Agenda Item W4.1
DPP for the Draft Safety Guide DS507: Seismic Hazards in Site Evaluation for Nuclear Installations (Revision of SSG-9)
– For approval for submission to the CSS –

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Seismic Hazards in Site Evaluation for Nuclear Installations

- The document (SSG-9) was first published in 2010

- The current revision (DS 507) was initiated to
  - Ensure consistency with applicable requirements for site evaluation (NS-R-3 Rev.1/DS484)
  - Ensure coherency and consistency with the other relevant IAEA Safety Standards (e.g. SF-1, SSR-2/1, GSR Part 2 and 4),
  - Incorporate the lessons learned and address challenges highlighted IAEA Report on Fukushima-Daiichi NPP Accident.
Overview of the Document

- The scope and table of contents will follow SSG-9
- Keep-up with pace of the scientific and technological progress (Fault rupture modelling, Palaeoseismology, PSHA, Damage indicator, etc.)
- Reducing uncertainty and reflecting lessons learned from past events (e.g. Fukushima Daiichi accident)
- New information in DS507 includes
  - Newly developed methods of data collection
  - Addressing issues related to multi-unit sites (consistent with DS484)
  - guidance on hazard/design interface with site response.
- Other Changes
  - More detail of capable faults and fault displacement hazard analysis for new and existing nuclear installations
  - Combination of seismic hazards (surface faulting and ground motion) and relevant geological, hydrological and geotechnical hazards.
Implications to Fukushima Daiichi NPP Accident

- highlighted issues of uncertainties in the assessment of seismic hazards
- natural hazard assessment has to be sufficiently conservative
- historical data in the establishment of the design basis of nuclear power plants is not sufficient to characterize the risks of extreme natural hazards
- re-evaluated on a periodic basis to consider advances in knowledge, and necessary corrective actions or compensatory measures
Thirteen (13) comments from Germany, France, Belgium, Czech Republic and Japan.

All comments have been addressed and resolutions published on NUSSC/WASS web page:
- 10 accepted or accepted with modifications
- Rejected 3 (reference to out of scope elements: e.g. Deep underground radioactive waste disposal)
**NUSSC Member Comments: Example of Resolutions**

<table>
<thead>
<tr>
<th>No.</th>
<th>Para/Line No.</th>
<th>Proposed new text</th>
<th>Reason</th>
<th>Accepted</th>
<th>Rejected</th>
<th>Reason for modification/rejection</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Page 2/ Objective</td>
<td>Providing guidance and methods of seismic hazard assessment for areas with low seismicity. Providing guidance and developing seismic hazard assessment methods for deep underground radioactive waste disposal.</td>
<td>The assessment of seismic hazards in the SSG-9/DS507 is mainly focused on areas with high seismic activity and measurable and localized earthquakes. The procedures and methods for these territories should not be fully accepted for the assessment of seismic hazard of territories with low seismic activity. Due to the planning of deep repositories of radioactive waste in many countries, it would be appropriate to include a specific chapter on the assessment of seismic hazard in depth corresponding to the site of the underground radioactive waste repository. Seismic hazard assessment methods used for surface installations cannot be fully taken into account in the assessment of seismic hazards at the depth of the rock massif. It is necessary to focus the work of experts on the creation of a special methodology for this evaluation.</td>
<td>X</td>
<td></td>
<td>The guide is not focusing only high seismicity area, but also low seismicity area. The deep repository is not in the scope of nuclear installations.</td>
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Requested Action

Approval by NUSSC to send the DPP to CSS for approval.
Thank you!