Selected Topical Issues Requiring Focused Attention

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Contents

• Novel Design Safety Principles
• Concept of Safety Goals
• Multi-nuclear-facilities Site
• Integrated Risk Informed Decision Making (IRIDM)
• Graded Approach for Various Applications
• Long Term Operation
### Novel Design Safety Principles

#### Earlier Concept

<table>
<thead>
<tr>
<th>Operational States</th>
<th>Accident Conditions</th>
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<tbody>
<tr>
<td>NO</td>
<td>DBAs (safety systems)</td>
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#### SSR-2/1, 2012

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#### Design Basis

- **NO**: Normal Operating Condition
- **AOO**: Accident Operating Condition

#### Accident Conditions

- **DBAs (safety systems)**
- **BDBA**
- **Severe Accidents (core melting)**

#### Plant Design Envelope

- **Conditions practically eliminated**

#### Beyond Design Basis (Accident Management)

- **Beyond Plant Design Envelope**

- **DECs**: Safety features for accident with core melting
- **Safety features for sequences without significant fuel degradation**
Design Basis for SSCs

<table>
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<th>Plant design envelope</th>
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<td>Design Extension Conditions</td>
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<tr>
<td>Without significant fuel degradation</td>
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<tr>
<td>With core melting (severe accidents)</td>
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<tr>
<td>Loads and conditions generated by External &amp; Internal Hazards (for each plant state)</td>
</tr>
<tr>
<td>Criteria for functionality, capability, margins, layout and reliability (for each plant state)</td>
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<tr>
<td>Design basis of equipment for Operational states</td>
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</table>
Concept of Safety Goals

- Hierarchical approach developed
- Objective: to assist
  - greater understanding
  - establishing
  - harmonization
  - use and communication
- Presentation to NUSSC
- Review / finalisation
Multi-nuclear-facilities Site

Issues

• Risk metrics / Safety Goals / Risk Aggregation
• Multi-facilities interactions and coupled multiple hazards

Perspective

• Analysis and assessment should be consistent with current best practice
• Different IAEA draft documents available
• Plan to organize a TM regarding current practice
• Proposal of a comprehensive safety report describing the different aspects in integrated manner
• Framework for IRIDM, INSAG-25, in 2011
• Thereafter: development of a TECDOC
• Illustration of MS current practices
• Review / finalization of the TECDOC
Graded Approach

- Guidance on use in application of safety requirements of nuclear installations: necessary
- Generic process: needs to be developed for use in licensing, design, and operational safety requirements
- Various activities initiated
Long Term Operation

Challenge
• 278 NPPs in operation for more than 30 years
• Many Member States: no regulations for safe LTO

Perspective
• Revision of Safety Guide: Ageing Management and Development of Programme for LTO is in progress
• 11.2016 for NUSSC approval
• Essential guidance for MS
• SALTO service is mature and effective, demand is rising
Thank you!