Draft Safety Guide on Protection against Internal Hazards in the Design of Nuclear Power Plants (DS494) Step 11
Background

- NS-G-1.7, “Protection against Internal Fires and Explosions in the Design of Nuclear Power Plants” and
- NS-G-1.11, “Protection against Internal Hazards other than Fires and Explosions in the Design of Nuclear Power Plants”
  - Published in 2004 to provide recommendations to fulfil requirements of NS-R-1, “Safety Requirements on the Safety of Nuclear Power Plants” (published 2001)

- NS-R-1 superseded by SSR-2/1 (Rev. 1)
- In particular, requirements for protection against internal and external hazards reinforced
- Design Extension Conditions (DECs) in nuclear power plant design envelope included
  - Safety features for DEC to be protected against impact of internal and external hazards
Objectives (1/2)

• Revision after publication of SSR-2/1 (Rev.1)

• Planned transition to long-term structure of Safety Standards: agreement to merge the four existing Safety Guides on internal and external hazards

• Meanwhile: found impracticable to merge Safety Guides related to internal hazards with those relevant for external hazards

• Separate revision of Safety Guides for external hazards underway
Objectives (2/2)

• Addresses all internal hazards contained in previous Safety Guides

• Coalesces recommendations for protection against internal hazards under common approach consistent with new requirements

• Reflects changes in safety requirements for NPP design and advances in knowledge, technology and regulation in Member States
Overview of the Document (1/2)

- Revision and combination of previous Safety Standards
- General considerations relevant to internal hazards (Section 2)
- General recommendations applicable to internal hazards (Section 3)
- Specific recommendations relevant for the protection against the following internal hazards (Section 4)
  - Internal fires
  - Internal explosions
  - Internal Missiles
Overview of the Document (2/2)

- Pipe breaks (pipe whip, jet effect and flooding)
- Internal floods
- Collapse of structures/ falling objects focusing on heavy load drops
- Internal sources of electromagnetic interference
- Release of hazardous substances within the site boundary

- Appendix I: Hazard combinations
- Appendix II: Detailed guidance on internal fires
Status of the Document

• DPP approved by CSS in April 2016

• Approved by NUSSC and EPReSC and cleared by NSGC for submission to Member States’ comments in November 2017

• Submitted to MSs for comments in January 2018

• Resolution of Member States, ENISS and WNA comments with revised and edited DS494 uploaded for NUSSC, EPReSC and NSGC review on 18 April 2019
Summary of comments (1/2)

Member States’ comments

• 554 (five hundred fifty four) comments received from 15 Member States (Armenia, Belgium, China, Finland, France, Germany, Indonesia, Iran, Japan, Mexico, Poland, Russian Federation, Spain, UK and USA), and from ENISS and WNA

Committees’ comments – 2nd review

• 70 (seventy) comments received from 5 NUSSC Members (Germany, Japan, Republic of Korea, UK and USA)

• One comment from EPReSC and one comment from NSGC
Summary of comments (2/2)

For all the comments

- Comments mainly for clarification, consistent use of terminology, completeness, and improved coherency with other IAEA Safety Standards
- All comments addressed and resolutions provided
- There are no unresolved comments
Requested Action

Approval for submission to the CSS
Thank you!