



# REVIEW OF EXISTING FRAMEWORKS (INTERNATIONAL ARRANGEMENTS



Wilbert Leotwane

# Talk outline

- Briefing on the initiatives we are undertaking in SA in response to the accident
- Review of review of existing frameworks of international arrangements
- Conclusions



# INTRODUCTION

- The South African Cabinet recently approved the country's 20 year plan for electricity generation. Renewable energy features prominently in the Integrated Resource Plan 2010.
- According to this plan, 23% totaling 9600MW will come from nuclear



## SA RESPONSE TO THE ACCIDENT

- The general opinion in SA is that the earthquake and tsunami hazards and the probability/likelihood of occurrence are relatively low considering our location relative to known faults as well as the tectonic plate structure and location.
- The Koeberg earthquake and tsunami hazard design basis have been established considering local conditions and historical event data.
- Despite of the relatively low earthquake hazard at the Koeberg site, it is accepted that events might occur which have not been considered in the design of the facility albeit very unlikely.
- The lessons learned from Fukushima will be implemented to enhance the principle of defense-in-depth



## REGULATOR'S RESPONSE TO FUKUSHIMA

- In response to the Fukushima accident, the National Nuclear Regulator (NNR) established a Task Team to identify the lessons from the accident. The NNR has also directed the nuclear operators in South Africa namely Eskom, for the Koeberg NPP, and the South African Nuclear Energy Corporation (Necsa) for the SAFARI Research reactor and other nuclear facilities to perform safety re-assessments on their nuclear installations respectively.
- The operators will submit their reports by November 2011. The NNR review will be initiated after the submission of the respective reports and the NNR will produce its review report by March 2012.
- In order to rebuild the public confidence in the safe use of nuclear energy for power generation, it is important that a transparent process be followed for communicating the outcome of these safety re-assessments to the public.
- The NNR will further review and update, as may be required, its current regulatory standards and requirements incorporating the lessons learnt from the Fukushima event in line with its principal nuclear and radiation safety requirements. The NNR will direct where necessary the operators to implement these requirements as well as appropriate measures and/or design features to improve the safety of the existing nuclear installations. The NNR has monitored and will continue to monitor international initiatives taken in response to the accident. The lessons learnt from the event will be considered in the NNR regulatory framework



## INDUSTRY RESPONSE TO FUKUSHIMA

- Shortly after the Fukushima accident, the operator Eskom proactively initiated an assessment of the Koeberg NPP with respect to the information that was being received on the accident. Later, Eskom also responded to the recommendations contained in the Significant Operating Experience Report (SOER) issued by WANO.
- The focus of the assessments by the operator are on design basis, beyond design basis and severe accidents arising from external events - predominantly addressing plant equipment, people, procedures and nuclear safety culture.
- The findings and mitigation plans from this assessment will be reviewed by the Nuclear Regulator to ensure adequacy and implementation.
- This is indicative of a sound safety culture and commitment of the nuclear industry in South Africa to strengthen nuclear safety in the country.



# REVIEW OF EXISTING FRAMEWORKS OF INTERNATIONAL ARRANGEMENTS

The following are elements of the currently existing frameworks of international arrangements:

- Legally binding international instruments – conventions
- IAEA safety standards and their application
- Exchange of operating and regulatory experience
- Multinational and Bilateral Agreements for Cooperation
- Self assessments and international peer reviews



# International instruments - conventions

There are numerous international instruments, aimed at:

- preventing accidents with nuclear safety consequences, such as
  - The Convention on Nuclear Safety
  - The Joint Convention on the Safe Management of Radioactive Waste and the Safe Management of Spent Fuel
- responding to and mitigating the consequences when accidents do happen, such as
  - The Convention on early notification
  - The Convention on assistance
- Long-term responses, such as
  - Vienna Convention on Liability for nuclear damage
- The peer review mechanism of the CNS involves contracting Member States submitting, every 3 years, a formal report on their compliance with the CNS articles for review by their peers. One can question whether this is adequate?



## Establishment and application of the IAEA safety standards

- The IAEA safety standards play a very important role in achieving high levels of nuclear safety. Consistent and effective implementation of the standards by operators is essential. There is thus a need for:
- The IAEA to continue its statutory function of establishing safety standards, and review existing safety standards for appropriateness
- Member States to be encouraged to implement and apply the IAEA safety standards
- It is incumbent on the Members States Regulatory Authorities to ensure that the applicable IAEA safety standards are incorporated in national legal and regulatory frameworks and are and applied



# International safety reviews and services

International peer reviews are important for continuous improvement and are useful in enhancing the effectiveness of safety infrastructures at national level.

## Self assessment

- The regulatory bodies in South Africa (NNR and DoH) conducted Self Assessment of its regulatory infrastructure using the International Atomic Energy Agency's (IAEA) Methodology and the associated Self Assessment Tool (SAT).
- The NNR Self Assessment project was initiated to identify the gaps between the NNR legislative and regulatory frameworks and the IAEA safety standards and provided some recommendation to address them.
- The implementation of these recommendations will assist in the optimization of the regulatory framework and the repositioning of the NNR to become more effective and efficient in the execution of its regulatory mandate.

## OSART

- Later this year the Koeberg Nuclear Power Station will undertake an Operational Safety Assessment Review Team (OSART) mission.
- What is the value add from self assessment and peer reviews if there is no practical implementation of corrective actions? We can do more to promote openness and transparency in terms of sharing the outcomes from these reviews. We need the operator and the regulator to rethink the approach where the findings from the WANO and the findings from the regulatory review missions by the IAEA.



## Nuclear Safety Networks

- Nuclear safety transcends the boundaries of individual states. This raises issues which will be solved only if the international community works together. Regional networks can significantly contribute towards the achievement of high level of safety.
- It is one thing to establish the networks that are important elements of the regime, but to get them to function and deliver on their objectives will require our collective efforts.
- Africa region has made progress in the area of regional co-operation between the regulators. To this end, South Africa actively participate in the activities of the Forum of Nuclear Regulatory Bodies in Africa (FNRBA) that has been established to promote exchange of information and sharing experiences
- FNRBA has a strategic initiative to have IRRS missions carried out to 10 countries in the period of 5 years



# Conclusions

## Convention of nuclear safety

- Need to implementation of the mechanisms to follow up on the outcomes of the self assessment and the review process under the CNS

## Universal application of the IAEA safety standards

- Need to ensure that the applicable legislation and regulations are enacted to ensure that the IAEA safety standards are implemented and applied

## Self Assessment and peer reviews

- Need to derive value from self assessment and peer reviews by ensuring implementation of corrective actions

## Nuclear Safety Networks

Need to provide necessary support for effective functioning of the established networks and enhance international cooperation



## For more information, contact NNR at:

### Physical Address

Eco Glades Office Park, Eco Glades 2  
Block G, Witch Hazel Avenue  
Highveld Ext 75  
Eco Park  
Centurion  
0157

### Postal Address

PO Box 7106  
Centurion  
0046

Website: [www.nnr.co.za](http://www.nnr.co.za)

Tel: (012) 674 7100

Fax: (012) 663 5513

Email: [enquiry@nnr.co.za](mailto:enquiry@nnr.co.za) / [nnr@nnr.co.za](mailto:nnr@nnr.co.za)



**THANK YOU**

