

**DPP of DS 482 Design of Reactor Containment Systems for NPP**

COMMENTS BY REVIEWER Reviewer: Canada, France, Japan, USA, ENISS, WNA				RESOLUTION			
Comment No.	Para/Line No.	Proposed new text	Reason	A	Accepted, but modified as follows	R	Reason for modification/rejection
CAN 1 CAN 5	Section 4, para 4 list item 1.	"Recommendations to establish the <b>design requirements for design basis</b> of the containment systems with account taken of the relevant design basis accidents and <b>designed</b> extension conditions"	The term "design basis" should not be applied to design extension conditions, which are by definition beyond the design basis. Suggest replacing "design basis" with "design requirements".			x	SSR-2/1 item 5.28 <i>"Design extension conditions shall be used to define the design basis for safety features..."</i>
CAN 3.	Section 4, para 4, last list item.	"Recommendations to <b>design connections for mobile equipment as well as</b> use of mobile equipment <b>to support the containment function</b> ".	Mobile equipment is not part of the containment systems; and overall the use of mobile is a very large subject to be addressed in a Containment Guide. Proposed change better defines the intent		X <b>Recommendations for facilitating the use of non-permanent equipment</b>		May not be restricted to connections.

CAN 4. ENISS 2 for item b)	Section 4, para 4, last list item.	It is proposed to add to the list two items a)“Recommendations for assuring the confinement capability for spent fuel pools” b)“Recommendations for consideration in containment design of various external hazards”	These additions are stemming from the Fukushima lessons:			x	a) NS-G-1.4 Design of Fuel Handling and Storage Systems for NPP b) Included in section 3.
CAN 6	Section 6	It is suggested to add a section to the provisional table of contents (or rename the existing section 3) “IMPLEMENTATION OF DEFENCE IN DEPTH PRINCIPLE”	Increase visibility of the fundamental safety principle of DiD and consistent with one of the identified recommendations		x		Might be the 1 <sup>st</sup> issue in Section 3.
ENISS 3	Section 4 / 4 <sup>th</sup> para	Among modifications <del>to be implemented</del> that may be reasonably practicable, particular attention will be paid to provide:	Consistency with IAEA SSG 25 § 2.4, § 3.2			x	Misunderstanding; here modifications means changes in the safety guide and not design modifications.
ENISS 4	Section 4 / 4 <sup>th</sup> para (1 <sup>st</sup> set of bullet points), 4 <sup>th</sup> bullet	Recommendations to identify additional specific items to practically eliminate <u>large and early significant</u> radiological releases	To be consistent with other IAEA publications			x	According to SSR2/1 amendments: “significant” includes “early and large”.
ENISS 5	Section 4 / 4 <sup>th</sup> para (1 <sup>st</sup> set of bullet points)	<ul style="list-style-type: none"> <li><u>Recommendations on determining the reasonable practicability of potential modifications to address any perceived shortfall of requirements</u></li> </ul>	Consistency with IAEA SSG 25 § 2.4, § 3.2				Not well understood. Should be in NS-G-1.10 section 6.

ENISS 7	Section 4 / 5 <sup>th</sup> para (2 <sup>nd</sup> set of bullet points)	<ul style="list-style-type: none"> <li><del>Annex I will show examples of containment systems compliant with requirements given in SSR-2/1 document</del></li> </ul>	Annex I should be removed. How would the selection be made between all the possible designs that comply with the requirements given in IAEA SSR-2/1? If the IAEA reckons there is interest in such examples, this should be moved into a TECDOC rather than a safety standard, even if in an Annex.		To be discussed with other NUSSC members.
ENISS 8	Section 6	<p><i>The contents list is rather short and not really very helpful.</i></p> <p><i>Modify and make titles of sections 3 and 4 more explicit.</i></p>	It is not clear in the proposed structure where design extension conditions and severe accidents will be addressed: will it be in section 3 (general design basis of containment systems) or section 4 (design of containment systems) ?		x Sections 3 and 4 are for new plants and the recommendation will be to keep the structure as it is. However, the design bases of structures and equipment should be established with account taken of both DBA and DEC conditions.
ENISS 9	Annex 1 <i>Proposal following NUSSC WG meeting held from 5 to 8 March 2013</i>	<p>6.20 to be modified:</p> <ol style="list-style-type: none"> <li>For new plants the containment venting should not be the primarily mean to prevent containment over pressurization,</li> <li>When necessary, the opening of the containment venting line should not lead to significant radioactive releases, (aerosols,</li> </ol>	<p>For an existing plant settled on this design assessment it would be a severe constraint.</p> <p>Filtration of noble gases technology is currently</p>		x If a requirement for new plant cannot be met by existing plants, it is also addressed in NS-G-1.10 Section 6.

		and gaseous iodine) For DBAs, containment venting should not be necessary to meet the acceptance criteria for the structural integrity.	not available.			
FRA 4	Para 4	<ul style="list-style-type: none"> <li>Aspects that are covered in other safety guides, in particular related to safety classification and guidelines for severe accident management should be reduced to a minimum and linked to the appropriate safety guides (DS483...),</li> </ul>	Clarification			x Clear enough.
FRA/MDDE		This document does not present any reference to nuclear security document. Reference to NSS13 and NSS4 should be added. These document will have to be referred to when alerting on need to take into account safety/security interfaces.		x		Will be added in the update.
JPN 6		What does “Plant designed with earlier standards” mean? Should be replaced by “Design considerations for severe accidents” as NS-G-1.10 is.	Clarification			x Plants in operation.
USA 3	Annex 1, Page 6	In the Main Conclusion section of Annex 1 it is suggested that NS-G-1.10 should include “...recommendations for the <u>backfitting of the containment systems of the existing plants where it is feasible.</u> ”	The reviewer suggests that backfitting criteria be developed to determine what is and is not feasible.		x	Safety guides are not appropriate to define criteria. However the safety guide will provide guidance and examples of good and feasible backfitting decided or already implemented by some MS.

USA 4	Annex 1, SSR-2/1 Para. 5.31	The design shall be such that conditions that could lead to significant radioactive releases are <b>practically eliminated</b> (see footnote 1).	The reviewer suggests that the term " <b>practically eliminated</b> " be defined; such as probability of $10^{-6}$	x	Justification relying on a probability number is not sufficient. The safety guide will propose examples of practices considered as appropriate to meet this requirement.
USA 5	Annex 1, SSR-2/1, Para. 5.21	<p>The design of items important to safety shall provide for <b>adequate provisions or margins</b> to avoid cliff edge effects in the event of a external hazard of a severity or duration <b>moderately exceeding</b> that considered in their definition.</p> <p>For systems and structures necessary to prevent significant radiological releases, this requirement shall be fulfilled with <b>significant margins</b> to accommodate with external hazards of a severity or duration exceeding that considered in their definition.</p>	<p>It is unclear how NS-G-1.10 will provide practical, detailed guidance to users for the following undefined terms, appearing in Annex 1:</p> <ul style="list-style-type: none"> <li>-sufficient design margins</li> <li>-moderately severe</li> <li>-practically eliminated</li> <li>-adequate provisions or margins</li> <li>-moderately exceeding</li> </ul>	x	To the extent possible for IAEA Safety Standards.
USA 6	Annex 1, Proposed text for NS-G-1.10 Para. 3.7	For <u>new plants</u> the crash of a <b>commercial airplane</b> and potential concurrent hazards should be added.	The reviewer observes that the <b>commercial airplane</b> will require metrics.	x	Metrics should be defined within the site hazard characterization.