

DS532 “Safety of Nuclear Power Plants: Commissioning and Operation, SSR-2/2 (Rev. 2)”– DPP

COMMENTS BY REVIEWER				RESOLUTION			
Reviewer: Country/Organization: UK/ONR 2021		Page. 1. of..2.. Date: September					
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
1	Section 3	Propose an extra bullet “SSR-2/2 (Rev 1) currently only has a single Requirement for a Commissioning Programme. (Further details are set out in the Annex).”	Commissioning features prominently in the title of this standard but it currently only has a relative short section on the topic and a single requirement (25) for an important, multi-faceted topic.	Yes review of requirement 25 included in DPP			
2	Section 3 & Annex	No change to third bullet of Section 3, assuming DS514 is added to the Annex	DS514 on equipment qualification has cleared all safety committees and is waiting editing. It is not explicitly mentioned in the Annex against Requirement 13 or “Whole Documents” for consistency checks.	Yes, DS514 included in review of requirement 13			
3	Annex	Add Requirement 25, with potential changes: <ul style="list-style-type: none"> Expand the number of requirements Check consistency with NP-T-2.10 Emphasise the important of effective management of the commissioning programme 	Requirement 25 is not identified as an area for potential change. Is it credible that there has not been learning from recent commissioning experience to take on board? In 2018, the IAEA Nuclear Energy Series document NP-T-2.10 was published. Even if this is not a direct reference for a safety standard, it may have relevant advice.	Yes, see above			

			<p>Expanding the number of requirements could help to bring focus.</p> <p>Based on the UK's experience of constructing and commissioning new NPPs, it is not enough to simply have a commissioning plan, but given the scale, complexity, number of people involved and the need for changes, effective management of the commissioning programme is required.</p>				
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Japan NUSC comments on DPP-DS532, "Safety of Nuclear Power Plants: Commissioning and Operation, SSR-2/2 (Rev. 2)"

COMMENTS BY REVIEWER				RESOLUTION			
Reviewer: Japan NUSC member		Page of 1					
Country/Organization: Japan / NRA		Date: 30 Sep. 2021					
No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
4	3.1 st bullet	There is less information to develop the revision of SSR-2/2 (Rev. 1). The Annex includes a list of potential changes to SSR-2/2 (Rev. 1), in which just only the relationship between the requirements and corresponding guides are shown, but no clear substances to justify for the revisions are included. In particular, technical operating issues, which is main subject of this revision, are not found in Sections 5 and 7 in the Annex. Some specific examples should be shown as justification presented in the DPP-DS497 for revision of eight operation-related Safety Guides, in which several aspects to be addressed were explicitly shown.			Some examples added in requirements, 11,30 & 31 to illustrate the type of issues which will be considered. The contents of DPP-DS497 will be considered during the review. Further consultancy meetings will be planned to look further into the details of the potential		

COMMENTS BY REVIEWER				RESOLUTION			
Reviewer: Japan NUSSC member		Page of 1					
Country/Organization: Japan / NRA		Date: 30 Sep. 2021					
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					changes for each requirement.		
5	3. 3 rd bullet	Revisions of the safety guides in operation of NPPs have been carried out in compliance with requirements of SSR-2/2 (Rev. 1) as DS497. If any discrepancy exists between SSR-2/2 (Rev. 1) and revised safety guides, it means that the revised guides are not in compliance with SSR-2/2 (Rev. 1). On the other hand, this DPP states that the revision of SSR-2/2 (Rev. 1) is also intend to reflect some aspects from DS497 to the requirements. It may cause some discrepancy between the (Rev. 1) and the (Rev. 2). Therefore, it should show that how to solve the discrepancy if any and should specify relevant paras and examples in the guides.			If such discrepancies exist, then they will be dealt with accordingly. Exact details of how this will be done will be developed on a case-by-case basis.		
6	4.4 th bullet	Some examples to be reflected in this revision from the WANO reports should be specified, as the WANO reports are produced from the perspectives of operating organizations.			Some WANO reports are publicly available and these will be considered during the review. However, the reports of wano peer reviews of NPP are confidential and therefore cannot be used.		

DPP Draft Safety Guide DS532
“Safety of Nuclear Power Plants: Commissioning and Operation, SSR-2/2 (Rev.2)”
(Draft dated 08-07-2021) Status: STEP 3

COMMENTS BY REVIEWER					RESOLUTION			
Reviewer: Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) (with comments of GRS) Country/Organization: Germany Pages: 1 Date: 29.09.2021								
Relevance	Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
1	7	Page.6, Annex, Sect. 4, Req. 5	<ul style="list-style-type: none"> - include reference to leadership expectations, observations and coaching - consider distinguishing between nuclear safety and other types of safety (non-radiation-related and personnel safety) - include a paragraph on fostering safety culture - <u>include reference to timely implementation of reasonably practicable safety improvements</u> 	Please add a current issue. The safety policy should include a statement on continuous improvement of nuclear safety by implementing reasonably practicable safety improvements.	Yes			

DS 532 - Safety of Nuclear Power Plants: Commissioning and Operation Step 3

COMMENTS BY REVIEWER				RESOLUTION			
Reviewer: Country/Organization: Belgium – FANC/Bel V			Page.... of.... Date:				
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
8		There are no changes foreseen for section 9, preparation for decommissioning. one would expect some changes in view of the evolutions in this domain.		Yes review of requirement 32 to be included			

Safety of Nuclear Power Plants: Commissioning and Operation, SSR-2/2 (Rev.2) [Revision of SSR-2/2 (Rev. 1)]

COMMENTS BY REVIEWER				RESOLUTION			
Reviewer: _____ Page.... of.... Country/Organization: IRAN/ National Radiation Department of Iran Nuclear Regulatory Authority (INRA) Date: 2021-09-23							
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
9		“Requirement 18: Emergency preparedness and response”	Requirement 18 should be added to the table in ANNEX. It is suggested to revise “Requirement 18” too. When SSR-2/2 (Rev.1) was published, it was about one year that EPreSC had started its activity. So this standard committee was not involved in revision. The terminology of this requirement is not in line with GSR Part 7. According to the scope of SSR-2/2 (Rev.1), this standard takes into account anticipated operational occurrences as well as accident conditions. There is no clear requirement regarding “emergency response”. GSR Part 7 addresses the requirements for	Yes			

			<p>preparedness and response for a nuclear or radiological emergency and the responsibilities of operating organization. So the response should be considered too.</p> <p>Please consider the following comments as the potential changes to SSR 2/2 (Rev.1).</p>				
10	As an example: Paragraph 5.2/3 first lines	<p>An example to support the comment:</p> <p>“Emergency arrangements shall cover the capability of maintaining protection and safety in the event of an accident a nuclear or radiological emergency; mitigating the consequences of accidents emergencies if they do occur;</p>	<p>This requirement should be revised to cover nuclear or radiological emergencies irrespective of its initiator (maybe a nuclear security event).</p>	Yes			
11	Paragraph 5.2/Lines 3 and 4	<p>An example to support this comment:</p> <p>“...accidents if they do occur; protection of <u>site personnel</u>, emergency workers and the public; protection of the environment...”</p>	<p>The responsibilities of operating organization should be revised. What about “emergency workers”?</p> <p>Please consider paragraphs 5.52 and 5.53 as examples.</p>	Yes			

DPP DS532 SSR-2/2 Safety of Nuclear Power Plants: Commissioning and Operation, revision

COMMENTS BY REVIEWER				RESOLUTION			
Reviewer: M-L Järvinen; K. Hämäläinen; P. Karhu Country/Organization: STUK			Page.... of.... Date:27 th September 2021				
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
12	General	IAEA is planning the introduction of the SMRs into IAEA Safety Standards therefore IAEA should consider the scope and content of the SSR-2/2 updating after the decision on the approach for the introduction of SMRs into IAEA Safety Standards. There are several issues related to the operation of the NPP related to SMRs not covered by SSR-2/2.		Yes Safety Report on the applicability of IAEA Safety Standards to SMRs will be considered in this revision of SSR-2/2			
13	General	DPP DS532 Annex contain list of the topic that need to be updated. However, it is not clear what is actually the issues that need to be updated in the requirements. The issues that need updating should be opened more in the Annex.			Further details of the issues to be updated will follow from subsequent Consultancy Meetings. At this stage we are looking for NUSSC agreement to proceed with revising the safety standard.		
14	General	IAEA should also consider CM review of SSR-2/2 against the changed requirements on leadership and management for safety – GSR Part 2.	GSR Part 2 has been published in 2016.	Yes			
15	Req.1.	The operating organization – definition: IAEA glossary: <i>In</i>		Yes. Safety Report on the			

	3.1 Issue: licensee, safety responsibility	<i>practice, for an authorized facility, the operating organization is normally also the registrant or licensee. However, the separate terms are retained to refer to the two different capacities.</i> What if the licensee is not the operating organization and there is more of a network of actors and in case of e.g. leased SMR:s in the future?		applicability of IAEA Safety Standards to SMRs will be considered in this revision of SSR-2/2			
16	Req. 2. and 3.2 Issue: management system for safety	Would it be logical to combine these sections and refer to and use more of GSR Part 2 structure with necessary additions if Part 2 is not accurately detailed (e.g. in case of multiple units and shared personnel)		Yes this will be considered			
17	Req.3	Consultant suggestion ok, but still lacking details			Further details of the issues to be updated will follow from subsequent Consultancy Meetings. At this stage we are looking for NUSC agreement to proceed with revising the safety standard.		
18	Req 3. 3.8.	<i>“Authority for the safe operation of the plant may be delegated to the plant management. In this case, the necessary resources and support shall be provided.”</i> This is linked to the question of responsibility in requirement 1. The responsibility of safe operations should be clearly		Yes			

		defined despite of business model, which may vary.					
19	Req. 4.	Consultant comments ok, but still lacking details			Further details of the issues to be updated will follow from subsequent Consultancy Meetings. At this stage we are looking for NUSSC agreement to proceed with revising the safety standard.		
20	Req. 5	<p>The consultant proposes to <i>consider distinguishing between nuclear safety and other types of safety (non-radiation-related and personnel safety)</i></p> <p>Please clarify what is meant by separating nuclear and other type of safety. Preferably keep the different types of safety integrated in the management system and consider interrelated issues as far as possible with most importance and weight on nuclear and radiation safety.</p>			Wording changed to: clarify definition of non-radiation-related safety		
21	Req. 8	Would it be good to include something about international projects and language challenges?				√	Unclear how this would fit in a safety standard requirements document. More applicable

							within a safety guide.
22	Req. 8	Human factor engineering methodology implementation in engineering and in planning modifications and maintenance activities should be included.		Yes			
23	Req. 9	Consultant comment: <i>update requirements on performance improvement</i> What it means remains unclear. This could be the requirement where something about independent oversight is said.		Yes	Performance improvement (PI) and independent oversight are two different subjects. PI monitors operational safety performance and looks for deviations so they can be corrected in a timely manner. We are proposing to review this section to confirm that the requirements are still sufficient. Independent oversight is not mention in SSR-2/2.		
24	Req. 12 4.47	<i>The safety review shall include identifying</i> any necessary corrective actions and reasonably practicable modifications for compliance with applicable standards with the aim of enhancing the safety of the plant by further reducing the likelihood and the potential consequences of accidents.	Periodic safety review is not yet the phase of implementation, but rather it is matter of identifying any further needs for improvement. Implementation of the improvements should be covered elsewhere.	Yes			
25	Req. 15 4.52	<i>The operating organization shall identify the types of record and report, as specified by the regulatory body, that are relevant for the safe operation of the</i>	This wording emphasizes the regulatory requirements more than the responsibility of the operating organization.	Yes Update of Requirement 15 now			

		<p>plant. Records of operation, including maintenance and surveillance, shall be kept available from initial testing during the startup of each plant system important to safety, including relevant off-site tests. The records of operation shall be retained in proper archives for the periods required by the regulatory body. All records shall be kept readable, complete, identifiable and easily retrievable [3]. Retention times for records and reports shall be commensurate with their level of importance for the purposes of operation and plant licensing and for future decommissioning.</p> <p>The records of operation shall be handled in accordance with their safety significance, and in line with national regulatory requirements.</p>		included in Annex			
26	Req.16 4.53-4.54	This should be restructured and rewritten.	It is essential to take credit from ageing management program. It is not necessary to require a separate program for LTO as the SSCs need to meet safety requirements all the time, and thus LTO is something that is achievable through comprehensive ageing management of the plant throughout its operation life, not only at the point of exceeding some specific design lifetime based on usually conservative assumptions on load that could occur during operation of the plant. Design lifetime	Yes			

			<p>usually spreads beyond the initial anticipated lifetime due to the fact that the loads during operation are lower than anticipated, and thus the real end of safe operation is pushed forward in time.</p> <p>The issues stated in 4.53 and 4.54 are such that they are taken care of in the ageing management program, and thus the approach should be in line with the AMP.</p>				
27	Requirement 17.5.1	Suggest moving Req. 17 to chapter 2.	<p>The DPP does not propose changes to Req. 17. Indeed, the current text may be considered appropriate in its generic format. However, appropriate implementation of Req. 17 requires awareness of its relationship with the other requirements, remembering the management of safety-security interfaces, and its benefits (as in concepts such as information security, to ensure confidentiality, integrity, and availability of information, where the bridge between safety and security needs is evident and mutually beneficial). The place of</p>	Yes review of Requirement 17 included in Annex			

			Req. 17 in the structure of the publication, as a Sub-Chapter of Chapter 5 may not be optimal to ensure recognition that interfaces exist throughout all the Chapters 2-9.				
28	Req.20 5.13	<i>All plant personnel (including contractors and suppliers) shall understand and acknowledge their individual responsibility for putting into practice the measures for controlling exposures that are specified in the radiation protection programme.</i>	To emphasize that there is usually much personnel from other companies working at site temporarily	Yes			
29	Req. 23	Consultant comment about pandemic ok. But also other risks should be included in the integrated safety concept, e.g. extreme nature phenomenon, terrorist attacks and other stressful situations/risks that might be new concerning e.g. new technologies (SMR, AI, IoT, robotics). The programme to ensure safety should include a continuous and broad risk situation evaluation and continuity planning.		Yes			
30	Req.24	Root causes are often to be found in organization culture. This could be brought forward. The organization should be vigilant and sensitive to messages about the impact of culture on performance, weak signs should be captured in even analyses as					

		appropriate and included in leadership development.					
31	Req. 25	Is commissioning of SMRs applicable as such?		Safety Report on the applicability of IAEA Safety Standards to SMRs will be considered in this revision of SSR-2/2			

{Safety of Nuclear Power Plants: Commissioning and Operation (DS532)}

COMMENTS BY REVIEWER				RESOLUTION			
Reviewer: NSGC Country/Organization: Pakistan / Pakistan Atomic Energy Commission				Date: 30-09-2021			
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
32	Page 6 “Annex” Section 4 Requirement 8	A paragraph on “Human reliability analysis” and a structured approach to identify and eliminate potential human failures may be included.	In the context of IAEA-TECDOC-1048 Human reliability is very important due to the contributions of humans to the resilience of systems and to possible adverse consequences of human errors or oversight.	Yes Tools and techniques to reduce human errors to be included in requirement 8.			

COMMENTS BY REVIEWER				RESOLUTION			
Country/Organization: FRANCE		Date:					
pages							
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
33	Annex	Replace “check consistency with” by “take into account potential insights of development of... if relevant regarding update of prescriptions” when the mentioned document is related to a guidance	Current draft guidance documents shall be consistent with current version of SSR-2/2. “check consistency” implies that it could be possible not to comply with this principle.		Consistency is the term used to ensure consistent flow of information and terminology between the IAEA Safety Standards requirements and Safety Guides (the term was also used in DPP DS497). If inconsistency exist in the Safety Guides, then measures will be taken to address these inconsistencies.		
	Annex	Delete : include reference to psychological evaluation of operating personnel	Too detailed for a safety requirement. More adequate in a guide.				

**ENISS Comments on
IAEA draft DPP DS 532 version 5 – STEP 3**

COMMENTS BY REVIEWER				RESOLUTION ENISS			
Reviewer: ENISS Country/Organization: ENISS		Page 1 of 1 Date: 29.09.2021					
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
34	Page 2, chapter, 3, 4 th bullet	Organizations such as WANO have updated their Performance Objectives and Criteria in 2013 and 2019. Inputs from WANO, <u>WENRA</u> and other like-minded organizations should also be taken into account to make sure that the Safety Requirements publication remains relevant to the nuclear industry.	In the chapter 3 the list of main justifications for the proposed revision is introduced. If even WANO document is mentioned then WENRA SRLs should not be forgotten	Yes In Section 3 phrase “other like-minded organizations” includes WENRA			
35	Page 4; Content	4. MANAGEMENT OF OPERATIONAL SAFETY Subsection: THE <u>INTERFACE BETWEEN NUCLEAR SAFETY AND NUCLEAR SECURITY</u>	Information about the interface between nuclear safety and nuclear security is missed up to now in the document. ENISS would propose to add this for example in section 4. MANAGEMENT OF OPERATIONAL SAFETY as a subsection or as an own section.		Review of interface between nuclear safety and security is to be included in review of requirement 17		