

DS 509 DPP "Revision by amendment of 8 SSGs on Reactors", Version 01/ Step 3, 2017-07-31

COMMENTS BY REVIEWER					RESOLUTION			
Reviewer: Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB) (with comments of GRS) Country/Organization: Germany					Pages 9 Date: 16.10.2017			
Relevanz	Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
2	1	Page 2 / line 4	These Guides were <u>all published before SSR-3 was released in the period 2006-2012 (except SSG-37 which was published in 2015)</u> and represent the international consensus on the safety of research reactors <u>at the respective date of publication.</u> existed at that	The important message should be made clearer: The Guides need a revision because they were published before SSR-3. Specifying the period 2006-2012 leads only to questions why SSG-37 is mentioned separately.	X			
2	2	Page 2 / line 27	The analysis resulted in identification of eight Guides (<u>Group 1</u>) that largely remain valid in their technical content, but have outdated references and deviations from the requirements in SSR-3.	Addition of a reference to the list of guides adds clarity to the text.	X			
2	3	Page 2 / line 29	Two Guides (Group 2) were found to need more in-depth technical revisions mainly due to the new requirement in SSR-3 on design extension conditions.	Addition of a reference to the list of guides adds clarity to the text.	X			
2	4	Page 2 / line 30	Finally, the analysis showed that IAEA Safety Standards Series No. SSG-22, Use of a Graded Approach in the Application of the Safety Requirements for Research Reactors	Addition of a reference to the list of guides adds clarity to the text.	X			

Relevanz: 1 – Essentials 2 – Clarification 3 – Wording/Editorial

COMMENTS BY REVIEWER					RESOLUTION			
Reviewer: Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB) (with comments of GRS) Country/Organization: Germany					Pages 9 Date: 16.10.2017			
Relevanz	Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
			(2012), needs to be revised in its entirety due to its heavy reliance on outdated references to individual paragraphs of NS-R-4 and a lack of guidance related to new requirements in SSR-3, particularly design extension conditions and interfaces between nuclear safety and nuclear security (Group 3).					
1	5	Page 5 / line 19	The revised publications in this DPP are facility-specific (i.e. research reactors <u>and subcritical assemblies</u>), support the application of SSR-3 and interface with all General Safety Requirements and General Safety Guides.	As SSR-3 takes subcritical assemblies explicitly into account the definition of facility-specific should include subcritical assemblies as well.	X			
1	6	Page 6 / line 22	Revision of NS-G-4.1 This Guide will cover commissioning of research reactors (and major modifications and new utilization activities) and provide recommendations and guidance mainly related to implementing Requirements 1, 5, <u>12</u> , 24, 30, 36, <u>40</u> , <u>51</u> , 55, 67, 73, 74, 82 and 83 of SSR-3.	The modifications should also take into account Reqs 12, 40 and 51 as they contain important requests for commissioning.	X			
1	7	Page 6 / line 36	3. Commissioning Programme <ul style="list-style-type: none"> • General Objectives • Format and Content 	A more detailed structure in the commissioning program increases			X	The content in this Section is not meant to be

Relevanz: 1 – Essentials 2 – Clarification 3 – Wording/Editorial

COMMENTS BY REVIEWER					RESOLUTION			
Reviewer: Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB) (with comments of GRS) Country/Organization: Germany					Pages 9 Date: 16.10.2017			
Relevanz	Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
			<ul style="list-style-type: none"> • <u>General description</u> • <u>Organization and responsibilities</u> • <u>Commissioning stages</u> • <u>Commissioning procedures and reports</u> • <u>Documentation needs</u> • <u>Management system</u> • <u>Role of the Operating Organization</u> • <u>Role of the Design Organization and Technical Support Organization</u> 	the clarity of the section. Also in comparison to SSG-28 the planned format of this section is short. The role of operating organization and TSO should be included as it is mentioned in the appendix.				exhaustive but an overview of the proposed structure. As discussed in Section 7 the structure below the sub-level shown is more detailed, and not represented in the text.
1	8	Page 7 / line 13	Revision of NS-G-4.2 This Guide will cover maintenance, periodic testing and inspection of research reactors and provide recommendations and guidance mainly related to implementing Requirements 24, 31, 37, <u>51</u> , 63, 67, 69, 70, 71, 72, 74, 77, 80, <u>81</u> , 82, 84, 87, 88 and 90 of SSR-3.	Req. 51 adds additional information on the testability instrumentation and control systems Add Req. 81, while also “facilities, instruments, tools, equipment, documentation and communication systems to be used in an emergency, including those necessary for communication with off-site au-	X			

Relevanz: 1 – Essentials 2 – Clarification 3 – Wording/Editorial

COMMENTS BY REVIEWER					RESOLUTION			
Reviewer: Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB) (with comments of GRS) Country/Organization: Germany					Pages 9 Date: 16.10.2017			
Relevanz	Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
				thorities ... shall be maintained ...” (7.93 SSR-3). As a result of this, the guide should also provide recommendations and guidance related to emergency preparedness.				
1	9	Page 7 Revision of NS-G-4.2 Section 5	5. Programme for Maintenance, Periodic Testing and Inspection <ul style="list-style-type: none"> • General • Content of the Programme • <u>General description</u> • <u>Management systems</u> • <u>Organization and responsibilities</u> • <u>Selection, training and qualification of maintenance personnel</u> • <u>SSCs included in the programme</u> • <u>Technical procedures and administrative controls</u> • <u>Scheduling</u> • <u>Review and verification of the programme</u> • <u>Documentation</u> 	The section subdivision in section 5 is not detailed enough. A more detailed one will improve the structure of the Guide.			X	See response to comment 7.

Relevanz: 1 – Essentials 2 – Clarification 3 – Wording/Editorial

COMMENTS BY REVIEWER					RESOLUTION			
Reviewer: Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB) (with comments of GRS) Country/Organization: Germany					Pages 9 Date: 16.10.2017			
Relevanz	Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
			<ul style="list-style-type: none"> • <u>Review of results</u> • <u>Maintenance facilities</u> • <u>Procurement and storage of spare parts</u> • Additional Non-Routine Maintenance, Testing and Inspection 					
2	10	Page 7 Revision of NS-G-4.2 Section 6	6. Organization and Responsibilities for Maintenance, Periodic Testing and Inspection <u>Organizational Structure</u> Coordination and Interfaces Responsibilities	Headline of subsection is missing	X			
2	11	Page 8 Revision of NS-G-4.2	<u>Annex I</u> <u>Examples of Preventive Maintenance Activities</u> <u>Annex II</u> <u>Examples of Periodic Testing Activities</u> <u>Annex III</u> <u>Example of a Work Permit Form</u>	Annex I, II and III are missing			X	See response to comment 7..
1	12	Page 9/ line 17	This Guide will cover operational limits and conditions and operating procedures for research reactors and provide recommendations and guidance mainly related to implementing Requirements 6, 18, 20, 21, 24, 35,	The addition of Req. 70 will be helpful for the amendment of section 7. Req. 88 includes lessons learned from the routine operation.	X			

Relevanz: 1 – Essentials 2 – Clarification 3 – Wording/Editorial

COMMENTS BY REVIEWER					RESOLUTION			
Reviewer: Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB) (with comments of GRS) Country/Organization: Germany					Pages 9 Date: 16.10.2017			
Relevanz	Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
			41, 45, 50, 67, 69, <u>70</u> , 71, 72, 74, 75, 77, 78, 81, 82, 83, 84, 85, 87, <u>88</u> and 90 of SSR-3.					
1	13	Page 10 Revision of NS-G-4.5	This Guide will cover the operating organization and the recruitment, training and qualification of personnel for research reactors and provide recommendations and guidance mainly related to implementing Requirements 2, 3, 4, 5, 6, 11, 67, 68, 69, 70, 76, 79, <u>81</u> , 82, 87 and 90 of SSR-3.	Add Reg. 81, while “All personnel involved in responding to an emergency in relation to the research reactor shall be qualified, trained and retrained periodically in accordance with their assigned duties and shall be fit for their intended duty (see GSR Part 7 [6])”(7.91 SSR-3). Considering this statement, the guide should also provide recommendations and guidance related to recruitment, training and qualification in emergency preparedness.	X			
2	14	Page 9 / line 21	<ul style="list-style-type: none"> Changing the title of a Sub-Section of Section 5 to, “Procedures for Operator Response to Anticipated Op- 	The reference to section 5 is misleading as it is section 6 in the revised version. For clarifica-		X The order will be retained, i.e., sub-		

Relevanz: 1 – Essentials 2 – Clarification 3 – Wording/Editorial

COMMENTS BY REVIEWER					RESOLUTION			
Reviewer: Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB) (with comments of GRS) Country/Organization: Germany					Pages 9 Date: 16.10.2017			
Relevanz	Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
			<p>erational Occurrences and Accident Conditions”, to reflect the inclusion of guidance on procedures for the operator to respond to accident conditions.</p> <ul style="list-style-type: none"> Section 8, “Quality Assurance”, will be replaced with a new Section 2, “Management System for Operational Limits and Conditions and Operating Procedures”. This change is needed to reflect the current Agency terminology and better align with the contents of SSR-3 and structure of the other Guides. <u>Changing the title of a Sub-Section of Section 6 to, “Procedures for Operator Response to Anticipated Operational Occurrences and Accident Conditions”, to reflect the inclusion of guidance on procedures for the operator to respond to accident conditions.</u> 	<p>tion the order of the two points may be inverted and the section number changed accordingly.</p> <p>Former Section 5</p>		section 6 then section 8.		
1	15	Page 10	This Guide will cover the operating	The emergency prepar-	X			

Relevanz: 1 – Essentials 2 – Clarification 3 – Wording/Editorial

COMMENTS BY REVIEWER					RESOLUTION			
Reviewer: Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB) (with comments of GRS) Country/Organization: Germany					Pages 9 Date: 16.10.2017			
Relevanz	Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
		/ line 33	organization and the recruitment, training and qualification of personnel for research reactors and provide recommendations and guidance mainly related to implementing Requirements 2, 3, 4, 5, 6, 11, 67, 68, 69, 70, 76, 79, <u>81</u> , 82, 87 and 90 of SSR-3.	edness should be a vital part of the amendment of NS-G-4.5 and thus be included in the list for implementation.				
1	16	Page 12 / line 46	This Guide will cover ageing management of research reactors and provide recommendations and guidance mainly related to implementing Requirements 9, <u>10</u> , 17, 24, 29, 37, <u>38</u> , 77, 86 and 87 of SSR-3.	The Defence in Depth concept is explicitly mentioned in one of the sub-section heading. Therefore, Req. 10 should also be included into the list of important requirements for the amendment. As extended shutdown may occur more often in research reactors than in power reactors, they play an important role in the life cycle of such reactors. Hence, extended shutdowns should be given due consideration during the amendment of SSG-10.	X			

Relevanz: 1 – Essentials 2 – Clarification 3 – Wording/Editorial

COMMENTS BY REVIEWER					RESOLUTION			
Reviewer: Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB) (with comments of GRS) Country/Organization: Germany					Pages 9 Date: 16.10.2017			
Relevanz	Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
1	17	Page 13 / line 37	This Guide will cover instrumentation and control systems and software important to safety for research reactors and provide recommendations and guidance mainly related to implementing Requirements <u>10</u> , <u>16</u> , <u>17</u> , <u>24</u> , <u>25</u> , <u>26</u> , <u>27</u> , <u>28</u> , <u>29</u> , <u>31</u> , <u>35</u> , <u>37</u> , <u>39</u> , <u>41</u> , <u>49</u> , <u>50</u> , <u>51</u> , <u>52</u> , <u>53</u> , <u>54</u> , <u>55</u> , <u>71</u> , <u>75</u> , <u>77</u> , <u>86</u> , <u>87</u> and 90 of SSR-3.	As the Defence in Depth concept and the extended shutdown are explicitly mentioned as sub-section heading, Req. 10 and 87 should also be included into the list of important requirements for the amendment. Req. 55 should be added consistently with Table on page 19 (Section "Annex")	X			

Relevanz: 1 – Essentials 2 – Clarification 3 – Wording/Editorial

Japan NUSSC Comments on DPP-DS509

COMMENTS BY REVIEWER				RESOLUTION			
Reviewer: Country/Organization: Japan NUSSC Member		Page.... of..3 Date: 17/10/2017					
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
1.	General	<p>Total ten (10) documents in DPP-DS509 and DPP-DS510 are planned to be intensively revised in this three years. The total amount of the corresponding works are supposed to be quite a heavy for the member states at the same time. So, these revises should be prioritized in accordance with some policies.</p> <p>Examples of the standards that are high priority for revision are as follows;</p> <ul style="list-style-type: none"> - those standards which are equivalent to the standards for NPPs which are subject to the Vienna Declaration in 2015 are high priority (see attachment); <ul style="list-style-type: none"> → NS-G-4.2, SSG-10 and SSG-24 - those standards which are proposed to be combined in the Long Term Structure of the IAEA Safety Standards are also high priority; <ul style="list-style-type: none"> → combine NS-G-4.2 and SSG-10 (see comment No.2), NS-G-4.4 and DS-396(SSG-20) (see comment No.3) 			<p align="center">X</p> <p>It is agreed that the standards with high priority include those in the long term structure and those equivalent to NPP standards subject to the Vienna declaration. See comments below regarding suggestions to combine guides. The issue of MS workload will be addressed in the production schedule of the documents.</p>		
2.	General	<p>Suggested to combine SSG-10 with NS-G-4.2 in accordance with item No.51 of the Long Term Structure of the IAEA Safety Standards which says that “Combine and supersede Safety Guides SSG-10 and NS-G-4.2. The proposal in DPP-DS509 does not address this future structure. If these two documents need to be revised separately, justification of the cancellation to combine two document must be shown.</p>			<p align="center">X</p> <p>Justification will be added for these two documents to be revised separately.</p>		<p>The suggestion to combine SSG-10 with NS-G-4.2 was considered in a CSM. Ageing Management is one of the main issues facing the worldwide fleet of research reactors, with more than 40% of operating RR</p>

COMMENTS BY REVIEWER				RESOLUTION			
Reviewer: Country/Organization: Japan NUSC Member		Page.... of..3 Date: 17/10/2017					
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
							exceeding 50 years of operation. It is essential to provide separate guidance on Ageing Management and on Maintenance, Periodic Testing and Inspection, to support member states to enhance safety in these two separate and distinct areas.
3.	Proposed action	Postpone revision of NS-G-4.1. NS-G-4.3. NS-G-4.5 and SSG-37.	Proper allocation of loads in the member states.				We understand the need to balance the review work in MS but including the revision of these 4 guides is expected to streamline the review process. The issue of MS workload will be addressed in the production schedule of the documents.
4.	Proposed action	Postpone revision of NS-G-4.6. Also, when revised, it will be suggested to consider item No.49 of the Long Term Structure of the IAEA Safety Standards which says as follows; <i>It will combine and supersede the current documents:</i>	Proper allocation of loads in the member states. When revised, relevant description in other standards than NS-G-4.6 should be included in the revised version.			X	The idea to combine the revision of NS-G-4.6 with other guides was considered. It is also discussed in Section 3 point 6. As a result of the analysis, it is proposed to retain the

COMMENTS BY REVIEWER				RESOLUTION			
Reviewer: Country/Organization: Japan NUSSC Member		Page.... of..3 Date: 17/10/2017					
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
		<ul style="list-style-type: none"> - <i>Safety Guide NS-G-1.13 Radiation Protection Aspects of Design for Nuclear Power Plants (2005)</i> - <i>Radiation protection aspects of NS-G-4.6 Radiation Protection and Radioactive Waste Management in the Design and Operation of Research Reactors (2008)</i> - <i>and appropriate parts of WS-G-2.1 Decommissioning of Research Reactors.</i> 					detailed guidance in NS-G-4.6 and add references to additional guidance available in other safety standards, to support target users.

Attachment “Follow-up to the CNS Vienna Declaration on Nuclear Safety (CSS document dated 2015.10.3)”

Proposal on prioritization of the work on the relevant safety guides

IAEA proposal in 37 th CSS	Corresponding Safety Standards for RR
DS479 - Operating Experience Feedback for Nuclear Installations	(covered by DS479)
DS481 - Design of the Reactor Coolant System and Associated Systems in NPPs	-
DS482 - Design of Reactor Containment Systems for NPPs	-
DS483 - Severe Accident Management Programme for NPPs	-
DS484 - Site Evaluation for Nuclear Installation	(covered by DS484)
DS485 - Ageing Management and Programme for LTO for NPPs	SSG-10: Ageing Management for RRs
DS487 - Design of Fuel Handling and Storage Systems for NPPs	-
DS489 - Storage of Spent Nuclear Fuel	-
DS490 - Seismic Design and Qualification for NPPs	-
DS491 - Deterministic Safety Analysis for NPPs	-
SSG-25 - Periodic Safety Review for NPPs (for confirmation)	-
NS-G-1.5 - External Events Excluding Earthquakes in the Design of NPPs	-
NS-G-1.7 - Protection against Internal Fires and Explosions in the Design of NPPs	-
NS-G-1.11 - Protection against Internal Hazards other than Fires and Explosions in the Design of NPPs	-
NS-G-2.3 - Modifications to NPPs	SSG-24: Safety in the Utilization and Modification of RRs
NS-G-2.6 - Maintenance, Surveillance and In-service Inspection in NPPs	NS-G-4.2: Maintenance, Periodic Testing and Inspection of RRs
	NS-G-4.1: Commissioning of RRs; NS-G-4.3: Core Management and Fuel Handling for RRs; NS-G-4.4: Operational Limits and Conditions and Operating Procedures for RRs; NS-G-4.5: The Operating Organization and the Recruitment and Qualification of Personnel for RRs; NS-G-4.6: Radiation Protection and Radioactive Waste Management in the Design and Operation of RRs; SSG-37: Instrumentation and Control Systems and Software Important to Safety for RRs. SSG-20: Safety Assessment for RRs and Preparation of the Safety Analysis Report

TITLE: DS509, Specific Safety Guides(NS-G-4.2 and 4.4)

COMMENTS BY REVIEWER				RESOLUTION			
Reviewer: Page.... of.... Country/Organization: Korea / KINS Date: 23/10/2017							
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
1	Page 7	A new section or contents that related to Interfaces between Safety and Security may be added.	Revision of NS-G-4.2 is related to Requirement 90(interfaces between nuclear safety and nuclear security) of SSR-.3		X Req 90 will be addressed in NS-G-4.2 and guidance will be provided on the interface between safety and security in the various sections as appropriate, but a new section is not warranted		
2	Page 9	A new section or contents that related to Interfaces between Safety and Security may be added.	Revision of NS-G-4.4 is related to Requirement 90(interfaces between nuclear safety and nuclear security) of SSR-3.		X Req 90 will be addressed in NS-G-4.4 and guidance will be provided on the interface between safety and security in the various sections as appropriate, but a new section is not warranted		

TITLE: DS 509 DPP - Revision by amendment of 8 Specific Safety Guides on Research Reactors as a set of publications

COMMENTS BY REVIEWER				RESOLUTION			
Country/Organization: FRANCE		Date: 17/10/2017					
pages							
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
1.	3	§ to be added at the beginning of chapter 3: The development of the corresponding documents will be the opportunity to ensure overall consistency and hierarchy within standards related to both research reactors and power reactors, notably similar NPP standards will be considered to ensure consistency and evaluate the possibility to merge documents. IT-Platform would be a valuable tool in this context.	This DPP is an important opportunity to reinforce consistency and balance between documents		Added to first para in Sec 3: In addition, guidance in similar NPP standards will be considered to ensure overall consistency.		The possibility of merging documents was considered and the DPP reflects the result. It is agreed that the IT platform is a valuable tool which will be used but it is not necessary to reference this in the DPP.
2.	4	In the objective, add the goal to increase consistency with recommendations applicable to NPP when the recommendation is not facility dependent while recognizing specificities (e.g the fact that experiment are carried out and change according to the needs).	Increase consistency across Safety Standards dealing with nuclear installations				Section 4 is meant to describe the Objective of the revised guide itself, not the objective of the review process. This goal to increased consistency with NPP standards will be ensured during drafting of the documents.
3.	6	Add reference to guidance related to other types of installation but dealing with the same topics, more specifically NPPs	To ensure consistency across Safety Standards when technologies do not warrant different recommendations			X	The list of references is not meant to be exhaustive, see Sec 6 para line 13 – this is not, and cannot be, regarded as an exclusive or exhaustive list.

TITLE: DS 509 DPP - Revision by amendment of 8 Specific Safety Guides on Research Reactors as a set of publications

4	10. Annex	Add a column in the table to mention comparable topics in relevant Safety Guides applicable to NPPs	This gap analysis helps clarifying the future revision			X	The Annex is not meant to be comprehensive. Not relevant to the development of the guides.

FR comments – DS 509 and DS 510 – Evolution of various Safety guides related to research reactors

COMMENTS BY REVIEWER				RESOLUTION			
Reviewer: G. Dandrieux		Page.1of.1					
Country/Organization: Ministry for an ecological and solidary transition – Department for nuclear security		Date: 2017-09-28					
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
DS509							
1 -		It is recommended to add a single paragraph referring to interfaces with nuclear security in each revised document, instead of trying to address the interfaces on very limited topics (such as training, interface with security organisations), which will not account for the global aspect of nuclear security				X	The revision is not intended to account for the global aspect of nuclear security, but the specific aspects of the interface between safety and security, per Req 90 in SSR-3.
2	NS-G-4.4, §6	Physical Protection Procedures	Nuclear security issues shall be referred to in an ad hoc chapter on the interfaces but the PP procedures shall not be summarized in a safety document. It is proposed to modify accordingly line 6 of table on NS-G-4-4 (page 17)			X	The PP procedures will not be summarized in this guide, but aspects of the interface between safety and security will be covered and aligned with security recommendations.
DS 510							
1	Revision of SSG-24 §3	Security and Physical Protection Aspects	See comment n°2 - DS509			X	See response above to comment #2