresponding EPZs for the new nuclear power station will be reduced to 800 m and 3 km respectively. The reduced EPZs are based on European Utility Requirements (EUR) standards, which prescribe that modern nuclear power plants should have no or only minimal need for emergency interventions (e.g. evacuation) beyond 800 m from the reactor. The EUR standards also provide a set of criteria that a reactor must meet in order to demonstrate that it can be built to comply with such emergency planning requirements.

Comment 5:

There are various activities and proposals being submitted around the Eskom property. Are these addressed in the EIA it buffers? What regulations control the type of activities allowed just outside the Eskom area?

Response 5:

Development in the areas around a nuclear power station is controlled by regulations under the National Nuclear Regulator Act, 1999 and its associated regulations. The type of

development outside the Eskom area that will be allowed will be investigated in the Spatial Planning Report, which is in the process of being prepared. However, it is not anticipated that there will not be any restriction in terms of the type of development that will be allowed; provided that adequate provision is made for evacuation routes should an incident occur at the Nuclear Power Station.

Comment 6:

Please could you send the EIA .pdf, or point me to a website where I can access it.

Response 6

Please visit the link below for Revised Draft Environmental Impact Report (EIR) which was previously made available for public review and comment from 09 May 2011 to 07 August 2011:
http://projects.gibb.co.za/enus/projects/eskomnuclear1reviseddrafteir.aspx
You will be notified of the availability of the revised draft EIR version 2 in due course.

Comment 7:

Dr. Werner Illenberger informed me that Gibb had Southern Mapping Co. fly all 5 sites with Lidar in 2007, for Eskom. The people we were dealing with at Eskom did not know this (right-left hand). We discovered this in 2009, and obtained the data for the Thyspunt site in time for the restart and recent T2 marine terrace mapping & OSL / CN dating program by Geomatrix-CGS. I was closely involved in this too, as well as the T1 fault mapping and dating program. With all the recent developments in and around Oyster Bay – Thyspunt – St. Francis, has the site since been reflown (aerial photography, or even lidar)? Just checking .e.g. Mapping the recent flood damage with regards to the Sand River, and other areas, may assist geo-hazard investigations in the Site Vicinity area.

Response 7:

The site was re-flown in 2011. The Sand River, in which the majority of the flooding has occurred, has a catchment north of the Oyster Bay mobile dune field and drains to the east. As such, flooding in the Sand River does not affect the proposed footprint of the power station, which lies in stable vegetated dunes well to the south of the mobile dune field.

The Nuclear-1 EIA team's dune geomorphologist has prepared a second addendum to his Dune Geomorphology Assessment (Appendix E2 of the Environmental Impact Report). This contains a detailed analysis of the causes of flooding in the Sand River catchment and confirms that flooding in this catchment is not a threat to either the proposed power station or the proposed access roads to the power station.

Yours faithfully

Reuben Heydenrych

for GIBB (Pty) Ltd
Nuclear-1 EIA Manager