Agenda Item W 4.4
DPP for Draft Safety Guide, DS524:
Radiation Protection Aspects of Design for Nuclear Power Plants (Revision of NS-G-1.13)
– For approval for submission to CSS –

TOTH Csilla
Safety Assessment Section / NSNI
Radiation Protection Aspects of Design for Nuclear Power Plants

• Safety Guide on Radiation Protection Aspects of design for Nuclear Power Plants (NS-G-1.13): published in 2005

• Current revision (DS 524) initiated to
  – comply with long term structure of safety standards approved in 2008
  – ensure coherency and consistency with relevant IAEA Safety Standards, e. g.
    • SSR-2/1 (Rev. 1) “Safety of Nuclear Power Plants: Design” (2016);
    • GSR Part 4 (Rev. 1) “Safety Assessment for Facilities and Activities” (2016),
  – incorporate: experience on application of NS-G-1.13; operating experience feedback from the Member States and the feedback from the accident at the Fukushima-Daiichi NPP
Objective

The revised Safety Guide will provide recommendations

• primarily on radiation protection aspects in the design of new nuclear power plants, and

• particularly on meeting Requirements 5, 81 and 82 of SSR-2/1 (Rev.1).

The revised Safety Guide is intended

– for use by designers, operating organizations, regulatory bodies and technical support organizations

– for planning, managing and carrying out the design of new nuclear power plants and modification to operating nuclear plants.
Scope

• Scope of NS-G-1.13 remains essentially unchanged
• Revised Safety Guide will describe measures to be taken in design of nuclear power plants for
  – radiation protection of workers and the public, and
  – protection of the environment,
for all operational states and accident conditions, including for the decommissioning stage.
Interfaces with Existing and/or Planned Publications

The revision will consider all IAEA Safety Standards listed in the DPP especially

Proposed Structure

• **INTRODUCTION**
  – Background, Objective, Scope, Structure

• **Safety OBJECTIVES, DOSE LIMITATION AND OPTIMIZATION OF PROTECTION AND SAFETY**
  – Safety Objectives
  – Application of Dose Limits into design
  – **Dose Constraint**
  – Optimization of protection and safety

• **GENERAL ASPECTS OF RADIATION PROTECTION IN DESIGN**
  – Description of Sources of Radiation
  – Use of Operating Experience
  – Design considerations for operation and decommissioning
  – Design considerations for accident conditions
  – Design considerations for decommissioning

• **SPECIFIC DESIGN FEATURES OF RADIATION PROTECTION IN DESIGN FOR OPERATIONAL STATES**
  – Plant layout
  – Other design considerations for an effective operational radiation protection programme

• **SPECIFIC DESIGN FEATURES OF RADIATION PROTECTION IN DESIGN FOR ACCIDENT CONDITIONS**
  – Plant layout
  – Other design considerations for an effective radiation protection programme

• **SPECIFIC DESIGN FEATURES OF RADIATION PROTECTION IN DESIGN FOR DECOMMISSIONING**
  – Plant layout
  – Other design considerations for an effective radiation protection programme

• **DESIGN FOR RADIATION MONITORING FOR OPERATIONAL STATES AND ACCIDENT CONDITIONS AND FOR DECOMMISSIONING**
  – Alarms, warning devices and interlocks
  – Process Monitoring
  – Area Monitoring
  – **Effluent Monitoring**

• **ANNEX I – EVALUATION AND MINIMISATION OF SOURCE TERM**

• **ANNEX II – EXAMPLES OF ZONING FOR DESIGN PURPOSES**
## Planned Schedule

<table>
<thead>
<tr>
<th>STEP</th>
<th>Description</th>
<th>Timeframe</th>
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<tbody>
<tr>
<td>1</td>
<td>Preparing a DPP</td>
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<td>2</td>
<td>Approval of DPP by the Coordination Committee</td>
<td>Approved</td>
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<td>3</td>
<td>Approval of DPP by the relevant review Committees</td>
<td>2Q 2019</td>
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<td>4</td>
<td>Approval of DPP by the CSS</td>
<td>4Q 2019</td>
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<tr>
<td>5</td>
<td>Preparing the draft</td>
<td>2019-2020</td>
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<td>6</td>
<td>Approval of draft by the Coordination Committee</td>
<td>3Q 2020</td>
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<td>7</td>
<td>Approval by the relevant review Committees for submission to Member States</td>
<td>4Q 2020</td>
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<tr>
<td>8</td>
<td>Soliciting comments by Member States</td>
<td>1Q 2021</td>
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<td>9</td>
<td>Addressing comments by Member States</td>
<td>2Q 2021</td>
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<tr>
<td>10</td>
<td>Approval of the revised draft by the Coordination Committee</td>
<td>3Q 2021</td>
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<td>Review in NSOC-SSDS (Technical Editorial review)</td>
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<td>4Q 2021</td>
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<td>Submission to the CSS</td>
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<td>Submission in parallel and approval by the Publications Committee</td>
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<td>MTCD Editing</td>
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<td>13</td>
<td>Establishment by the Publications Committee and/or Board of Governors (for SF</td>
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<td>and SR only)</td>
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<td>14</td>
<td>Target publication date</td>
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Comments and Resolutions

30 comments from 10 Member States and one observer organisation

- Canada, Germany (WASSC), Iran (EPReSC), Japan (NUSSC, EPReSC, RASSC), Pakistan (WASSC), South Africa, Sweden (RASSC), Ukraine, UK, USA and ENNIS (EPReSC)

- Comments were mainly for clarification and for giving additional references.

- All comments were addressed and resolved.

- There are no unresolved comments
Action Requested

Approval by WASSC

for submission to CSS
Thank you!