

Revision of 7 closely interrelated Safety Guides on the Operation of Nuclear Power Plants: NS-G-2.2 to 2.6, NS-G-2.8 and NS-G-2.14 (DPP DS497 indice 2)

**DS497C – NS-G-2.4: 30 comments / Accepted (fully or partially): 17 (57%) / Rejected: 16 (53%)**

Some comments are multiple: one part can be accepted and another rejected; hence, total of “accepted” and “rejected” is not equal to number of comments

<b>Country or Organization</b>	<b>Number of comments</b>	<b>Accepted</b>	<b>Rejected</b>
<b>FINLAND</b>	4	2	4
<b>ENISS</b>	16	11	6
<b>WNTI</b>	0		
<b>JAPAN</b>	2	2	
<b>NETHERLANDS</b>	1		1
<b>GERMANY</b>	4		4
<b>GERMANY <i>for WASSC</i></b>	2	2	
<b>USA</b>	1		1

COMMENTS BY REVIEWER					RESOLUTION			
Reviewer: <b>Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU)</b> (with comments of GRS) Country/Organization: <b>Germany</b> Pages: 2 Date: 5 October 2020								
Rele - vanz	Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
1	1.	1.7	The purpose of this Safety Guide is to provide recommendations on establishing, <del>and</del> maintaining <u>and improving</u> the operating organization of a nuclear power plant to meet the requirements established in SSR-2/2 (Rev. 1) [1] and GSR Part 2 [3].	Adding "Improvement"  This guide gives also recommendations for an improvement of operating organizations.			X	1. Comment out of the scope of the DDP. 2. Also rejected to remain consistent between the 7 guides.
2	2.	2.16 Line 5	... Organizational changes are required to be part of the modification programme for a nuclear power plant, in accordance with para. 4.39 of SSR-2/2 (Rev. 1) [1]. These changes should be monitored during and after implementation to ensure that they are not detrimental to safety. <u>The monitoring should be done by the operating organization as well as the regulatory body.</u>	It is not clear who monitors the changes. We suggest to clarify this with the proposed sentence.			X	According to the DPP (Part3, point 4), we do not mention regulator's activities. And in the para 4.39 of SSR-2/2 (Rev.1), the operating organization is in charge to screen and evaluate organizational changes through its modification programme.
2	3.	5.8	To be effective, the safety policy needs the endorsement and active support of senior management <u>also be involved in disseminating the policy throughout the organization.</u>	Based on long term experiences and to underline the importance the senior management should also be involved in disseminating the policy			X	Modifications have been already implemented according to the DDP.

COMMENTS BY REVIEWER					RESOLUTION			
Reviewer: <b>Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU)</b> (with comments of GRS) Country/Organization: <b>Germany</b> Pages: 2 Date: 5 October 2020								
Relevance	Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
				throughout the organization.				It is clearly written in para 5.6 with reference to SSR-2/2 (Rev.1) para 4.1. And shall they promote the safety policy or “an attitude of safety consciousness”?
2	4.	5.32	Paragraph 4.37 of SSR-2/2 (Rev. 1) [1] states: “The appropriate corrective actions shall be determined and implemented as a result of the monitoring and review of safety performance. Progress in taking the corrective actions shall be monitored to ensure that actions are completed within the appropriate timescales. The completed corrective actions shall be reviewed to assess whether they have adequately addressed the issues identified in audits and reviews.” <u><a href="#">Related arrangements should be in place to ensure that appropriate corrective actions in response to audit and review findings are identified and taken.</a></u>	To ensure that appropriate corrective actions in response to audit and review findings are identified and taken, related arrangements have to be in place first.			X	‘Related arrangements’... I refer to paras 2.3-2.8 of this guide.

COMMENTS BY REVIEWER					RESOLUTION			
Reviewer: <b>Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU)</b> (with comments of GRS and BASE) Country/Organization: <b>Germany</b> for WASSC					Page 1 of 1 Date: 2020-08-25			
Relevance	Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
3	1	General	Most statements of requirements of SSR-2/2 are written in bold characters but some are not (e.g. 7.8). This should be adapted.	Consistency	X			
2	2	2.10	2.10. The factors to be considered in determining the structure of the operating organization of a nuclear power plant and its staffing requirements include the following: ... (f) The need to minimize and control radioactive releases <u>and waste arisings</u> and provide for environmental surveillance, in accordance with paras 5.11 and 5.20 of SSR-2/2 (Rev. 1) [1];	Add 5.18/5.19 of SSR-2/2 as reference.	X			

COMMENTS BY REVIEWER					RESOLUTION			
Reviewer: G. Delfini/ R. Jansen Page x of x Country/Organization: <b>Netherlands/ ANVS</b> Date: 8 October 2020								
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection	
1	5.24 – 5.31 and Annex	Please consider rephrasing these paragraphs to clarify what “independent regulatory safety oversight” and “safety committees” are, in particular in relation to the requirements in SSR2/2 rev 1.  Also, provide for alignment with the “safety committees” for research reactors (see requirement 6 in SSR-3).	In these paragraphs the terms “independent regulatory safety oversight” and “safety committees” are introduced (a.o.). Further discussion of these terms is provided in the Annex (Tools for enabling continuous improvement). Still, it is not clear what				X  1. “independent <b>regulatory</b> safety oversight” does not exist in NS-G-2.4.  2. “safety committees”: according to the	

COMMENTS BY REVIEWER				RESOLUTION			
Reviewer: G. Delfini/ R. Jansen Page x of x Country/Organization: Netherlands/ ANVS Date: 8 October 2020							
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
			<p>they are and how they are related to each other.            Please consider that these paragraphs are elaboration of par 4.33 in SSR 2/2 rev 1 (and requirement 9).            However these terms don't exist in SSR 2/2 rev1.</p> <p>SSR-3 (Safety of RR) does introduce the "safety committee" as a requirement (req. 6) for research reactors.</p> <p>Clarification of the relation between "independent regulatory safety oversight" and "safety committees", and their use in the different documents (in particular SSR 2/2 rev 1., SR-3 and this DS would be appreciated.</p>				<p>IAEA safety glossary, 2018 Edition: "A group of experts convened by the operating organization to advise on the safety of operation of an authorized facility."            In addition, See Annex: A-12 of NS-G-2.4, please.</p> <p>3. "alignment with the "safety committees" for research reactors (see requirement 6 in SSR-3)"            The NS-G-2.4 is for... Please, see para 1.3. And, as a consequence, SSR-3 is not referenced.</p>

COMMENTS BY REVIEWER				RESOLUTION			
Reviewer: Japan NUSSC Member Page.1 Country/Organization: <b>Japan</b> / Nuclear Regulation Authority (NRA) Date: 9 October 2020							
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
1.	3.10. 2nd sentence	The <del>senior plant</del> manager is required to ensure that appropriate interaction with interested parties takes place (see Requirement 5 of GSR Part 2 [3]) and should be involved in public information activities and in maintaining relationships with local authorities.	Consistency with Requirement 5 of GSR Part 2.		X  Correct. Agree to replace 'plant manager' by 'senior management' and not 'senior manager' as suggested, two times in 3.10 and in 3.11.		
2.	7.77.	The roles and responsibilities of contractors who might be working at a nuclear power plant in an emergency should be defined <del>at the preparedness stage before the commencement of fuel loading.</del>	Consistency with paragraph 5.2 of SSR-2/2 (Rev. 1).	X			

COMMENTS BY REVIEWER				RESOLUTION			
Reviewer: P. Malesys, S. Edwards Country/Organization: <b>WNTI</b>				Page 1 of 1 Date: 9 October 2020			
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
		No comment					

## COMMENTS BY REVIEWER

RESOLUTION  
ENISS

Reviewer: ENISS

Page 1 of 8

Country/Organization: ENISS

Date: 6 October 2020

Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
1	2.10.	The factors to be considered in determining the structure of the operating organization of a nuclear power plant and its staffing requirements include the following: (a) The need to ensure that structures, systems and components important to safety remain in accordance with the design <u>requirements assumptions and intent</u> ;	ad a) This part should prescribe the need for configuration management arrangements. If originator of this standard does not want to speak about CM, then the word <u>requirements</u> should be added as a minimum because those are deciding factors. The words <i>design assumptions and intent</i> would be better to delete.			X	1. Out of the scope of the DPP. 2. Proposal to modify the original text (black text) of originators.
2	2.14.	Job descriptions or equivalent information should be used to supplement the organizational chart. Job descriptions should clearly define the authorities, responsibilities and competences <u>and qualification</u> for each job or category of job within the operating organization as a whole, and within individual departments in the plant.	DS497F refers in para 3.1. to Requirement 7 of SSR-2/2. This standard speaks about <u>competency and qualification</u> together. Those terms are not identical, DS497F defines further both terms. It is appropriate to use same approach as SSR does.	X			
3	2.18.	<del>When there are several operating organizations within a State, these operating organizations are required to establish arrangements for an effective exchange of operating experience: see para 5.27 of SSR 2/2 (Rev. 1) [1].</del>	This wording is not fully following the mentioned para 5.27 of SSR-2/2 when speaking about OEF in the State only. Para 5.27 of SSR-2/2 is sufficient and there is no need to repeat such sentences in this guide.			X	In contradiction with the DPP497: the revision by amendments is justified, <i>inter alia</i> , by addressing requirements in the safety guides; this is

							the case in this original para (2.18).
4	3.2.	<p>The operating organization has the following main responsibilities:</p> <p>(e) Maintaining liaison with design, construction, commissioning, manufacturing and other organizations involved with the nuclear power plant(s), to ensure proper transfer and understanding of the plant design <u>bases, requirements,</u> assumptions and intent, information and experience, in accordance with para 5.32 of SSR-2/2 (Rev. 1) [1].</p>	<p>Absence of design bases and requirements knowledge is one of the critical problems of organizations running NPPs - see for example INSAG 19 and others.</p> <p>Therefore it is important speak here about design bases and requirements too.</p>	X			
5	3.15.	<p>Since the operating organization has overall responsibility for the safe operation of its nuclear power plants, its management objectives should ensure the following:</p> <p>(a) That the approved design enables the plant to be operated safely;</p> <p>(b) <del>That the plant is constructed in accordance with the design;</del> <u>That the plant is being kept in a safe state throughout its life period</u></p> <p>(c) That the plant is tested to demonstrate that design <del>and construction</del> requirements have been met and that the plant can</p>	<p>ad b) Section 1.11 makes clear that this guidance does not relate to NPP design and construction, therefore this wording is inappropriate. On the other side, the priority of management goal – plant safety - is missing</p> <p>ad c) The construction is out of scope for this document. In fact, what should construction requirements actually be?</p>	X			
				X			



		<p>be operated in accordance with the operational limits and conditions, and design assumptions and intent;</p> <p>(d) That the plant is operated and maintained in accordance with the operational limits and conditions, authorized operating procedures and the design <u>bases, requirements,</u> assumptions and intent, by a sufficient number of competent persons who are adequately trained to cope with abnormal situations, including accident conditions;</p>	<p>ad d) <u>Design bases and requirements</u> must not be missing. Therefore either replace <i>assumptions and intent</i> by design bases and requirements or to add <i>bases and requirements</i> to this subparagraph</p>	X			
6	4.12	<p>The operating organization should provide information on the status of the plant <u>and other aspects of its operation</u> to the public in a regular and timely manner. The public should be informed of any significant event on the International Nuclear and Radiological Event Scale (INES) [15] and of any corrective actions taken at the plant.</p>	<p>According to the global policy of sustainability, of which safety is a permanent part, it's necessary also to inform about other - related positive and negative aspects of the operation of any industrial facility.</p>			X	Out of the scope of the DPP.
7	5.18.	<p>Paragraph 4.34 of SSR-2/2 (Rev. 1) [1] states:  “Self-assessment by the operating organization shall be an integral part of the monitoring and review system. The operating organization shall perform systematic self-assessments to identify achievements and to address any</p>	<p>GS-G-3.5 can be very helpful to understand self-assessment activities and therefore insert this sentence is reasonable.</p>	X			

		degradation in safety performance” <u>For further details on Individual and Management self-assessment, on Independent self-assessment, Management oversight etc. see chapter 6. MEASUREMENT, ASSESSMENT AND IMPROVEMENT of IAEA GS-G-3.5 [12].</u>					
8	5.20.	A prioritized, long-term plan for systematic self-assessments should be developed. At a minimum, self-assessments should be conducted in respect of programs and activities that influence safety (including non-radiation-related safety), plant reliability and regulatory compliance. <u>For further details on the independent unit see chapter INDEPENDENT ASSESSMENT paragraph 6.24 of IAEA GS-G-3.5 [12].</u>	Provisions on the independent unit can be very helpful.			X	Provision already mentioned in the para 5.18.
9	6.6	6.6. Communication with external organizations and with the public during a nuclear or radiological emergency is required to be part of the emergency plan <u>according to the national and international legislation</u> : see paras 6.69–6.63.	The principle is generally valid, but it is necessary to accept local legislation, which, for example, in the Czech Republic transfers specific responsibilities (incl. some types of communication) to the state and its institutions. In the event of a radiation emergency affecting the outer environment, the key role is dedicated to the Integrated rescue system of the country, into which the operating organization enters the data.			X	The para 6.6 does only mention that communication between the plant and...is part of the emergency plan; interested parties have the opportunity to raise their expectations when they work on the emergency plan; so, no need to add

							<u>‘according to the national and international legislation’; in addition, finally, I do not understand ‘international’ here and what are the paras 6.69-6.63.</u>
10	7.1.	<p>In order to undertake the functions and meet the responsibilities listed in Section 3, and to exert effective control over plant operations, the operating organization should establish appropriate documented management programmes<sup>2</sup> and processes. The areas of plant operation to be covered by these management programs and processes, in accordance with the requirements established in SSR-2/2 (Rev. 1), include the following:</p> <ul style="list-style-type: none"> <li>- Staffing<sup>3</sup>;</li> <li>- Operational limits and conditions <u>and operational procedures</u>;</li> <li>- Nuclear security <u>and its interface with safety</u>;</li> <li>- <u>Reliability management</u>;</li> </ul>	<p>Operational procedures must not be missing. They are of equal importance as OLCs. Both have a separate Requirement provision in SSR-2/2 (No 6 and 26). OLCs and Operational procedures should go together as written in para 7.23 and 7.24 of this DS497C document</p> <p>It is important to stress Security and Safety interface</p> <p>Reliability and Knowledge are very</p>	X			
				X			X

		<u>- Knowledge management.</u>	important and should be added to this paragraph			X	‘Reliability management’ is already included is, e.g. maintenance, LTO, Ageing management, etc.  ‘Knowledge management’ is already included in ‘Staffing’
11	7.2.	The programmes and processes listed in para. <del>6</del> 7.1 should address administrative as well as technical aspects of plant operation and should cover all related activities. These programmes and processes should be available sufficiently in advance to allow the corresponding plant operations to be reviewed and assessed by operating personnel before implementation.	Probably wrong reference. Probably par. 7.1 is correct number	X			
12	7.10.	The staffing programme-should be reviewed and updated periodically to ensure that it is consistent with and supports long term objectives. The staffing programme-should address the development of professional and managerial skills and experience, and take into account losses of personnel <u>and their knowledge</u> due to retirement and other reasons. The long term staffing plan should allow sufficient time for the transfer of responsibilities to	It is appropriate to remind the loss of knowledge fact here when a person is loosed despite DS 497F speaks about it too.	X			

		new personnel, and thereby facilitate continuity in the conduct of duties.					
13	7.37.	The surveillance programmes should ensure that items important to safety continue to perform in accordance with the <u>valid design documentation</u> <del>original design assumptions and intent</del> . Such programmes should incorporate the results of probabilistic safety assessment and feedback from operating experience. The programmes should include evaluations and reviews to detect in a timely manner the degradation and ageing of structures, systems and components that could lead to unsafe conditions. These programmes should include monitoring, checks and calibrations, and testing and inspections that complement in-service inspection.	The original design intent of a system may have been changed intentionally during the lifetime of the plant. For example, many so-called Fukushima modifications have done this for systems that were previously not used for accident management.	X			
14	7.53.	Requirement 12 of SSR-2/2 (Rev. 1) states: <b>“Systematic safety assessments of the plant, in accordance with the regulatory requirements, shall be performed by the operating organization throughout the plant’s operating lifetime, with due account taken of operating experience and significant new safety related information from all relevant sources.”</b>	See comment on 7.1	X			

		<p>These safety assessments should be implemented by a safety review group or by independent reviewers to provide an independent evaluation of plant safety, and might include reviews of the following:</p> <p>(a)</p> <p>(b) Operational limits and conditions <u>and operational procedures</u> (and their modifications);</p>					
15	7.62.	<p>With regard to the radiation protection programme at a nuclear power plant, appropriate independent advice should be provided on the following:</p> <p>(a)</p> <p>(b)</p> <p>(c)</p> <p>(d) The radiation protection aspects of plant modifications, <u>their implementation and maintenance;</u></p>	For clarification and completeness			X	'Implementation and maintenance of modifications' is what does the reviewer mean; I do not understand.
16	7.75.	<p>In accordance with GSR Part 7 [14], the emergency plan is required to include arrangements for the following:</p> <p>(a) The timely <u>identification,</u> classification, declaration and notification of a nuclear or radiological emergency;</p>	This arrangement must start with the identification.	X			

COMMENTS BY REVIEWERS					RESOLUTION			
Reviewer: U.S. Nuclear Regulatory Commission								
Country/Organization: U.S. Nuclear Regulatory Commission				Date: 14 October 2020				
Comment No.	Draft Safety Guide No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
1	DS497C	5.12	Activities with a high level of safety significance should be undertaken by specially authorized persons (see para 4.16 of SSR-2/2 (Rev. 1) [1]), such as the reactor operators and plant maintenance personnel.	It is suggested to include plant maintenance personnel also as responsible for plant safety			X	Para 4.16 of SSR-2/2 (Rev.1) does not specify that.

COMMENTS BY REVIEWER					RESOLUTION			
Reviewer: M-L Järvinen Page... of....								
Country/Organization: Finland/STUK				Date: 7 October 2020				
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection	
1.	2.10	... (k) The need to ensure that attitude towards for safety is one of the selection criteria for recruiting staff, appraising staff performance and promoting managers (see para. 5.2 of ...	Please clarify, attitude for safety is better.			X	1. Out of the scope of the DPP. 2. Proposal to modify the original text (black text). 3. In this case, 'towards' is much better than 'for' from my viewpoint.	
2.	5.24	<del>The operating organization should provide a means for independent safety oversight. The principal aim of this oversight is to ensure that, in matters that are important to safety, the accountability for this safety is</del>	Please delete the text and replace the whole paragraph with a new text.  The purpose and organization of the		X  Agree to add See para. 4.36 of SSR-2/2 (Rev.1) at the	X	Independent safety oversight is a common terminology used by nuclear operators (same for safety committee);	

		<p><del>supported by arrangements that are independent of the pressures of plant operation. This safety oversight should be conducted at regular intervals to verify that the plant management has taken effective measures in respect of changes in national regulations and international safety standards, new operating practices and technologies, and the effects of plant modifications. Formal reports resulting from this independent safety oversight should be provided directly to the senior management of the operating organization.</del></p> <p>The operating organization should develop and effectively utilize independent oversight. The purpose of the independent oversight is to verify that the utility has the full capability to perform in a manner which achieves the safety goals through appropriate staffing, processes, activities, actions and monitoring. The independent oversight personnel should be sufficiently independent from the line organisation in order to be capable of providing objective oversight not hindered by line reporting relationships. The independent safety oversight should pay specific attention to verify that the plant management has taken measures in respect of changes in national regulations and international safety standards, operating experience, new operating practices and technologies, and implemented plant modifications as necessary. The</p>	<p>independent oversight should be clarified.</p> <p>SSR-2/2 does not recognize independent oversight. The independent oversight function has been recognized as a good practice in industry. However, it would be good to discuss at NUSSC the purpose of the independent oversight function and the benefits of it.</p> <p>IAEA and WANO have published in 2018 a guideline 01 “Independent oversight”. This document gives useful guidance on the topic.  <a href="https://www.iaea.org/sites/default/files/20/09/wano-guideline-independent-oversight.pdf">https://www.iaea.org/sites/default/files/20/09/wano-guideline-independent-oversight.pdf</a></p> <p>Is independent oversight regulated in some Member States?</p>		<p>end on the para 5.25 of NS-G-2.4.</p>		<p>SSR-2/2 (Rev.1) uses a similar one: ‘audit’, ‘independent internal review’, ‘independent safety review’, ‘independent evaluation’ and ‘independent assessments’</p> <p>Independent safety oversight and safety committee are described in the annex of NS-G-2.4: A-10 and A12 respectively.</p> <p>No need to duplicate the information twice (core text + annex).</p>
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		<p>independent safety oversight should have a direct reporting line to the senior management of the operating organization.</p> <p>Duplication:  <del>The operating organization should develop and effectively utilize independent oversight processes. The purpose of the independent oversight function is to verify that the utility has the full capability to perform in a manner which achieves the safety functions through appropriate staffing, processes, activities, actions and monitoring. The independent oversight personnel should be sufficiently independent from the line organisation in order to be capable of providing objective oversight not hindered by line reporting relationships. The independent safety oversight should pay specific attention to verify that the plant management has taken measures in respect of changes in national regulations and international safety standards, new operating practices and technologies, and the effects of plant modifications. The independent safety oversight function should have a direct reporting line to the senior management of the operating organization.</del></p>					
3.	7.1	<p>In order to undertake the functions and meet the responsibilities listed in Section 3, and to exert effective control over plant operations, the operating organization should establish appropriate documented management programmes<sup>2</sup> and processes. The areas of plant operation to be covered by</p>	<p>Please check the consistence with DS503 and add internal and external hazards.</p> <p>Footnote 2 For the purpose of this Safety Guide, a ‘management programme’</p>		X	X	<p>I worked on it with my colleague in charge of this DS, but what link with the DS497, does the reviewer think?</p>
					<p>‘Management programme’ is used for the first time para 1.12, page 2. So, the footnote has to be moved.</p>		

		<p>these management programmes and processes, in accordance with the requirements established in SSR-2/2 (Rev. 1), include the following:</p> <p>...</p> <p>- internal and external hazards</p>	<p>consists of a systematic application of planning schedules, procedures, reviews and audits supported by appropriate resources to administer a specific management policy.</p> <p>Please add the footnote to page. 3 para. 2.7 where the term programme is used for the first time in this safety guide.</p>				<p>'Internal and external hazards' is not added, because I list areas and not hazards.</p>
4.	7.9 7.10 7.113		<p>Consider harmonizing the terminology, now both terms "staffing programme" and "human resource programme" are used.</p>			X	<p>1. Out of the scope of the DDP 2. 'Staffing programme' comes from SSR-2/2 (Rev.1). 3. 'Human resource programme' comes from SSR-2/2 (Rev.1).</p>