Nuclear Regulatory Licensing Process
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A Case for Regulatory Framework

- To ensure high levels of safety and institutionalisation of a safety culture in nuclear energy, a viable and independent regulatory infrastructure is required.
A Case for Regulatory Framework

Other factors

• Anticipated nuclear expansion with possible introduction of new nuclear technologies
• Public Perceptions and anxieties
• Fukushima Daichi Incident
• International commitments by South Africa
The Regulator: Purpose

- Independent, efficient and effective oversight of the nuclear industry providing assurance that nuclear facilities are operated without undue radiological risk to the people, property and the environment.
NNR Mandate

• Section 5 & 7 of the National Nuclear Regulator Act 47 of 1999 confers the mandate on the NNR to provide for the protection of persons, property and the environment against nuclear damage

• Mandate is executed through the establishment of safety standards and regulatory practices
NNR Mandate

• NNR issues or grants nuclear authorizations and manages enforcement processes to ensure compliance with the set standards

• Approach of the NNR is not prescriptive but operators are required to satisfy the NNR of the safety case within the parameters of set standards
Licensing

• Licensing requirements contained in Regulations issued in terms of S36 and 47 of the Act (Safety Standards and Regulatory Practices - SSRP)

• SSRP addresses such issues as risk criteria addressing mortality risk to the public, radiation dose limits to the public and workforce ……
Licensing

- ....fundamental safety principles including defence in-depth and ALARA; general safety principles to comply with international norms and principles and requirements for emergency planning
- Analysis of a safety case must demonstrate that the proposed design will comply with the NNR licensing requirements
Licensing

• Section 5(b) and 20(1) – oversight over design of nuclear installations and manufacture of components or parts important to nuclear safety through the granting of nuclear installation licences.

• Siting, design, manufacturing, construction, operation to decommissioning fall under NNR regulatory control
Licensing

• Phased approach is adopted requiring a detailed safety case per each phase.
• Nuclear Installation Licence may be issued per stage where a safety case has been demonstrated and can be varied with each phase of development.
• Application typically covers siting, design, construction, manufacturing, operation and decommissioning.
Licensing

• Introducing Regulations relating to the siting of new nuclear installations

• Enable assessment that relevant siting factors including external hazards have been appropriately characterized for both design assessment and for risk analysis leading to a conclusion that the site is appropriate for choice of technologies
Licensing

• Construction licence required for a plant specific safety analysis
• NNR Regulatory documents articulating requirements and processes to be followed in lodging an application
• NNR reviews and determines whether to grant a licence (NIL) or not
Time Line

• Factors affecting timeline would relate to quality of the submission (application), availability of competent and adequate capacity within the NNR; regulatory support from Technical Support Organizations where needed etc.
Time Line

• 40 Months – Construction Licence
Time Line

- Early preparation including familiarization of staff with choice of technology (12 months)
- Safety review
- Public Engagement (24 months)
- NNR CEO decision
- NNR Board Decision (4 months)
NNR Preparedness

• Conducted Self Assessment of Regulatory Infrastructure using the IAEA Self-Assessment Tool (SAT) to identify gaps between NNR legislative and regulatory frameworks and the IAEA Safety Standards

• Implementation Plan developed to address gaps
NNR Preparedness

• NNR input to the Integrated Nuclear Infrastructure Review (INIR) initiated to evaluate South Africa’s readiness to implement the nuclear build programme as stipulated in the IRP 2010
NNR Preparedness

• NNR currently undergoing restructuring process to position itself for the expansion
• Resource constraints/requirements will continue to pose challenges
• NNR commitment to facilitate licensing unquestionable and early involvement is proposed
NNR Licensing

Thank You