Nuclear Safety Standards Committee

43rd Meeting, 20 – 22 June, 2017

Agenda item

DPP DS503

Protection against Internal and External Hazards in the Operation of Nuclear Power Plants (revision of NS-G-2.1)

Jun Sugahara
Operational Safety Section
NSNI
Justification

• The current document (NS-G-2.1) was published in 2000 and is therefore due for review. Its scope is limited to fire safety.

• The current revision (DS 503) was initiated to
  
  – comply with the long term structure of safety standards approved in 2008
  
  – Address a wider range of external hazards and their combination in operational safety terms, owing to their potential to challenge the fundamental safety functions of an operating NPP.

  – Take account of the principles of the Vienna Declaration
  
  – Take account of SSR-2/2 revised in 2016
  
  – Take account of the revisions to other safety guides now underway
Overview of the Document (1)

• The scope of the document will be extended from solely ‘Fire’ to include a wide range of external and internal hazards.

• It will propose common approaches where practicable and specific approaches where necessary

• The new information in DS503 includes:
  – External hazards such as Earthquake, Volcanism, External floods, Extreme winds and other meteorological hazards, hazards affecting water intakes and ultimate heat sink (UHS) components, Electromagnetic interference, External fire and explosion, Accidental aircraft crash, Release of hazardous substances.
  – Internal hazards such as fires and explosions, missiles, Pipe breaks, Internal floods, Release of hazardous substances, Electromagnetic interference

• Other Changes will address…
  – Vienna Declaration, SSR-2/2, DS497 (8 NPP operational safety guides)
• The revised document is anticipated to include:
  – Operational measures for prevention of consequence of the hazard or minimization of their magnitude
  – Operational measures for detection and mitigation of consequence of the hazard
  – Operational measures for prevention or limitation of the propagation of the adverse effects of consequence of the hazard to other areas in the plant, including secondary effects

• The primary target is NPP operating organizations, technical support organizations, regulatory authorities and other governmental organizations.
Implications arising from the Fukushima Daiichi NPP Accident

• The Director General’s report on the Fukushima-Daiichi accident (FDA) mentions the need for corrective actions or corresponding prevention or mitigation measures to be implemented.

• This Safety Guide will bring together in one document a wide range of internal and external hazards and how member states might prevent or detect and mitigate the consequences of these hazards.

• It will therefore provide a useful resource to member states seeking to improve their defences against events such as the FDA or self-assess the actions they have already taken.
Status of the Document

• The DPP was approved by the Coordination Committee in December 2016
• It was posted for Member State comments in April 2017
• Comment Resolution table was posted on 31 May 2017
• Comments were received from France, Germany and the UK

There are no rejected comments
<table>
<thead>
<tr>
<th>Country</th>
<th>Accepted</th>
<th>Accepted but modified</th>
<th>Rejected</th>
<th>Notes regarding comment modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>France</td>
<td>6</td>
<td>3</td>
<td>0</td>
<td>All modifications were minor wording changes to the proposed amendments</td>
</tr>
<tr>
<td>Germany</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>-</td>
</tr>
<tr>
<td>UK</td>
<td>6</td>
<td>1</td>
<td>0</td>
<td>Further explanation added to explain why the original text was used, plus an acknowledgment that the revised document will avoid duplicating other documents</td>
</tr>
</tbody>
</table>
Requested Action

The committee is requested to approve submission of DS503 to the CSS
Thank you!