

Resolutions on Comments on

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**DPP DS551Decommissioning of Uranium Production Facilities**

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**STEP 3 – Review of the Draft DPP by the Committees**

May 2023  
Vienna, Austria

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## Summary table

	<b>Country/ Organization</b>	<b>No. of Comments</b>	<b>Accepted</b>	<b>Accepted with modification</b>	<b>Rejected</b>
WASSC	Finland	2	1	1	
WASSC	Germany	1		1	
WASSC	Japan	5	5		
WASSC	Pakistan	2	1		1
WASSC	Republic of Korea	4	4		
WASSC	Russia	2	2		
WASSC	UK	2	1	1	
RASSC	UAE	1			1
NUSSC	Germany	5	5		
EPreSC	China	1	1		
EPreSC	Japan	1			1
	Total	26	20	3	3

COMMENTS BY REVIEWER				RESOLUTION			
Reviewer: STUK Country/Organization: Finland/STUK Date: May 2023				Page.... of....			
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
1	7	The list in 5.2 should also include, in some from: <ul style="list-style-type: none"> <li>waste management plans</li> </ul>	Availability of waste management infrastructure may not be enough. A plan needs to be made early on for management of the decommissioning waste regardless of the availability of the infrastructure.		X Residue management plan		<ul style="list-style-type: none"> <li>5.2 added with 'Characteristics of residues/waste and residue/waste management plan'</li> </ul>
2	4	The objective of the proposed publication is to provide recommendations for governments, regulatory bodies, operating organizations, technical support organizations, and other interested parties on planning for decommissioning of uranium production facilities throughout their lifetime; from siting, design, and construction of facilities, through to implementation and completion of their decommissioning and terminating the authorization, as well as post-decommissioning control where a restricted release situation may be relevant.	Responsibilities of the government is a chapter in the table of contents, (3.1).	X			

**Draft Safety Guide DS551 “Decommissioning of Uranium Production Facilities”**  
**(Version dated 15 March 2023)**  
**Status: STEP 3**

COMMENTS BY REVIEWER					RESOLUTION			
Reviewer: <b>Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection (BMUV)</b> (with comments of GRS and BASE)  Page 1 of 1 Country/Organization: <b>Germany</b>  Date: 2023-05-11								
Relevance	Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
3	1	Chapter 7 Overview	Consider moving APPENDIX I: SAFETY ASSESSMENT FOR DECOMMISSIONING OF URANIUM PRODUCTION FACILITIES to the main text as also proposed in DS550.	Consistency with other publications		X		Change ‘7.9 Interface with Safety assessment’ to ‘7.9 Safety assessment supporting decommissioning plan’ while maintain Appendix I allowing more detailed information on safety assessment. This is also consistent with SSG-47.

## Japan

COMMENTS BY REVIEWER				RESOLUTION			
Reviewer: WASSC, Japan Page.... of.... Total 2 pages Country/Organization: Japan/Nuclear Regulation Authority Date: 12 May 2023							
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
1	General	<p>The definition of “uranium production” and “uranium production facility” should be mentioned in Section 1 of this document.</p> <p>For example, are the surface processing facilities for heap leaching or in-situ recovery included in “uranium production facilities”?</p> <p>How will surface processing facilities for mining and processing of uranium and thorium subjected in SSG-47 be addressed in this publication?</p>	<p>Clarification.</p> <p>Although the term “mining and milling” was used in the former Safety Guide, i.e., WS-G-1.2, <i>Management of Radioactive Waste from the Mining and Milling of Ores</i>, as a conventional practice, there are no definitions of new substituted terms “uranium production” and “uranium production facility” in IAEA Safety and Security Glossary, 2022ed.</p>	X			Revised as in the DPP. There does need a clear definition of ‘uranium production’ or ‘uranium production facilities’.
2	7. Overview 5.2 (p.7)	“·Characteristics of residue and waste” are better to add explicitly.	<p>Clarification.</p> <p>Volume of residue and waste and radiological properties are major factors on decommissioning.</p>	X			<ul style="list-style-type: none"> <li>5.2 added with ‘Characteristics of residues/waste and residue/waste management plan’</li> </ul>
3	7. Overview	What will be stated in the item 7.9?	Confirmation.	X			Change ‘7.9 Interface with Safety assessment’ to ‘7.9

	7.9 (p.7)		There is no similar item in SSG-47, which applies to decommissioning of power reactors and cycle facilities.				Safety assessment supporting decommissioning plan' while maintain Appendix I allowing more detailed information on safety assessment.
4	7. Overview 9. (p.8)	9.1 Final decommissioning report	Editorial.	X			
5	7. Overview 9.3 (p.8)	(including <b>environmental monitoring e.g.</b> , monitoring of groundwater and surface water, institutional control of tailings facilities)	Clarification. In addition to monitoring of groundwater and surface water, environmental monitoring such as gamma and radon monitoring would be needed as appropriate.	X			

## Pakistan

COMMENTS BY REVIEWER				RESOLUTION			
Reviewer: Javed Iqbal, WASSC Member		Page 1 of 1					
Country/Organization: Pakistan/PNRA		Date: 11.06.2023					
No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
1.	Section 4/line No.1	The objective of the proposed publication is to provide recommendations <b>and guidance</b> for regulatory bodies, operating organizations, technical support organizations, and other interested parties.....	The objective of IAEA safety guides is to provide both recommendations and guidance that how the safety requirements are met.	X			
2.	Section 6	<del>INTERNATIONAL ATOMIC ENERGY AGENCY, Disposal of Radioactive Waste, IAEA Safety Standards Series No. SSR 5, IAEA, Vienna (2011).</del>	Proposed deletion is not inline with the scope of proposed publication.			X	Radioactive waste is generated from decommissioning of uranium production facilities, that requires consideration and arrangement of disposal. This proposed publication will not cover how to develop a disposal facility but provide a link to the SSR 5.



**TITLE**  
**DPP DS551 Decommissioning of Uranium Production Facilities**

COMMENTS BY REVIEWER				RESOLUTION			
Reviewer: WASSC member Page 1 of 1 Country/Organization: Republic of Korea/Korea Institute of Nuclear Safety Date: May 12, 2023							
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
1	p.2 / 22	o In the middle of this page, there is a paragraph that starts with the word of SSG-49. Regarding this, the following is suggested. - SSG-49 “does not address ~~~”. - SSG-47 “address ~~~”.  (number changed and does not deleted)	o Two safety guides are described for the justification. SSG-49 is for medical, industrial and research facilities. On the other hand, SSG-47 address decommissioning of nuclear fuel cycle facilities. But SSG-47 does not include uranium production facilities.	X			Revised as in the DPP
2	p.7 / 29	o In the section 4, its title of the subsection 4.3 should be modified as follows; - Development of a safety policy in cooperation with all personnel - Development of a safety culture in cooperation with all personnel	o Based on IAEA GSR Part 2(2016), the management system has to ensure a strong safety culture. Particularly, there are lots of personnel with contractors during decommissioning. Thus, a strong safety culture should be developed for decommissioning.	X			

3	p.8 / 13	o Final decommissioning report o 9.1 Final decommissioning report	o The number is missed.	X			
4	p.8 / 15	o Its title of the subsection 9.3 should be modified as follows; - Long term surveillance and maintenance plan (including monitoring of groundwater and surface water, institutional control of tailings facilities) - Institutional controls with long term and surveillance and maintenance plan (including monitoring of groundwater and surface water)	o Based on IAEA SSG-47(2018), for the sites released from regulatory control with the restrictions, those should be documented and established as part of the institutional controls. Institutional controls may include the long-term monitoring and surveillance program. It is also approved by the regulatory body. Thus, institutional controls are conceptually correct in the context of restrictions.	X			Changed with a generic term considering terms used in GSR 6, GSR-15, SSG-60, GSG-15, DS538, GSR Part 3 and GSR-6. SSG-60: ‘Long term management and institutional controls (8.37–8.44)’ and ‘Monitoring and surveillance (8.45–8.54)’ DS538 Safety Guide: Long Term Post-Remediation Management of Areas Affected by Past Activities or Events GSR Part 3: post remediation control

## Russian Federation

COMMENTS BY REVIEWER				RESOLUTION			
Reviewer: WASSC, Russia 1		Page 1 of					
Country/Organization: Russia/SEC NRS 04-2023		Date: 27-					
Co mm ent No.	Para /Lin e No.	Proposed new text	Reason	Accepte d	Accepted, but modified as follows	Rejected	Reason for modification/rejection
2	2. Backg round	It is proposed to clarify the term ‘decommissioning’ as applied to uranium production facilities.	Application of the term ‘decommissioning’ to uranium production facilities could be specific in comparison with application to other nuclear facilities.	X			It is a general term used here will cover mines, processing facility, waste disposal facility and contaminated sites, such as surface water and groundwater.
3	7. Ove rvie w	5.2 Key factors influencing the selection of a decommissioning strategy: ... • <i>Environmental impact</i> • <i>Socioeconomic impact</i> (new bullet) • <i>Interested parties</i> – it is proposed to clarify what does it mean	1) Environmental impact and socioeconomic impact are different factors and need to be separated. Environmental impact is more relevant to safety while socioeconomic impact is related to other considerations. 2) It is unclear what does such factor as ‘interested parties’ mean in comparison to socioeconomic factor.	X			There are some interconnections between social economic impact and interested parties. Interested parties could be evolving over time and have different interests and concerns other than social economic aspects. More will be provided when developing the publication

## DS551 DPP Decommissioning of Uranium Production Facilities

COMMENTS BY REVIEWER				RESOLUTION			
Reviewer: L Thomas Page.... of.... Country/Organization: UK – collated comments/Office for Nuclear Regulation Date: May 2023							
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
1	General	Decommissioning of Uranium Mining Facilities	The UK welcomes the production of this guide but would like the title and scope to be better defined in its purpose – notably the exclusion of fuel cycle facilities such as enrichment facilities and fuel production facilities – it is not clear within the title or section 3 justification for production of the guide the scope of the document. Our interpretation is that it only covers mining facilities using any methods.		X  Clarify the definition of ‘uranium production facilities’ and clarify the scope of this publication clearly exclude nuclear fuel cycle facilities other than uranium mining and mineral processing.		For majority of the situation, mining and mineral processing is considered as one facility in terms of planning, development and operation management, including management of residues and waste. ‘Decommissioning of Uranium Mining facilities’ does make development of the publication easier and straightforward. It also aligns with existing IAEA publications SSG-47.
2	General		It is not clear from the scope or table of	X			

			<p>contents whether this guide will include remediation of hazards that are not radioactive in nature, a major hazard from natural uranium is as a heavy metal and any chemicals used in the leaching or mining process. The UK would suggest that all hazards need to be considered in this guide – particularly when considering end-states. For radioactivity end states this needs to be aligned with the guidance currently in production on existing exposure situations and the use of reference levels.</p>				
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**CONCEPT PAPER  
FOR THE PREPARATION OF THE  
LONG-TERM STRUCTURE AND PLAN  
FOR THE IAEA SAFETY STANDARDS**

COMMENTS BY REVIEWER				RESOLUTION			
Reviewer: Genaro Rodrigo Salinas Mariaca Country/Organization: UAE/FANR May-01		Page..1.. of....1 Date: 2023-					
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
1	Whole document	Consider whether this document is really needed into a separate IAEA's Safety Guide.	<p>The content of the guide is quite relevant and needed. However, is it necessary to have it into a dedicated IAEA's safety guide? There is a single document covering the Decommissioning of Nuclear Power Plants, Research Reactors and Other Nuclear Fuel Cycle Facilities (SSG-47), which as it can be seen covers a wide range of facilities and activities. Is it really necessary to cover the decommissioning of Uranium Production Facilities into a standalone document?</p> <p>In addition there is a discrepancy between the DPP which intends to focus on the decommissioning of Uranium Production Facilities and the statement form SSG-47 (which is actually used as justification of this new SG). SSG-47 states that the reason</p>			X	<a href="#">See reasons below</a>

			why Uranium mines and thorium mines and facilities are outside its scope is that they are subject to closure and not to decommissioning. However the proposed document intends to focus on the decommissioning of such facilities.				
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#### Reasons for modification/rejection

Uranium production, used in this proposed publication, includes mining of uranium ores by conventional and by in-situ recovery methods, processing of the mined material to produce uranium concentrate, recovery of uranium as a secondary mineral or by-product or from another source, and management of residues and waste arising from these activities. SSG-47 Decommissioning of Nuclear Power Plants, Research Reactors and Other Nuclear Fuel Cycle Facilities applies processing facilities for the mining and processing of uranium and thorium. Only part of uranium production is covered.

For majority of the situations, mining and mineral processing is considered as one facility in terms of planning, development and operation management, including management of residues and waste. A comprehensive and specific recommendations on decommissioning of uranium production facilities will better serve and practical needs of Member States.

The IAEA Technical Meeting on the Decommissioning of Uranium Production Facilities and Other Facilities Containing Naturally Occurring Radioactive Materials, held in November 2019, recommended “the IAEA should develop a safety document on the decommissioning of uranium production facilities as it is an evident gap in existing IAEA safety standards and Member States have needs”.

**The 52<sup>nd</sup> WASSC meeting held in October 2021 requested the Secretariat to develop a DPP for a new Safety Guide on Decommissioning of Uranium Production Facilities (action under agenda item W2.1).**

The IAEA Technical Meeting on Decommissioning Planning for Uranium Production, held virtually in December 2021 with over 80 participants representing 34 Member States, further discussed issues relating to decommissioning of uranium production facilities, suggested that many of the existing uranium production facilities have not started planning for decommissioning due to lack of dedicated guidance for development and regulatory review of decommissioning plans. A Safety Guide specific to the decommissioning of uranium production facilities is needed. It will help Member States with planning, implementation, and regulatory oversight of decommissioning of uranium production facilities of different methods

**DPP Draft Safety Guide DS551**  
**“Decommissioning of Uranium Production Facilities”**  
**(Draft dated 29 March 2023)**

COMMENTS BY REVIEWER					RESOLUTION			
Reviewer: <b>Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection (BMUV)</b> (with comments of GRS) Pages: 4 Country/Organization: <b>Germany</b> Date: 03.05.2023								
Relevance	Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
1	1.	General comment	<i>It is difficult and confusing to distinguish different types of facilities mentioned in this DPP, as well as to understand which Safety Guide applies to which facility and which not.</i> <i>We made suggestions for rewording.</i>		X			
1	2.	Page 1 Background Line 5	The term “uranium production” as used in this proposed publication includes: <ul style="list-style-type: none"> <li>- mining of uranium ores by conventional <del>methods</del> (underground and open pit) or by in-situ recovery (sometimes termed “in-situ leaching”) methods, <del>and the</del></li> <li>- milling or processing of the mined material to produce uranium concentrate, including yellowcake or uranium slurry. <del>It also includes</del></li> </ul>	Please make more precise and user-friendly definition, how the term “uranium production” is used in this proposed publication	X			It is further clarified.



COMMENTS BY REVIEWER					RESOLUTION			
Reviewer: <b>Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection (BMUV)</b> (with comments of GRS) Pages: 4 Country/Organization: <b>Germany</b> Date: 03.05.2023								
Relevanz	Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
			<del>- recovery of uranium as a secondary mineral or by-product or from another source, and</del> - activities related to the management of residues and waste arising from uranium production.					
1	3.	Page 2 Justification Line 7	Two Safety Guides are published to support GSR Part 6: IAEA Safety Standards Series No. SSG-47, Decommissioning of Nuclear Power Plants, Research Reactors and Other Nuclear Fuel Cycle Facilities; and SSG-49, Decommissioning of Medical, Industrial and Research Facilities. <del>Uranium mines, thorium mines, and radioactive waste disposal facilities are outside the scope of the SSG-47, as they are subject to closure and not to decommissioning.</del> Surface processing facilities for the mining and processing of uranium and thorium are	Suggestion for explanation of applicability/non-applicability of SSG-47 and SSG-49 for uranium production	X			

COMMENTS BY REVIEWER					RESOLUTION			
Reviewer: <b>Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection (BMUV)</b> (with comments of GRS) Pages: 4 Country/Organization: <b>Germany</b> Date: 03.05.2023								
Relevanz	Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
			<del>subject to decommissioning, and all the recommendations in the SSG-47 are also applicable to facilities of this type.</del> <u>Uranium production is outside the scope of SSG-49, as SSG-49, according to para. 1.14. "... does not address decommissioning of nuclear fuel cycle facilities (uranium conversion plants, uranium enrichment plants, nuclear fuel fabrication plants, research reactors including subcritical and critical assemblies, nuclear power plants, facilities for storage of spent fuel, reprocessing facilities and facilities for predisposal management of radioactive waste) and ... decommissioning of the surface processing facilities for mining and processing of uranium and thorium ores and other facilities used for industrial activities involving </u>					

COMMENTS BY REVIEWER					RESOLUTION			
Reviewer: <b>Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection (BMUV)</b> (with comments of GRS) Pages: 4 Country/Organization: <b>Germany</b> Date: 03.05.2023								
Relevanz	Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
			<p>naturally occurring radioactive material” .</p> <p>Uranium production is covered by SSG-47 only partly. So, according to para. 1.14 of SSG-47 <u>“Uranium mines and thorium mines ... are outside the scope of this Safety Guide, as they are subject to closure and not to decommissioning. Surface processing facilities for the mining and processing of uranium and thorium are subject to decommissioning, and all the recommendations in this Safety Guide, are also applicable to facilities of this type”.</u></p>					
1	4.	Page 5 Place in the overall structure	The proposed publication will interface at least with the following IAEA safety standards (this is not, and cannot be, regarded as an exhaustive list): [...]	There will be an interface with SSG-47.	X			

COMMENTS BY REVIEWER					RESOLUTION			
Reviewer: <b>Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection (BMUV)</b> (with comments of GRS) Pages: 4 Country/Organization: <b>Germany</b> Date: 03.05.2023								
Relevanz	Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
			<p>[9] INTERNATIONAL ATOMIC ENERGY AGENCY, Management of Residues Containing Naturally Occurring Radioactive Material from Uranium Production and Other Activities, IAEA Safety Standards Series No. SSG-60, IAEA, Vienna (2021).</p> <p><u>[10] INTERNATIONAL ATOMIC ENERGY AGENCY, Decommissioning of Nuclear Power Plants, Research Reactors and Other Nuclear Fuel Cycle Facilities, IAEA Safety Standards Series No. SSG-47, IAEA, Vienna (2018).</u></p>					
2	5.	Page 7 Overview Line 12	3. RESPONSIBILITIES ASSOCIATED WITH DECOMMISSIONING OF URANIUM PRODUCTION FACILITIES 3.1 Responsibilities of the government 3.2 Responsibilities of the regulatory body	Editorial	X			

	COMMENTS BY REVIEWER Reviewer: <b>Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection (BMUV)</b> (with comments of GRS) Pages: 4 Country/Organization: <b>Germany</b> Date: 03.05.2023				RESOLUTION			
Rele- vanz	Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
			3.3 Responsibilities of licensee for decommissioning					

COMMENTS BY REVIEWER				RESOLUTION			
Reviewer: Japan-EPreSC; Page 1 of 1; Country/Organization: China, Date:06 May 2023							
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
1	7 Overview	8.2 Emergency arrangements	Just suggests that the upcoming draft should include the roles and responsibilities, the arrangements for emergency classification, protection strategy, also other emergency response actions, etc.	X			

COMMENTS BY REVIEWER				RESOLUTION			
Reviewer: Japan-EPRéSC; Page 1 of 1; Country/Organization: Japan / Nuclear Regulation Authority - EPRéSC; Date:06/04/2023							
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
1	Page.8  8. Conduct of decommissioning actions for uranium production facilities	8.2 Emergency arrangements <u>for any normal radiation protection programme.</u>	Clarification:  According to the Appendix I “Typical threat categories” in the GS-G-2.1, “Uranium milling and mining” and “Yellow cake processing” are considered Typical threat category to be “Limited”. In other words, these facilities are not required for special emergency arrangements for radiological hazards. It should be clarified what type of hazard the emergency arrangements in this publication will be intended to address.			X	It is valuable to provide information specific to decommissioning of uranium production.  For uranium mining and milling, there are some scenario identified, such as bleaching of pipelines, overflow of ponds, over pressurization of final product drum, and etc.  It is considered more appropriate to ‘Emergency arrangements’ rather than with modification of ‘for any normal radiation protection programme’. It is consist with such as SSG-47.