

## **NATIONAL ASSEMBLY QUESTION 1164**

### **Dr G W Koornhof (ANC) to ask the Minister of Energy:**

With reference to nuclear leakages at nuclear reactors in Japan (details furnished) after it was hit by an earthquake and tsunami, how will any future natural or man-made disaster affect the implementation of the second Integrated Resource Plan (IRP2010) (a) regarding (i) the energy mix for the next two decades, including and (ii) the use of nuclear energy and (b)(i) all safety aspects related to future nuclear plants and (ii) the safety aspects regarding the Koeberg nuclear plant? **NW1287E**

### **REPLY**

- (a) (i) The underlying basis for the energy mix as proposed in the IRP2010 has not changed due to the unfortunate accident at the Fukushima Nuclear Power Plants. The energy mix is balanced considering different factors such as the need to reduce our carbon foot print and provision of reliable and affordable electricity services to run the economy.
- (ii) Nuclear energy provides the most reliable base-load power after coal. South Africa is yet to reach universal access to electricity services. In order to achieve this milestone and to provide the necessary power to support economic development, we will need to build more base-load power stations.
- (b) (i) All Safety Aspects Related to Future Nuclear Power Plant.
- The design of reactors is the cornerstone of nuclear safety, with consistent application of the defense-in depth principles, and the nuclear industry is one of the most regulated as far as safety is concerned. The International Atomic Energy Agency (IAEA) through its conventions such as Convention on Nuclear Safety, Joint Convention, and Convention on Early Notification and Assistance Convention ensure nuclear safety, safety of spent fuel management and radioactive waste management worldwide and make provision for assistance in the case of a nuclear accident. South Africa is a member of the IAEA and a contracting party to these conventions. Safety features of reactors have continued to evolve towards designs basis which have more inherent safety features. The National Nuclear Regulator (NNR) is entrusted with the protection of persons, property and the environment from effects of nuclear damage. The NNR, as the nuclear safety authority responsible for the siting, design, construction, operation, manufacture of component parts and decontamination, decommissioning and closure of nuclear installations will therefore license future nuclear power plants.

(ii) Safety Aspect Regarding Koeberg NPP

Koeberg, as originally designed and subsequently modified by Eskom, is in line with modern international safety standards.

Following the accident at Fukushima, Eskom performed the necessary tests to verify the capability of all equipment required to respond to severe and beyond design basis accidents.

- Koeberg is designed to withstand an **earthquake** of level 7 on Richter Scale
- The Koeberg terrace height is 8 metre above mean sea level,
- Koeberg is supplied from four 400 kV lines and one 132 kV line **connected to the national grid.**
- If there is a problem with this supply from the national grid, a dedicated power station is available
- Additional backup generators are on site
- Equipped with **external piping** connections to the spent fuel pools and containment buildings to facilitate the addition of cooling water should it be required.
- Plant hydrogen recombiner modified to prevent a hydrogen explosion
- Emergency plan is in place. It has been tested and found to be adequate