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Thyspunt not safe, new report shows

Researchers find geology makes site high-risk for nuclear plant

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IT is not safe to build the proposed nuclear project at Thyspunt, and far more baseline research is required before any decisions should be made.

These are the findings of a new research report, "Geo-Realities @ Thyspunt", released by the Africa Earth Observatory Network (Aeon) institute at Nelson Mandela Metropolitan University.

Based on scientific data, the research undertaken by NMMU postgraduates has shown that the geology and geomorphology in and around Thyspunt make it high-risk and irresponsible to build a nuclear power station at the site.

Aeon National Research Foundation scientist and a UK chartered geologist Professor Maarten de Wit said Eskom and its consultants had declared Thyspunt to be technically and environmentally safe for a nuclear plant after studying rock formations there for three decades.

They collected a vast amount of data to determine its geological, tectonic and environmental suitability to host a 4 000MW nuclear power station.

They drilled down 270 times to determine the presence of hard rock, because nuclear power stations needed to be built on the hard rock, under the dune fields below sea level, De Wit explained.

"What they did not pick up, but which one of my postgraduate researchers has since meticulously detailed, is the presence of four ancient palaeo-canyons and valleys, cut into the hard bedrock at about 20m below sea level at Thyspunt and the adjacent Tony's Bay, Cape St Francis and St Francis Bay," he said.

"She has unequivocally shown that these canyons and valleys are hidden beneath the dune sands and soft sedimentary sequences, and that they extend inland well below the present-day sea level."

The Thyspunt palaeo-valley, for example, cuts into an area of more than 1 000m² of bedrock to a depth of 16m below sea level.

"What this means is that if you build a nuclear plant below sea level here – which it would be – you only need one earthquake causing a tsunami or powerful storm waves or spring tides and, because of the presence of the canyons and valleys, Thyspunt is at great risk of flooding from below."

De Wit said the risk of earthquakes and tsunamis needed to be regarded as a significant natural hazard in the region.

Another postgraduate researcher at NMMU recently revealed a surprising history of devastating local seismicity along so-called dormant faults.

"The public has a right to be concerned. What do we really know about this site beyond Eskom's hearsay?" De Wit said.

But spokesman Nto Rikhotso said yesterday Eskom was confident its Probabilistic Seismic Hazard Assessment had accurately captured the seismic hazard level for the site.

"Apart from the conservative approach adopted, Eskom will also apply conservative decision-making in the design and operation of a future Thyspunt nuclear installation."

The Aeon report is available on **www. aeon.org.za/aeon-publication-series/**

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