	No	Para/Line	Proposed new text	Reason	Accept	Accepted, but modified	Reject	Reason for modification
AUS	1	No. General	No comments		x	as follow		
BEL	11	General	No reference is made to the IAEA Glossaries.	Attention should be paid to the fact that some definitions given in GSR Part 3 and 5 are slightly different from the Glossaries (and are prevailing on those mentioned in the IAEA Glossaries). Consistency check to be done?	x	Terms reviewed for consistency, coherency w GSR Parts 3 & 5		For discussion w WASSC Terms used in the SG are linked to GSR Part 3 and 5; or are defined for the purpose of this guide
BEL	12	General	Content DS 447 and DS 448 almost identical	It would be more handsome to have one single document (DS447 and DS 448 combined) including one general part, dealing with the 'commonalities' in the predisposal management of radioactive waste. Many para. in both documents are the same and these can be arranged in a 'generic' part. For these items which are more specific to Nuclear reactors or to Nuclear Fuel Cycle Facilities a 'specific' part could be provided. This enhances readability and comprehension.			x	For discussion w WASSC SG developed in response to requests from Member States to have a self-standing publication. In this regard, it also includes requirements on "general" safety matters with facility-specific details
FIN	8	General	DS448 is almost identical with the document DS447. The consistency of these two documents should be verified.		x	Discussions on general safety provisions in both documents reviewed		
GER1	1	General	As already requested in our statement to the previous draft version of DS448 dated 25 March 2013, it should be examined closely whether the Draft Safety Guides DS447 and DS448 can be combined and merged into one publication. This publication should contain	Even in the actual revision of the two drafts there still remain a lot of common features for the predisposal management of radioactive waste arising from nuclear reactors and fuel cycle facilities.			x	

	No	Para/Line	Proposed new text	Reason	Accept	Accepted, but modified	Reject	Reason for modification
		No.	 sections dealing with more general recommendations like radiation protection, roles and responsibilities, management system, general safety considerations; one section dealing with lifecycle safety considerations specific for the predisposal management of radioactive waste arising from nuclear power reactors and research reactors; one section dealing with lifecycle safety considerations specific for the predisposal management of radioactive waste arising from nuclear power reactors and research reactors; one section dealing with lifecycle safety considerations specific for the predisposal management of radioactive waste arising from nuclear fuel cycle facilities. Furthermore, it should be considered whether the Draft Safety Guide DS454 "Management of Waste from the Use of Radioactive Materials in Medicine, Industry, Research, Agriculture and Education" (revision of WS-G-2.7) can also be included in this publication. 	Almost all paragraphs in DS448 contain general recommendations for predisposal waste management. There are only a few paragraphs and appendices that are specific to predisposal management of radioactive waste arising from nuclear reactors. In DS447 and DS448, there are a large number of paragraphs whose text is more or less identical. On the other hand, a couple of paragraphs differ in text (e.g. Para 6.1 in DS447 and DS448) or in the assignment to subsections (e.g. Para 3.26 of DS448 corresponds to Para 5.2 of DS447), but unmotivated. In summary, there are no obvious reasons to be recognized for the preparation of two separate Safety Guides on this issue.		as follow		
GER1	2	General	If it is agreed by the competent Safety Standards Committees to maintain two separate Draft Safety Guides (DS447 and DS448) on predisposal management of radioactive waste, the wording in both documents should be made completely identical for all parts in which the issues addressed are	In the current draft versions, there are recommendations or statements in one document which are missing in the other document though they are applicable to both kinds of wastes. It is not apparent why those differences exist.	x	Discussions on general safety provisions in both documents reviewed		

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			applicable in the same way to both kinds of wastes.					
HUN		General	 Relevance and usefulness — The stated objectives are appropriate and they are met by the draft text. Scope and completeness — The stated scope is appropriate and is it adequately covered by the draft text. Quality and clarity — The requirements in the draft are expressed clearly and coherently. 		x			For discussion w WASSC
IRQ	10	General	It is suggested that a new section is added to describe the general requirements of quality assurance.	Radioactive waste management requires planned and systematic actions to satisfy a priori requirements for quality.	x	Chapter 4 clarifies the concept of an integrated management system which includes all aspects of Quality Assurance		Ch 4 addresses Management Systems, which supersedes/ includes concept of QA
RUS	1	General	It is expedient to perform joint consideration of the comments to the both documents and to introduce the same changes to the both documents, since the comments and proposals for the above-mentioned documents are often not of specific nature for a separate document.	General comment to DS447 and DS448	x			
SWE	1	General	Sweden has no comment		Х			
UK	1	General	Several UK organizations believe that DS447 and DS448 should be merged into a single Safety Guide.	• The principals and standards applied to the management of radioactive wastes should focus on the inherent properties of the waste and the hazard presented to human health and the			x	The intent is to address the different communities of users separately and to expand the documents with some details that are

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		No.				as follow		
				 environment, irrespective of whether a reactor or nuclear chemical plant was the source of that waste. Stakeholders to the industry naturally expect the same level of safety to be applied to wastes from reactors as to wastes from chemical plants. Maintaining two separate standards unnecessarily will require greater resources and be less efficient. If the two standards diverge over time, it could result in damaging inconsistencies. Nuclear reactors are an integral part of the fuel cycle themselves. Much of the proposed DS447 and DS448 is similar or identical - the necessary differences could easily be accommodated in a single document. 				facility specific.
UK	2	General	If IAEA chooses to retain 2 separate guides, a check for consistency in wording between DS447 and DS448 is needed.	A significant amount of the text in DS447 and DS448 is very similar. On some occasions, the two standards use slightly different wording to explain the same concept – possibly as a result of editorial changes. Some of the discrepancies include terms that may have legal implications in some member states, or have an inadvertent impact on the overall context. As such, it would be preferable for the exact same text to be used in DS447 and in DS448 wherever the two documents refer to	x	Discussions on general safety provisions in both documents reviewed		

	No	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
				the same concept.				
UK	3	General	If IAEA chooses to retain 2 separate guides, a check of the completeness of the requirements in DS447 and DS448 is needed.	Stakeholders in the nuclear industry rightly expect the same levels of safety in the management of radioactive wastes from nuclear reactors as for the management of radioactive wastes from nuclear fuel cycle facilities. Some stakeholders will therefore have concerns if they see certain requirements appear in just one of the two proposed guides, when it appears the substance of the requirement ought	x	Discussions on general safety provisions in both documents reviewed		
UK	4	General	The document should provide a greater level of guidance on the management of spent fuel.	to be equally applicable to both. IAEA Standards rightly encourage an integrated approach to the management of both nuclear materials and radioactive wastes, such that no single step in the complete lifecycle has an undue negative impact on the safety of the other steps. Factors such as the levels of burn-up, decay heat and the physical integrity of spent fuel are all important to the subsequent fuel management steps, including transport. Therefore, IAEA Guides should highlight the fact that nuclear reactors need to manage some aspects of their fuel routes in a manner that is compatible with the envisaged subsequent processing and/or disposal strategy.				Management of SF as part of reactor/FCF operations covered in other SS's Storage of SF is addressed in SSG-15. This document addresses specific aspects of SF management when declared as waste
UK	5	General	The document should give greater focus to those aspects of safety that	The document would be much more concise, user-friendly and better	x	Document reviewed for consistency in		

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		No.				as follow		
			are specific to the management of radioactive wastes.	targeted if it focused on content that is specific to the management of radioactive wastes, instead of dedicating large amounts of text to general topics that are applicable to all activities involving any type of nuclear matter – guidance on which is already covered in other Safety Guides. Examples include Radiological Protection, Management Systems, Emergency Plans, Safety Cases and Decommissioning Plans.		discussions on general safety provisions (Ch's 2,3,4); Chapter 6 reviewed for completeness and specificities		
UK	6	General	N/A	The document would benefit from a general editorial review, due to some basic shortcomings in grammar and the same points being unnecessarily repeated.	x			
UKR- NE	1	General	In the document does not mention about the ALARA principle of radwaste management		x	Ch 2addresses optimization (current reflection on ALARA principles)		
US	1	General	Most of the text presented in DS448 is a replicate of the text in DS447 with some changes to reflect Nuclear Reactors' waste and applicable references. Therefore, we suggest that IAEA Secretariat consider again merge of the two documents meanwhile keeping Annexes applicable to Reactors independent of those applicable to Fuel Cycle.	Potential merger of DS447 and DS448 into one document while keeping Annexes independent.			x	The intent is to address the different communities of users separately and to expand the documents with some details that are facility specific.
US	2	General	Most of the specific comments on	See Comments on DS447 for rational	х	Comments made by US		

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	No.				as follow		
		DS447 are also applicable to DS448:	and reasons of comments as applicable		considered for		
			to Nuclear Reactor waste.		applicability to both		
		For example:			documents as		
		Comments on use of defense-in- depth concept.			appropriate		
		 Comments on use of DS450 Comments on identifying scope areas for predisposal and disposal 					
		 facility management. Comments on possible use of specific country waste classification system as alternate 					
		 to GSG-1. Comments on use of" Performance Assessment and Integrated Safety Analysis as 					
		 synonym for the safety case. Comments on defining main regulatory body responsibilities. 					
		Comments on using Safety Case and Performance Assessment as					
		 synonyms. Use of terminology such as: Operational Action Levels 					
		 Comments on potential use of "mixing" or "blinding" of waste streams at point of origin 					
		 Comments on use of "thermal treatment and steam reforming processes." 					
		 See also other applicable comments made on DS447. 					

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US	3	No. General	Consistency in use of references and terminology between DS447 and DS448. For example DS447 uses GSR Part 3 whereas DS448 use the BSS.	Consistency	x	as follow GSR Part 3 supersedes BSS		
IRQ	5	1	No generic predisposal waste management scheme is provided	To be used as a guideline to the Member States	x	schemes added		
CAN	1	1.01	Add reference to GSG-1-"Classification of Radioactive Waste" 2009.	Reference GSG-1 "Classification of Radioactive Waste" in text to explain waste categories	x			
UK	7	1.01 Line 1	After 'radioactive waste' add '(radioactive material for which no further use is foreseen, and with characteristics that make it unsuitable for authorized discharge, authorized use or clearance from regulatory control).'	Since the guide covers the topic of radioactive waste it would be helpful to define it as in DS447 or to identify an appropriate reference.	x			
UK	8	1.01	3 rd sentence - "Typical waste from reactors includes" and other paragraphs	The document is unclear on the question of whether radioactive wastes that arise from decommissioning are intended to be in-scope. There are mixed messages in this aspect throughout the document (e.g.; paragraph 3.9 on the topic of finances, 3.20 on decommissioning plans). ONR was under the impression that decommissioning was being dealt with in separate documents, in which case having recommendations in this document with relevance to decommissioning risks being confusing or even become a source of contradictory guidance as the separate	x			While this guide refers the reader to SS's specific to decommissioning, the scope of WM activities includes waste from decommissioning. As such there needs to be consideration of waste from decommissioning

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				documents evolve.				
UKR- NRS	1	1.01, 1.14, 6.12, 6.15, App. 2	It is proposed to delete nuclear fuel (spent and damaged) from this document, partially from ¶'s 1.1 and 1.14. Otherwise, it should be clearly stated (perhaps in the preamble to the document) that safety monitoring of spent fuel includes not only evaluation and monitoring of "radiation protection" but also of "criticality safety" using additional specific safety criteria. Criticality safety criteria like K _{eff} < 0.95 must be incorporated in this document for storage and operations with spent and damaged spent fuel	 ¶'s 1.1, 1.14 on the one hand and 6.12, 6.15 on the other hand somewhat contradict each other. ¶'s 1.1 and 1.14 indicate spent nuclear fuel as radioactive waste, but ¶'s 6.12, 6.15 and App. 2 have no mention of spent nuclear fuel as radioactive waste. The inconsistency between these sections of the document should be resolved. ¶ 1.1 indicates that this document also addresses nuclear fuel, while ¶ 1.4 states that a number of safety aspects for spent nuclear fuel are not considered in this document and are set forth in another publication. In our opinion, radioactive waste that poses only radioactive hazard and waste that poses both radioactive and nuclear hazards (i.e., waste containing fissile materials) should be separated. The latter should include spent nuclear fuel (both damaged and intact). Moreover, the document uses two different terms: "safety" and "criticality safety". 	x	Document will be clarified with regard to management of SF when declared as RW		See response to UK comment 3
FRA	1	1.02	Refer to IAEA classification: IAEA Safety Standards Series No. GSG-1 Classification of Radioactive Waste - General Safety Guide	IAEA reference	x			
IRQ	1	1.04	Delete the statement from	It is repeated in ¶ 1.6			х	1. 4 defines predisposal

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		Line 2	"predisposal" to "transport"					RWM, while 1.6 elaborates the different steps in predisposal RWM
CAN	2	1.05	The generation of radioactive waste cannot be prevented entirely but is required to be kept to the minimum practicable ('waste minimization'). Waste minimization should form an essential component of a radioactive waste strategy.	Highlight waste minimization as essential component of overall radioactive waste strategy.	X			
IRQ	2	1.05 Line 2	Add "at the" before "beginning"	To be more clear	x			
UKR- NE	2	1.05	The generation of radioactive waste cannot be prevented entirely but is required to be kept to the minimum practicable ('waste minimization') as an essential objective of radioactive waste management. Waste minimization relates to type, volume and activity. Measures to minimize the generation of radioactive waste have to be put in place beginning during the design of facilities and the planning of activities that have the potential to generate radioactive waste. This step recognizes that the management of the activities that generate radioactive waste is the key to minimizing quantities produced.	Conformation with the first sentence.	x			
CAN	3	1.06	Change to bullet points and include reference to IAEA safety glossary	Easier to read	x			

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			definition.					
GER2	3	1.06	last sentence: " it is an interim activity with the intent that to retrieve the waste can be retrieved at a later date for clearance, processing and/or disposal at a later time, or, in the case of effluent, for authorized discharge."	From a regulatory point of view, the current formulation is too weak. As storage is by definition an interim measure, although it can last for several decades, retrievability of the waste is in fact a requirement for carrying out the subsequent step(s) in waste management (e.g. clearance, processing or disposal).	x			
UK	9	1.06	Pretreatment may include <u>waste assay</u> <u>and characterisation</u> , waste collection	Assay and characterisation of radioactive wastes is a necessary initial step prior to making an informed choice on the most appropriate treatment and disposal route. Good practice is for assay and characterization to take place as early as possible in the overall waste management process.	x			
GER3	4	1.07	"In cases where no disposal facility is available for the waste, or the waste were to be stored over long periods of time, <u>reasonable</u> assumptions will have to be made regarding anticipated acceptance criteria or other anticipated future steps in order to provide guidance for its <u>predisposal</u> management."	Wording.	x	Use conservative instead of reasonable		Clarity
UK	10	1.07	In cases where Waste were to be stored for long periods of time, <u>precautionary and properly justified</u> assumptions will have to be made	It is highly important that any assumptions made regarding anticipated future acceptance criteria at a disposal facility are precautionary and properly justified. The guide could also		See response to Germany comment 4		

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				mention that similar natured assumptions also need to be made about the timescale in which a disposal facility will be made available.				
CAN	4	1.08	Reactor waste management is further complicated by the problem of mixed waste. Reactor wastes commonly contain other hazards, in addition to radiological hazards, which require specific measures to address conventional health and safety.	Clarify and focus	x			See response to ENISS comment 1
ENISS	1	1.08	In addition to its radiological hazard, the waste may present non- radiological hazards owing to its physical or chemical characteristics, as well as conventional health and safety issues, and these should also be taken into account by the pertinent authority	To clarify that non radiological hazards may be the responsibility of Authorities different from the nuclear one.	x			
ENISS	2	1.09	The objective of this Safety Guide is to provide operators ¹ that generate and manage radioactive waste as well as regulatory bodies with recommendations on how to meet the requirements for the predisposal management of radioactive waste arising from nuclear power plants and research reactors (including subcritical or critical assemblies when declared as waste).	Not all spent fuel is considered as radioactive waste	x			
UKR- NE	3	1.09	The objective of this Safety Guide is to provide operators ¹ that generate and	Add government institutions	х			

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		No.				as follow		
			manage radioactive waste as well as					
			regulatory bodies and Government					
			institutions with recommendations on					
			how to meet the requirements for the					
			predisposal management of					
			radioactive waste arising from nuclear					
			power plants and research reactors					
			(including subcritical or critical					
			assemblies).					
UK	80	1.09	"The operator is the generator of	To correct the English	х			
		footnote	radioactive waste and includes"					
CAN	5	1.10	Does this guide actually supersede or		Х	Once published, this SG		
			rather complement the requirements			will supersede WS-G-2.5		
			and guidance in the listed docs?			and WS-G-2.6.		
UK	11	1.10	Does the IAEA intend to withdraw the	If the quoted superseded standards are	Х	Once published, this SG		
			relevant parts of the quoted	not suitably edited or withdrawn, there		will supersede WS-G-2.5		
			superseded standards, or to edit them	is potential for out-of-date intelligence		and WS-G-2.6.		
			in order to ensure clarity and	to be unwittingly adopted by operators				
			consistency?	or regulators.				
CAN	6	1.12	Need to specify phase of reactor's life.		х			
			Does this document apply to design of					
			new reactors and reactor					
			decommissioning, or just currently					
			operating reactors?					
UK	12	1.12	Replace 'commissioning, operation	Normal operation and accident	х			See response to Canada
		Line 3	and decommissioning' with	conditions are referred to in the guide				comment 6
			'commissioning, operation,	e.g. Requirements 10, 17, para 6.77. It				
			decommissioning and arisings from	is therefore important that waste from				
			accidents.'	accidents is explicitly mentioned in the				
				scope.				
CAN	7	1.12 and	Reword – storage and transport	Conflicting statements (1.12 includes	х	While storage and		
		1.15	included or not included?	storage and transport, but 1.15 does		transport are included in		

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		No.				as follow		
				not)		the definition of predisposal management of radioactive waste, they are not dealt with in detail in this Safety Guide.		
CAN	8	1.13	Is the waste associated with operational activities included?	Please clarify	x	1.13 modified and included in 1.12: While it is recognized that the recommendations in this publication are applicable to the generation of radioactive waste at nuclear reactors; however, operation of nuclear reactors is outside the scope of this Safety Guide.		
UK	13	1.13	"The recommendations in this publication are applicable to all the processes that give rise to radioactive wastes from nuclear reactors."	Paragraph 1.5 states that measures to ensure the minimization of radioactive wastes should be considered from the planning and design stage of a facility onwards throughout the entire lifecycle. Paragraph 5.3 mentions the importance of controlling interfaces between reactors and the facilities that manage radioactive wastes. Paragraph 6.7 states that "During the design of the reactor, consideration should be given to operational features for waste	x			See response to Canada comment 8

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				generation and control". Therefore the proposed statement that, "operational activities at nuclear reactors are outside the scope of this safety guide" is inconsistent.				
UK	14	1.13	Omit sentence.	It is not clear what this sentence means. The guide covers the 'management of radioactive waste' and not just the 'generation of radioactive waste'. The management of radioactive waste should be considered to be an "operational activity".	x			See response to Canada comment 8
GER2	5	1.14	Include new last sentence: "Storage of spent nuclear fuel in facilities that are collocated with a nuclear power plant or research reactor is addressed in <u>the</u> Safety Guide SSG-15 , Storage of Spent <u>Nuclear Fuel</u> [7]. <u>Spent fuel that is</u> <u>destined for reprocessing is not</u> considered radioactive waste."	Clarification and completion with regard to the scope of this document.	x			See response to UK comment 15.
UK	15	1.14	"This Safety Guide only applies to the management of spent nuclear fuel from the point in time that it is declared to be a radioactive waste."	The Guide needs a clearly defined scope. ONR believes that specific guidance is required on the management of spent fuels and this appears to be a gap at present. The UK features a number of accumulations of spent nuclear fuels that have not been declared to be waste, are held in long-term storage and are neither; part of the operational	x			Para 1.13 states: Storage of spent nuclear fuel in facilities that are collocated with a nuclear power plant or research reactor is addressed in Safety Guide SSG-15, Storage of Spent Nuclear Fuel [7].

	No	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
				activities of a reactor, nor; collocated with a power plant.				
IRQ	6	2	General exemption criteria for predisposal waste management practices should be included	Identify the need for optimization of radiation protection and safety measures.			Х	Exemption criteria are covered in GSR Part 3
CAN	9	2.01	The safety objectiveapplies to all radioactive waste generation, processing and storage	To provide focus			x	
GER3	6	2.01	" including planning, siting, design, , construction,"	Editorial (superfluous comma).	x			
UKR- NE	4	2.01	The safety objective and the fundamental safety principles established in [1] apply to all facilities and activities in which radioactive waste is generated, processed or stored for the entire lifetime of facilities, including planning, siting, design, construction, commissioning, operation, shutdown and decommissioning, and the associated transport of radioactive waste.	Remove the extra comma	x			
UK	16	2.02	"The Safety Requirements, GS-R-3, The Management System for Facilities and Activities, requires <i>both the</i> <i>regulatory body and</i> the operator to establish a management system"	In the UK's non-prescriptive regulatory regime, the establishment of a management system that ensures safety, security etc is the responsibility of the site operator.	X			DS456, Leadership and Management for Safety (revision of GS-R-3), is applicable to the operation as well as the regulation of facilities.
CAN	10	2.04	In the context of predisposal management of radioactive waste the requirements established in the International Basic Safety Standards [3] (hereinafter referred to as the	Reference to waste added, consistent with DS447 and Clarification of the governance and definition of the BSS, with the addition of the new first sentence.	x			BSS has been superseded by GSR Part 3

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		No.				as follow		
			BSS), are governed by the objectives, concepts and principles of the Fundamental Safety Principles [1].The BSS [3] states that the three general principles of radiation protection, which concern justification, optimization of protection and application of dose limits, are expressed in Safety Principles 4, 5, 6 and 10 in [1]					
UK	17	2.04 to 2.06 inclusive	Delete	These paragraphs are not specific to the management of radioactive wastes and could be removed.			Х	Consider to keep it as it is since it provides the fundamentals for RP that should be noted by waste operator not necessarily familiar with the RP structure- acceptable overlap.
CAN	11	2.05	Requirements for radiation protection must be established at the national level, with due consideration of the BSS [3]. In particular, radiation protection must be optimized for any persons who are exposed to ionizing radiation as a result of the conduct of activities, with due regard to dose constraints, and require the radiation exposures of individuals to be kept within specified dose limits and as low as reasonably achievable.	Clarification of the optimization for radiation protection, and to include ALARA.	x	Replace BSS with GSR Part 3; replace ALARA with optimization		BSS has been superseded by GSR Part 3; and now refers to optimization rather than ALARA
ENISS	3	2.07	Add:		x			

	No	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
			consideration has to be given <mark> and to the protection of the environment"</mark>					
FRA	2	2.07	Mention "consideration has to be given to the protection of the environment"		x			
CAN	12	2.09	of the environment that are associated with pre-disposal management of radioactive waste	Reference to waste added, consistent with DS447	x			
UK	18	2.09 and 2.10	Delete	These paragraphs are not specific to the management of radioactive wastes and could be removed.			x	Consider to keep it as it is since it provides the fundamentals for Environmental Protection that should be noted by waste operator not necessarily familiar with the environmental protection- acceptable overlap.
CAN	13	2.11	Replace "optimize" with "minimize"	Consistent with 1.5	x			
UK	19	2.11	Second sentence: "The operator should ensure that all legal limits relevant for safety and environmental protection are complied with at all times, with any detrimental impacts to health and safety and the environment kept as low as reasonably practicable."	The existing wording confuses the two separate concepts of; compliance with limits, and; the optimisation of protection.			x	Consistency with DS447
UKR- NE	5	2.11	The operator has a duty in the area of radioactive waste management to take measures to avoid or to optimize the generation and management of	Remove the extra comma	x			

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		No.				as follow		
			radioactive waste, including consideration of requirements related to disposal, with the aim of minimizing the overall environmental impact. This includes ensuring that gaseous and liquid radioactive releases to the environment are in compliance with authorized limits, and to reduce doses to the public and effects on the environment to levels that are as low as reasonably achievable (optimization of protection).					
CAN	14	2.12	In relation to pre-disposal management of radioactive waste	Add reference to waste	x			
IRQ	3	2.3, 3.18, 4.1, 4.5, 4.14, 4.17, and 4.20	Insert "nuclear" before the reference to "security"	Terms of the IAEA	X	•		
IRQ	7	3	A brief description of the licensing requirements for the predisposal radioactive waste management facilities is required to be included.	To be used as a guideline for the regulatory bodies in the Member States	x	 Ch 3 text clarified irt responsibilities of parties in licensing Ch 5 clarified irt SC 		
UK	20	3.01	"The government, site operators and liability owners are responsible for establishing national policy and corresponding strategies"	Development of some of the aspects of waste management strategies in the UK's regulatory system are the responsibility of the relevant site operators and/or liability owners.	x	"The government is responsible for ensuring that a national policy and strategy are established"		GSR Part 5
UKR- NE	6	3.02	The management of radioactive waste should be undertaken within an appropriate national legal and regulatory framework that provides	Refinement of range of the legal and regulatory framework, extension of range of legal documents	Х			

	No	Para/Line	Proposed new text	Reason	Accept	Accepted, but modified	Reject	Reason for modification
		No.				as follow		
			for a clear allocation of duties and responsibilities, and that ensures the effective regulatory control of the facilities and activities concerned [1, 2]. The legal framework should also establish measures to ensure compliance with other relevant international legal instruments, such as the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management [17], the Convention on Nuclear Safety [18], and other					
			relevant Directives and Conventions.					
UKR- NE	7	3.02 after	Add a new paragraph after 3.2: In order to implement national policy and strategy some Government responsibilities can be place on government institution. If more than one government institution involved in activity, effective arrangements should be made to ensure that they responsibilities and functions are clearly defined and coordinated, in order to avoid any omissions or unnecessary duplication. Government institutions activity should be organized in such a way as to achieve consistency and to enable the necessary feedback and exchange of information.	Add responsibilities for government institutions	x			
CAN	15	3.03	In relation to pre-disposal	Add reference to waste	х			

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			management of radioactive waste					
GER2	7	3.03	" the regulatory framework should recognize that the overall safety is affected by the interdependences between radiological, industrial, chemical and toxic hazards-and. It should be ensured that the regulatory framework identifies this and delivers effective control."	Clarification. The regulatory framework is the grammatical subject of this sentence. It is probably not the intention of the sentence to state that the regulatory framework should ensure that the regulatory framework identifies something.	x			
CAN	16	3.04	Reference IAEA Safety Glossary for definition of installation		Х	Replaced installations with "facilities for the predisposal management of radioactive waste"		clarity
HUN	1	3.05	The legal framework should include provisions to ensure a clear allocation of responsibility for safety throughout the entire process, in particular with respect to interface with the storage of radioactive waste and its transfer between operating organizations.	Addition: The legal framework should include instructions to ensure the necessary information for the Regulatory Body's supervision process.	x	"The legal framework should include provisions to ensure a clear allocation of responsibility for safety throughout the entire process (including provisions for regulatory control and authorization),"		
IRQ	4	3.05 Line 2	Delete the word "organization"	Surplus	х			
UK	21	3.05 line 6	Insert "the" before "interface".	To improve the grammar and clarity of the sentence.	х			
TUR	1	3.07	Responsibility for safety should be ensured by means of a system of authorization by the regulatory body. For transboundary transfers between	There may be other authorities who are designated to authorize transboundary transfers between States (such as Ministry of Environment or Parliament).	х	For transboundary transfers of radioactive waste between States, authorizations from the		

	No	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
			States, authorizations arising from legislative and regulatory frameworks of both Stales are required			relevant national regulatory bodies within the legal and regulatory frameworks of both States are required		
UK	22	3.08	Delete	The key point that is being made in this paragraph is more clearly expressed in the preceding paragraph 3.5. The meaning of the phrase "content and" is not clear.	x			
CAN	17	3.08	Delete "various"	Seems unnecessarily wordy	x	See response to UK comment 22		
TUR	2	3.08	Interdependencies exist between the various steps in the management of radioactive waste. The legislative and regulatory framework should incorporate clear definitions of the content and responsibilities for the management of the interdependences.	Allocation of responsibilities should be provided inside the legislative frameworks of States.	x	3.5 modified: "The legal framework should include provisions to ensure a clear allocation of responsibility for safety throughout the entire process (including provisions for regulatory control and authorization),"		See Hungary comment 1 Para 3.8 deleted (per UK comment 22)
TUR	3	3.09	A mechanism for providing adequate financial resources should be established to cover any future costs, in particular, the costs associated with the storage of radioactive waste, decommissioning of both the prédisposai waste management facilities and the storage facilities and also the costs of final disposal of	In order to avoid unnecessary burdens on future generations, it should be defined that financial resources should cover final disposal for countries where final disposal is not defined in their legislative frameworks.	x			See response to Canada comment 18

	No	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
			radioactive waste.					
JAP	3	3.09 Line 3 (p.7)	decommissioning of the reactor facilities, and waste management facilities , and storage facilities , and also	According to the IAEA Safety Glossary and para. 1.12, predisposal waste management facilities include storage	x			See response to Turkey comment 3
				facilities.				
BEL	1	3.09	"A mechanism, if applicable The financialfacility."	It is not quite clear to what 'if applicable' refers but adequate financial resources should be established for covering any future cost.	х			See response to Turkey comment 3
CAN	18	3.09	Change 2 nd sentence to: The financial mechanism should be established at each stage of licensing and updated as necessary.	To capture different licensing stages if applicable (site preparation, construction, operation)	x			See response to Turkey comment 3
UKR- NE	8	3.10	In order to facilitate the establishment of a national policy and strategy, the Government should establish a national inventory of the radioactive waste and radioactive waste storage (current and anticipated including waste generated during decommissioning and dismantling of facilities) and update it at regular time intervals. This inventory should take into account the Safety Guide on classification of radioactive waste [19].	Clarification of title and purpose of the national inventory	x			
UK	23	3.10 (DS447)	"The government should consult interested parties (i.e. those who are involved in or are affected by radioactive waste management activities) on matters relating to the development of policies and strategies that affect the management of	If it is appropriate for DS447 to make this statement, it should also be in DS448.	x			

	No	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
		_	radioactive waste."					
CAN	19	3.11	Change 'treatment, conditioning' to 'processing'	Covers all areas	х			
UK	24	3.11 line 2	"all waste generated. <u>In judging</u> <u>the sufficiency of capacity account</u> <u>should be taken of process</u> <u>uncertainties, system reliability and</u> <u>availability and the possible need for</u> <u>redundancy</u> . The storage capacity"	These important considerations have been omitted.	x			
HUN	2	3.12	The government should consult interested parties on matters relating to the development of national policies and strategies that affect the management of radioactive waste, and should take due account of the concerns of the public.	Remark: Communication with the public is very important. The Safety Guide should innervate and emphasize the importance of this.	x	Text added: "Communication with and involvement of the public is very important to decision making."		
UK	25	3.15 line 4	updated " <u>by the operator</u> " and reviewed	The regulator does not do the updating	х			
CAN	20	3.18 (b)	Change from "its renewal after expiration" to "its renewal at or prior to expiration"	This would create an unlicensed waste facility if licence is permitted to expire	x			
HUN	3	3.18 c	Possible long-term storage of radioactive waste after the reactor has been decommissioned.	Modification: Possible long-term storage of radioactive waste and spent fuel after the reactor has been decommissioned.	x			
CAN	21	3.20 last sent.	Change to: "If a facility is shut down and no longer to be used for its intended purpose, a final decommissioning plan and supporting documents shall be submitted to the regulatory body for approval within	Add new text to include regulatory guidance for the review of the final decommissioning plan. COMMENT: Section 3.20 provides regulatory guidance on the level of	X	Prior to the shutdown of a facility, a final decommissioning plan should		

	No	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
			two years of permanent shutdown, unless an alternative schedule is agreed by the regulatory body. The regulatory body should review the specific decommissioning arrangements in accordance with DS450.	review on "initial decommissioning plan" which is conceptual. However, the section does not provide any similar guidance for the final decommissioning plan. Consistent wording with DS450 which is referenced.				
UK	26	3.20	Delete	This paragraph is concerned with the assessment of decommissioning plans and not the management of radioactive wastes. There is adequate relevant guidance on the topic of decommissioning plans in alternative Safety Guides.			x	Decommissioning is part of the lifecycle of waste processing facilities. this section is about the regulatory responsibilities ito. Such facilities
UK	81	Req. 04	2 nd sentence could open with words to the effect of, <i>"The operator's</i> <i>responsibilities include, but are not</i> <i>limited to"</i>	The text does not mention a number of responsibilities on operators involved in radioactive waste management, such as records management. It is therefore important that operators do not misinterpret this text as being a fully exhaustive list.			x	Quotation of the requirement
CAN	22	3.21-3.37	This entire section could be reduced because many of the sections are GS- R-3 requirements. Duplicating requirements in this manner adds volume to the document. (Examples: 3.29, 3.34, 3.36, etc.)	Suggestion to improve readability	x	See responses to specific comments on paragraphs		
RUS	2	3.22	The operating organization is responsible for the safety of all activities associated with the management of radioactive waste	We propose to change the given statement or to exclude the text in brackets.	x	Inserted "undertaken at its facilities"		Topic that needs to be addressed in WASSC

	No	Para/Line	Proposed new text	Reason	Accept	Accepted, but modified	Reject	Reason for modification
		No.	(including activities undertaken by contractors)	The operating organization <i>can and</i> <i>must</i> ensure <i>safety of installations and</i> <i>activity</i> within their own enterprise (site) only, but <i>can not</i> ensure <i>safety</i> of the third-party contractor enterprise, in particular, if it is located abroad. In practice, safety assurance within the third-party enterprise means <i>the</i> <i>comprehensive control</i> on behalf of the operator, <i>over the whole activity</i> related to management of radioactive waste and performed by the contractor organization within its own enterprise, which is impossible.		as follow		
				Thus, for instance, the Operator cannot ensure safety at management of radioactive waste dispatched for conditioning or reprocessing to the third-party enterprise, though <i>it is</i> <i>responsible for the quality</i> of the waste supplied and for <i>the quality</i> of the accepted product of reprocessing. Responsibility for the safety of <i>its own</i> installation and activity shall be borne by the contractor organization.				
CAN	23	3.23	Include reference to 'Duty of Care' – do owners of the waste continue to own the waste after sending it to another facility	Needs to be clear that someone has to take ownership of the waste	x			
UKR-	9	3.23	In some instances, the operating	Take into account paragraph 3.10	х			

	No	Para/Line	Proposed new text	Reason	Accept	Accepted, but modified	Reject	Reason for modification
		No.				as follow		
NE			organization may be the owner of the					
			radioactive waste and in other cases					
			the owner may be a separate					
			organization or operating unit. In the					
			latter case, the interface between					
			responsibilities of the owner and the					
			operating organization should be					
			clearly defined, agreed and					
			documented. Information about					
			changes in ownership of the					
			radioactive waste or changes in the					
			relationship between the owner and					
			the waste management organization					
			should be provided to the regulatory					
			body and to the government					
			institutions. For example, NPP					
			operators or their surrogates who do					
			not have complete responsibility for					
			all aspects of predisposal management					
			should coordinate and harmonize with					
			the regulatory authority and					
			commercial entities (where necessary)					
			to ensure that the disposition of					
			radioactive waste generated at their					
			facility is appropriately planned and					
			safely managed.					
UK	27	3.24a	Delete	There should be no need for the	х	Application to the		
				operator to apply to the regulator for		regulatory body for		
				permission to <i>design</i> a facility.		permission to site,		
						obtain regulatory		
						approval for the		
						radioactive waste		

No	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
					management facility or activity by providing an		
4	3.24 f	Development an application of acceptance criteria <u>to be approved</u> by the regulatory body.	In accordance with IAEA recommendations	x	"Development of operational limits, conditions, and controls, including waste acceptance criteria consistent with the safety case for approval by the regulatory body"		GSR Part 5: The operator is responsible for deriving operational WAC consistent w the SC
3	3.24 f	Development an application of acceptance criteria <u>to be approved</u> by the regulatory body.	In accordance with IAEA recommendations	х			
28	3.24 (f)	Replace with " <u>Meeting the</u> <u>requirements of waste acceptance</u> <u>criteria.</u> "	The operating organization may not be the developer of all the relevant acceptance criteria and their application may not require regulatory approval in all circumstances in all member states	x			
3	3.24, P. 11	 (f) Development and application of acceptance criteria <u>for a specific</u> <u>radioactive waste management facility</u> as approved by the regulatory body; (m) Ensuring that radioactive waste generated is appropriately <u>characterized at the point of</u> generation and processed to comply 	For clarification Characterization is missing. Proper determination of characteristics of raw waste is very important to comply with the waste acceptance criteria for	x	"Ensuring that radioactive waste is appropriately processed to comply with"		
2	3.24 (g)	with "Ensuring that the waste acceptance criteria at a particular step	disposal. Waste acceptance criteria should take account of downstream criteria in order	х	Bullets modified		
	4	No. 4 3.24 f 3 3.24 f 28 3.24 (f) 3 3.24 (f) 3 3.24 (f)	No.43.24 f5.24 fDevelopment an application of acceptance criteria to be approved by the regulatory body.33.24 f33.24 f283.24 f3.24 fDevelopment an application of acceptance criteria to be approved by the regulatory body.283.24 (f)33.24 (f)Replace with " <u>Meeting the requirements of waste acceptance criteria.</u> "33.24, P. 1133.24, (f)9.11(f) Development and application of acceptance criteria for a specific radioactive waste management facility as approved by the regulatory body; (m) Ensuring that radioactive waste generated is appropriately characterized at the point of generation and processed to comply with23.24 (g)	No. Development an application of acceptance criteria to be approved by the regulatory body. In accordance with IAEA recommendations 3 3.24 f Development an application of acceptance criteria to be approved by the regulatory body. In accordance with IAEA recommendations 3 3.24 f Development an application of acceptance criteria to be approved by the regulatory body. In accordance with IAEA recommendations 28 3.24 (f) Replace with " <u>Meeting the requirements of waste acceptance criteria and their application may not be the developer of all the relevant acceptance criteria and their application may not require regulatory approval in all circumstances in all member states 3 3.24, P. 11 (f) Development and application of acceptance criteria for a specific radioactive waste management facility as approved by the regulatory body; For clarification 3 9.11 (m) Ensuring that radioactive waste generated is appropriately characterized at the point of generated is appropriately with Characterization is missing. Proper determination of characteristics of raw waste is very important to comply with the waste acceptance criteria for disposal. 2 3.24 (g) "Ensuring that the waste acceptance criteria in order </u>	No. No. Image: Construction of acceptance criteria to be approved by the regulatory body. In accordance with IAEA recommendations x 3 3.24 f Development an application of acceptance criteria to be approved by the regulatory body. In accordance with IAEA recommendations x 3 3.24 f Development an application of acceptance criteria to be approved by the regulatory body. In accordance with IAEA recommendations x 28 3.24 (f) Replace with "Meeting the requirements of waste acceptance criteria to be approved by the regulatory body. The operating organization may not be the developer of all the relevant acceptance criteria and their application may not require regulatory approval in all circumstances in all member states x 3 3.24, P. 11 (f) Development and application of acceptance criteria for a specific radioactive waste generated is appropriately characterized at the point of generated is appropriately characterized at the point of generated is appropriately with For clarification is missing. Proper determination of characteristics of raw waste is very important to comply with the waste acceptance criteria for disposal. 2 3.24 (g) "Ensuring that the waste acceptance criteria should take account of downstream criteria in order X	No. as follow 4 3.24 f Development an application of acceptance criteria to be approved by the regulatory body. In accordance with IAEA recommendations x "Development of operational limits, conditions, and controls, including waste acceptance criteria to be approved by the regulatory body. 3 3.24 f Development an application of acceptance criteria to be approved by the regulatory body. In accordance with IAEA recommendations x "Development of operational limits, conditions, and controls, including waste acceptance criteria consistent with the safety case for approval by the regulatory body" 3 3.24 f Development an application of acceptance criteria to be approved by the regulatory body. In accordance with IAEA recommendations x 28 3.24 (f) Replace with " <u>Meeting the requirements of waste acceptance criteria."</u> The operating organization may not be the developer of all the relevant acceptance criteria and their application may not require regulatory approval in all circumstances in all member states x "Ensuring that radioactive waste is appropriately processed to comply with" 3 3.24, P. 11 (f) Development and application of acceptance criteria for a specific radioactive waste management facility as approved by the regulatory body; For clarification X "Ensuring that radioactive waste is appropriately processed to comply with" 2 3.24 (g)	No.as follow43.24 fDevelopment an application of acceptance criteria to be approved by the regulatory body.in accordance with IAEA recommendationsx"Development of operational limits, conditions, and controls, including waste acceptance criteria to comply with the regulatory body.33.24 fDevelopment an application of acceptance criteria to be approved by the regulatory body.In accordance with IAEA recommendationsx"Development of operational limits, conditions, and controls, including waste acceptance criteria to regulatory body.33.24 fDevelopment an application of acceptance criteria to be approved by the regulatory body.In accordance with IAEA recommendationsx283.24 (f)Replace with "Meeting the regulatory body.The operating organization may not be the developer of all the relevant acceptance criteria and their application may not require regulatory approval in all circumstances in all member statesx33.24, P. 11(f) Development and application of acceptance criteria for a specific radioactive waste magement facility as approved by the regulatory body;For clarification all circumstances in all member statesX33.24, P. 11(f) Development and application of acceptance criteria for a specific radioactive waste magement facility as approved by the regulatory body;Characterization is missing. Proper determination of characteristics of raw waste is very important to comply with the waste acceptance criteria in orderX"Ensuring that radioactive waste is appropriately waste is regionand processed to comp

	No	Para/Line	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
		No.	required to meet the downstream waste (anticipated) acceptance criteria;"	interdependencies				
ENISS	5	3.24 g	Ensuring that the waste acceptance criteria at a particular predisposal management step <u>are consistent with</u> <u>the waste acceptance criteria of the</u> <u>downstream waste management step</u> "	In accordance with IAEA recommendations	X	Bullets modified		
FRA	4	3.24 g	Ensuring that the waste acceptance criteria at a particular predisposal management step <u>are consistent with</u> <u>the waste acceptance criteria of the</u> <u>downstream waste management step</u> "	In accordance with IAEA recommendations	x	Bullets modified		
UK	29	3.24 (g)	"waste acceptance criteria are developed at necessary points in the predisposal radioactive waste management process, taking account of the information required"	Criteria cannot acknowledge. The pertinent concept is development better in this context rather than in (f)	X	Bullets modified		
UKR- NE	10	3.24 (i)	Providing periodic reports as required by the regulatory body and Government Institutions (e.g. information on the actual inventory of radioactive waste, any transfers of radioactive waste into and out of the facility, including material cleared from regulatory control, and any events that occur at the facility and which have to be reported to the regulatory body) and communicating with relevant interested parties;	Add Government institutions	X	Bullets modified		consistency with DS447
GER3	8	3.24 (j)	"Derivation and implementation of operational limits, conditions and	Consistency with the terminology used elsewhere in this document (compare	х	Bullets modified		consistency with DS447

	No	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
		NO.	controls;"	with Paras 3.16, 3.26, 3.34, 6.63 and 6.84).				
BEL	3	3.24 (m)	"Ensuring that radioactive waste generated is requirements. If acceptance criteria for disposal are not yet available, ensuring that the management of radioactive waste is based on <i>specific</i> assumptions for the anticipated disposal option.	If the disposal option is anticipated, but no detailed information is available on site characteristics, 'specific' should be 'generic'?	Х	Bullets modified		consistency with DS447
GER3	9	3.24 (m)	 1st sentence: "Ensuring that radioactive waste generated is appropriately processed to comply with the acceptance criteria" 2nd sentence: " ensuring that the management of radioactive waste is based on specific reasonable assumptions for the anticipated disposal option;" 	The word 'generated' is superfluous. Each radioactive waste has been generated. In the event that a disposal option does not exist, it seems to be more important for the assumptions to be reasonable than to be specific.	X	Bullets modified		consistency with DS447
UK	30	3.24n	Delete the phrase "taking into consideration decisions that would have to be made".	Some of the topics listed would need some sort of decision earlier.	Х	Bullets modified		consistency with DS447
CAN	24	3.24 (n) (3)	Add 'subsequent clearance or lower classification level. '	Will not always be clearable, but may require less shielding etc.	Х	Bullets modified		consistency with DS447
FRA	5	3.24 (n) (3)	To be deleted	Wrong statement: decay storage of activated large components will reduce the activity of short lived nuclides but activity of long lived nuclides will remain (e.g. Ni-59, Ni-63, Nb-94) which might make these components improper to subsequent clearance to some disposal routes	X	Bullets modified		consistency with DS447

	No	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
ENISS	6	3.24 n (3)	Delete (e.g. of activated large components)	Potentially misleading example as the decay storage of activated large components will reduce the activity of short lived nuclides but activity of long lived nuclides will remain (e.g. Ni-59, Ni- 63, Nb-94) which might make these components improper to subsequent clearance to some disposal routes	x	Bullets modified		consistency with DS447
BEL	4	3.25	"In the case where waste is generated at the facility, the operating organization should develop a facility specific waste management programme that:"	Not clear. There should always be a waste management programme even if the facility generates only secondary waste.	x			
UKR- NRS	4	3.25 P. 12, First line	In the case where <u>secondary</u> waste is generated at the facility <u>for</u> radioactive waste management	It should be clear that secondary waste is considered.	х	Text modified		See response to BEL comment 4
UK	31	3.25	"a waste management programme for each facility, integrated with all other relevant programmes".	When located on a multi-facility site, a waste management programme needs to take account of cross- site planning. The facility plan also needs to recognise any constraints from down-stream processes that may be located on other sites	x	Text modified		Consistency w DS447
CAN	25	3.25 (c) (3)	Change to "Processing radioactive waste'	'Retreating' could be misconstrued	х			
GER3	10	3.26	" the operating organization should provide the regulatory body with a safety case and supporting safety assessment that demonstrates the safety of the proposed activities and demonstrates that the proposed activities will be in compliance with	1 st sentence: Editorial. 2 nd and 3 rd sentence: Wording.	x	Moved to Ch 5		Consistency w DS447

	No	Para/Line	Proposed new text	Reason	Accept	Accepted, but modified	Reject	Reason for modification
		No.				as follow		
			The operating organization should use the safety assessment to establish specific operational limits, conditions and operational administrative controls. The operating organization may wish to set an operational target level below these specified limits to assist in avoiding any breach of those that may be approved limits and					
			conditions."					
CAN	26	3.27	Change 'At an early state in the lifetime' to 'Prior to licensing	Otherwise the timing of this seems to conflict with 3.9?	x	At the design stage		GSR Part 6
ENISS	7	3.27	At an early stage in the lifetime of a radioactive waste management facility, the operating organization should prepare preliminary plans for its eventual decommissioning, considering possible long term storage of radioactive waste after the reactor has been shut down. For new facilities, features that will facilitate decommissioning should be taken into consideration at the design stage; such features should be included in the decommissioning plan together with information on arrangements for how the availability of the necessary human and financial resources and information will be assured, for presentation in the safety case	The arrangements for financial and human resources should not be presented in the safety case	x			
GER2	11	3.27	1 st sentence: " considering possible long term storage of radioactive waste	The proposed insertion makes clear that we address here a state that is different	х			

	No	Para/Line	Proposed new text	Reason	Accept	Accepted, but modified	Reject	Reason for modification
		No.				as follow		
		<u>NO.</u>	after the reactor has been <u>permanently</u> shut down." Please assign a new footnote No. 3 to the term 'permanently shutdown' with the following text of the footnote: " ³ The term 'permanent shutdown', as <u>used in this publication, means that</u> <u>the reactor has ceased operation and</u> <u>will not be restarted, i.e. it will no</u> <u>longer be used for its intended</u> <u>purpose. Permanent shutdown is a</u> <u>state that is different from a planned</u> <u>shutdown (e.g. due to refuelling</u> <u>outage, maintenance, inspection or</u> <u>refurbishment) or an unplanned</u> <u>shutdown (e.g. due to a scram), during</u> which the reactor is not in operation."	from a temporary shutdown (whether planned or unplanned) of the reactor. A short definition of the term 'permanent shutdown' should be provided here (e.g. in a footnote as proposed at the left) since the term is used subsequently in Paras 3.35, 5.4 and 6.91 (e) of this document. See our related comments on these Paras. The text of the footnote is partially taken from the Draft Safety Requirements DS450 "Decommissioning of Facilities" (revision of WS-R-5), see footnote No.1 to Para 1.2 in the final version dated 20 November 2013 (approved at the 34 th CSS meeting in November 2013).				
GER3	12	3.27	2 nd sentence: "For new facilities, features that will facilitate decommissioning should be taken into consideration at the design stage; such features should be included in the <u>initial</u> decommissioning plan"	Ensure consistency with Para 3.20 of this document as well as with the Draft Safety Requirements DS450 "Decommissioning of Facilities" (revision of WS-R-5), see Paras 7.3 and 7.4 of the final version dated 20 November 2013.	x			
UK	32	3.27 end	Insert: <u>"The decommissioning plan</u> <u>should be reviewed and updated at</u> <u>each phase in the lifetime of the</u> <u>facility."</u>	Omission	х			
ENISS	8	3.28	For existing facilities without a decommissioning plan, such a plan	There is no necessity to prepare it "as soon as possible"	х	As required by or agreed with the regulator		

	No	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
			should be prepared as soon as possible in an <u>appropriate time</u> schedule.					
GER3	13	3.28	1 st sentence: "For existing facilities without a decommissioning plan, such a plan should be prepared <u>by the</u> <u>operating organization</u> as soon as possible."	Clarification with regard to the responsibility for preparing the decommissioning plan.	x			
UK	33	3.28	Delete	This paragraph is concerned with decommissioning plans and not the management of radioactive wastes. There is adequate relevant guidance on the topic of decommissioning plans in alternative Safety Guides.			x	
GER2	14	3.29	1 st sentence: "The operating organization should establish the requirements (including the necessary means and resources for their implementation) for training and qualification of its staff and contractors, including for initial and periodic refresher training."	It is worthless to have requirements for training and qualification of staff that cannot be implemented in practice, due to the lack of funding, missing training supervisors or for any other reasons.			x	Covered in 3.34
CAN	27	3.29	Add training and qualifications for radiation protection officer	RPO should be appropriately knowledgeable about health physics, the types and quantities of radionuclides that will be processed or stored, measurement, monitoring, dosimetry, emergency response, etc. (including criticality were applicable)	x			
CAN	28	3.30	A report summarizing the results of such these pre-operational and	The commissioning report should be at least reviewed by the regulatory body	х			

	No	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
			commissioning tests (inactive commissioning) should be prepared and submitted to the regulatory body for review and acceptance.	as this may be a hold point for the waste management facility operation.				
GER3	15	3.31	"The operating organization should limit on-site contamination and occupational exposure, with account taken of the results of optimization for of protection and safety (e.g., considering limits for on-site contamination and occupational exposure)."	The phrase enclosed in brackets is superfluous. The recommendation to limit on-site contamination and occupational exposure is already provided in the preceding text. Avoid unnecessary repetition.	x			
CAN	29	3.32	Such documents should be retained and maintained as required or agreed with the regulatory body.	What if the documents were needed after the facility has been fully decommissioned for whatever reason? documents retention should be kept for the entire lifetime of the facility or better left to an agreement with the regulatory body.	x			
UK	34	3.32	Rewrite: " <u>Records should be</u> <u>maintained for discharges, clearances</u> <u>of material from regulatory control,</u> <u>reuse or recycling of materials, as well</u> <u>as delivery of radioactive waste to an</u> <u>authorized disposal facility and</u> <u>transfers to other facilities. Such</u> <u>records should be retained until the</u> <u>facility has been fully decommissioned,</u> <u>or for a period agreed with the</u> <u>regulatory body.</u> "	To use 'records' rather than 'documents' and to better structure the paragraph.	x			
UKR- NRS	5	3.32 P. 13	Reworded as follows: "Discharges, <u>conditional or</u>	To take into account other aims of clearance, e.g., clearance for disposal as			x	Unnecessary level of detail

	No	Para/Line	Proposed new text	Reason	Accept	Accepted, but modified	Reject	Reason for modification
		No.				as follow		
		Line 1	<u>unconditional</u> clearance of materials from regulatory control <u>(e.g., for</u> reuse or recycling of materials), as well as"	non-radioactive waste.				
IND	1	3.33	The operating organization should prepare plans, implement <u>monitoring</u> programmes for personnel <u>monitoring</u> , area <u>monitoring</u> , and environment <u>monitoring</u> Such programmes should be evaluated periodically.	Paraphrasing and regular evaluation is important.	x			
CAN	30	3.34 line 6	Change 'reprocessing' to 'further processing'	'Reprocessing' could be misconstrued	x			
BEL	5	3.35	"The operating organization is required after the reactor has been shut down and for future disposal (even when a disposal option is not yet available)".	Financial resources shall be provided (from the beginning) for waste management from the "cradle to the grave" (coping in this way with e.g. bankruptcy,)	x			
GER2	16	3.35	"As stated in GSR Part 1 [2], t ^{The} operating organization is required to put in place appropriate mechanisms for ensuring that sufficient financial resources are available to undertake all necessary tasks throughout the lifetime of the facility, including its decommissioning [2], and the possible long term storage of radioactive waste at the site after the reactor has been <u>permanently</u> shut down."	 In a Safety Guide, usually recommendations (or "should" statements) are provided. Modify wording to emphasize that a requirement (or "shall" statement) is cited here. Regarding the use of the term 'permanent shutdown', ensure consistency with our related proposals for Paras 3.27, 5.4 and 6.91 (e). The insertion makes clear that we address here a state that is different from a temporary shutdown of the reactor. 	x	GSR Part 5		Correct reference
UK	35	3.35	"Site operators and the owners of	This paragraph makes no allowance for	x	Inserted: "In certain		GSR Part 5

	No	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
			radioactive wastes are required to put in place"	the fact the operator may not be the waste owner and that responsibility for finance may largely rest outside the operator (e.g. NDA and MoD in the UK situation).		circumstances, financial resources may need to be provided by the waste owner."		
2	17	3.36	1 st sentence: " a records system on the generation, processing and storage of radioactive waste, which should include, among others, the radioactive inventory, location and characteristics of the radioactive waste, and information on ownership and origin"	With regard to the contents of a records system, a variety of other items are listed in Para 5.42 of GS-G-3.3. The proposed insertion should make clear that the contents are not limited to the few parameters mentioned in the text.	x			
GER2	18	3.36	last two sentences: "Such a records system should be managed as required by the national authority <u>or the regulatory body</u> . <u>The</u> <u>records system should also include</u> <u>information on disposal of radioactive</u> <u>waste in case of delivery</u> ."	 Ensure consistency with Para 4.20. Depending on national regulations, requirements for the storage of records are prescribed by the national authority or the regulatory body. According to Para 3.32, delivery of radioactive waste to an authorized disposal facility should be documented. Such information could easily be included in the records system on the generation, processing and storage of radioactive waste. 	x	Text modified to address transfer of RW (e.g., for further processing, storage, or disposal)		Consistency w DS447
UK	36	3.36	"The operators' record system should meet all applicable national standards."	The original wording could be misinterpreted as requiring operators' records to be managed by the "national authority".	x	should be managed by the operating organization as required by the national authority or regulatory		Consistency w DS447

	No	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
						body		
FIN	1	3.37 P. 14	The operating organization should draw up emergency plans on the basis of the potential radiological impacts of accidents (GSR-2 GSR Part 7) [25] and should be prepared to respond to accidents at all times as indicated in the emergency plans.	MS comments are already given on GSR Part 7. Please check whether the reference could be updated.	x			To be verified
GER3	19	3.37	" potential radiological impacts of accidents (GS_R-2) [25] and"	Editorial.	х			
UK	37	3.37	Delete	This paragraph is concerned with emergency plans and is not specific to the management of radioactive wastes. There is adequate relevant guidance on the topic of emergency plans in alternative Safety Guides.			x	Facility specific information added
UK	38	4.01	Before para 4.1 suggest adding box for requirement 21: <u>Requirement 21 (GSR Part 5, Ref. [4]:</u> <u>System of accounting for and control</u> <u>of nuclear material.</u> <u>For facilities subject to agreements on</u> <u>nuclear material accounting, in the</u> <u>design and operation of predisposal</u> <u>radioactive waste management</u> <u>facilities the system of accounting for</u> <u>and control of nuclear material shall</u> <u>be implemented in such a way as not</u> compromise the safety of the facility.'	 Requirement 21 is relevant to the topic of nuclear material accountancy which is covered in this section. The requirement is included in DS447. 	x			
AFG	1	4.01 After	The designers of security systems should consult with qualified safety	Safety and security shall be comprehensively elaborated.	x	Added at end of last sentence "and neither		

	No	Para/Line	Proposed new text	Reason	Accept	Accepted, but modified	Reject	Reason for modification
		No.				as follow		
		(new)	experts to ensure that security measures do not compromise the safety of individuals or the protection of the environment.			safety nor security is compromised."		
IND	2	4.02	The operator should assess and manage the interfaces between nuclear security, safety and nuclear material accountancy and control activities in a manner properly to ensure that they do not adversely affect each other and that, to the degree possible, they are mutually supportive.	"Properly" is clearer than "in a manner"	x	appropriately		clarity
UK	39	4.02	Delete	Paragraph 4.2 repeats the key points of paragraph 4.1			Х	text per agreement w NSGC. 4.1 covers design while 4.2 covers operations
GER2	20	4.03	"When material is required to be accessed for waste management or safeguard purposes, this should take account of relevant safety requirements for radiation protection, and waste management as well as nuclear security considerations should be taken into account."	To improve the comprehensibility of this statement, the sentence should be reworded. Our proposal is provided here.	x			
IND	3	4.03	When material is required to be accessed for waste management or safeguard purposes, this should take account of requirements for radiation protection, waste management, and nuclear safety and security considerations should be taken into	Paraphrasing. Safety and security requirements are also essential.	x			

	No	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
			account.					
GER3	21	4.04	"Specific recommendations on nuclear security in the management of radio-	Both NSS-13 and NSS-14 are inadvertently cited twofold in the list of	×			
			active waste are dealt with in the publications of the IAEA Nuclear	references. Therefore, Ref. [26, 27] can be deleted and replaced by Ref. [10, 11].				
AFG	2	4.04 (a) (New)	Security Series [26, 27] [10, 11]." Radioactive Waste sites operators shall establish a management system, commensurate with the size and nature of the authorized activity, which ensures that Policies and procedures are established that identify security as being of the highest priority Problems affecting security are promptly identified and corrected in a manner commensurate with their importance. The responsibilities of each individual for security are clearly identified and each individual is suitably trained and qualified. Clear lines of authority for decisions on security are defined and Organizational arrangements and lines of communications are established that result in an appropriate flow of information on security at and between the various levels in the	Efficient security culture shall be implemented.			x	Text per agreement with NSGC. Requested text is covered under security guidance
UK	40	4.05	entire organization of the operator. Delete "as far as practicable"	The existing text gives the impression that the act of discharging waste is preferable to other means of disposal.	x			
				preferable to other means of disposal. This may not be true in all				

	No	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
				circumstances.				
UK	43	4.05 - 4.09	Add a new paragraph on the topic of environmental protection.	The relationship between environmental protection and safety is amongst the most important Interdependencies in the management of radioactive wastes.	x	Reference given to Ch 2		
UK	41	4.06	"The following aspects in particular should be addressed:"	The proposed text is too weak. These aspects should not be "considered" they should be firm requirements.	x			
RUS	3	4.06	(b) The establishment of acceptance criteria, where necessary, and the confirmation of conformance with the acceptance criteria by means of verification tests or the examination of records.	We propose to exclude the crossed-out text, since the information given in this context is superfluous. Besides, the analytical method for confirmation of the conformance (the calculation based on the known variabilities) is not presented	x	The establishment of acceptance criteria and the confirmation of conformance with the acceptance criteria		clarity
FRA	6	4.06 (b)	"where necessary" " by means of verification tests <u>and</u> <u>or</u> the examination of records."	waste acceptance criteria are needed for each step of waste management from predisposal steps up to disposal. recommendations	x	The establishment of acceptance criteria and the confirmation of conformance with the acceptance criteria		clarity
CAN	31	4.07 line 3	Define or change 'upstream'	Not sure this term is often used?	x	deleted		clarity
UK	44	4.08	Consideration should be given to replacing this with Para 4.11 of DS447.	DS447 seems more comprehensive and addresses the non foreclosure of options	x			
FIN	2	4.08. P. 16	If no disposal facility is available for the waste, specific assumptions should be made on <i>future</i> requirements for the acceptance of the waste for waste disposal requirements in order to provide guidance for its-waste	Acceptance criteria for waste are difficult to determine if no disposal facility is available since WAC is derived from the safety assessment of the facility. More general requirements ("requirements for future disposal")	x	Replaced with para 4.11 in DS447		See response to UK comment 44

	No	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
			management.	can, however be determined for example based on the available geological formations in the country and on the chosen concept of the facility.				
GER3	22	4.08	1 st sentence: "If no disposal facility is available for the waste, specific reasonable assumptions should be made on the requirements for the acceptance of the waste for disposal in order to provide guidance for its management."	In the event that a disposal option does not exist, it seems to be more important for the assumptions to be reasonable than to be specific.	x	Replaced with para 4.11 in DS447		See response to UK comment 44
UK	42	4.08	In cases where Waste ere to be stored for long periods of time, <u>precautionary and properly justified</u> assumptions will have to be made	It is highly important that any assumptions made regarding anticipated future acceptance criteria at a disposal facility are precautionary and properly justified. The guide could also mention that similar assumptions also need to be made about the timescale in which a disposal facility will be made available.	x	Replaced with para 4.11 in DS447		See response to UK comment 44
BEL	6	4.08	"If no disposal facility is available for the waste, specific assumptions should be made on the pre-established conformity requirements for the acceptance of the waste for disposal in order to provide guidance for its management allowing for the development of anticipated acceptance criteria. These assumptions should be justified and agreed upon by the waste generator,	In order to take into account all inter- dependencies (supposing disposal is the final stage in waste management), anticipated WAC should/could be based on generic disposal scenarios, based on a set of pre-established (future) conformity requirements.	x	Replaced with para 4.11 in DS447		See response to UK comment 44

	No	Para/Line	Proposed new text	Reason	Accept	Accepted, but modified	Reject	Reason for modification
		No.				as follow		
			the operator of the waste management facility and the regulator."					
UK	45	4.08 After	Insert new Para: <u>"Waste packages</u> <u>should have a system of identification</u> <u>that is unique, able to be linked to its</u> <u>associated records and that takes</u> <u>account of the need to be read in the</u> <u>long term future up to disposal."</u>	Omission	x	Added to Para 6.2		Section 6.2 relates to interdependencies
CAN	32	4.09	Delete 1 st sentence of example.	It appears to duplicate 4.6(b) and the concluding sentence carries the matter.	x			
CAN	33	4.10 1 st sent.	Suggest moving the words in brackets "(including safety, health, environmental)" from 4.11/first line to 4.10/ first line after "The requirements on management systems".	This better identifies the different management systems.	x			
CAN	34	4.11 1 st sent.	Replace the word 'required' with 'recommended'. The management system requirements of GS-R-3 can still be mentioned in 4.10 but make the requirement for integration a recommendation only.	Integration should not be a requirement but rather be based purely on an analysis by the facility. There are sound benefits and increases in safety level with integration; however, this may not always be the case for every facility at any stage in its lifetime. Integration may not make sense in some facilities in certain situations and may not have any added safety benefit.			x	GSR-3 requires that the mgmt system be integrated

	No	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
		4.11 3 rd line	Replace "Management systems" with "A management system"	This is not editorial. At this point the term needs to be singular because plural is incorrect.	x			
		4.11 4 th sent.	Replace "safety of facilities" with "safety of the facility".	Since management system is singular then typically it is one waste management facility. However, if the intention was to mean that there could be multiple facilities under one management system, then this comment can be disregarded.	x	management systems for the radioactive waste processing, handling and storage of radioactive waste		In line with title of guide
GER2	23	4.11	1 st sentence: " <u>As stated in GS-R-3 [6],</u> <u>a</u> An integrated management system (including safety, health, environmental, nuclear security, quality and economic elements) is required to be established, implemented, assessed and continually improved by the operating organization- <u>[6]</u> ."	In a Safety Guide, usually recommendations (or "should" statements) are provided. Modify wording to emphasize that a requirement (or "shall" statement) is cited here.	x			
GER3	24	4.11	4 th sentence: "The management system should be designed to ensure that the safety of the radioactive waste management facilities are is maintained,"	Grammar.	x	Replaced with Para 4.13		Consistency w DS 447
HUN	4	4.11	Addition: The management system should be designed to ensure that the safety of facilities are maintained, and that the quality of the records and of subsidiary information on radioactive waste inventories is preserved, with	International cooperation and knowledge-transfer are absolutely useful here. The design of the management system should meet the requirements prescribed by the regulatory body.	x	Replaced with Para 4.13		Consistency w DS 447

	No	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
			account taken of the duration of the management and storage periods and the consecutive management steps, for example, clearance, release, discharge, reprocessing or disposal.					
IND	4	4.11	Paraphrasing. Safety <u>and security</u> requirements are also essential.	Both safety and security are important.			х	Topic covered under another section
JAP	E1	4.11 Line 4 (p.16)	The Mmanagement systems should make provision for	Editorial	x	Replaced with Para 4.13		Consistency w DS 447
UK	46	4.11 to 4.13	Delete	The guidance contained within these paragraphs is adequately covered in other Safety Guides, which are appropriately referenced in paragraph 4.10.			x	This section provides guidance on meeting SS's on Mgmt Systems during waste management
CAN	35	4.12	Move the wording for this section to section 4.11 after the first or second sentence. (Note this will eliminate 4.12).	Section 4.12 is simply a reason for integrating the various management systems and therefore fits better at the beginning of 4.11 where 'integrated management system' is introduced.	x			
CAN	36	4.13 1 st line	Add the words "should integration be decided" after "integrated management system".	To coincide with comment for 4.10/first sentence above (integration should be a recommendation not a requirement - see comment #1 for more information).			x	See response to Canada comment 34
CAN	37	4.13	4.13 now becomes 4.12 due to the previous comment.		х	Sections revised		Consistency w DS 447
GER3	25	4.13 (b)	"Retention or transfer of ownership of radioactive waste and <u>predisposal</u> management facilities;"	Wording.	x			
GER2	26	4.13 (e)	"Provision of adequate <u>financial</u> resources (the adequacy of resources for maintenance <u>and eventual</u>	It is understood that item (e) deals with financial resources since the provision of human resources is already covered	x			

	No	Para/Line	Proposed new text	Reason	Accept	Accepted, but modified	Reject	Reason for modification
		No.				as follow		
			decommissioning of facilities and equipment may need to be periodically reviewed over operational periods that may extend over decades); and"	in items (a) and (c).				
UK	47	4.14	Replace, "of the waste generating facility" with "of all facilities involved in the generation and management of radioactive wastes".	The challenges associated with adequate resourcing of radioactive waste management activities apply to all steps of the waste management process, not just at the point where waste is generated.	x			
CAN	38	4.15	Also highlight financial guarantees.	Organizations which drift into financial difficulties typically also have problems with regulatory performance.			x	Financial guarantees covered in Para's 4.14
UK	48	4.15	Re-write to: <u>"Management of</u> <u>radioactive wastes can take place over</u> <u>long timescales. In such circumstances</u> <u>the government, regulators, waste</u> <u>owners and site operators should</u> <u>address the sustainability of all the</u> <u>required resources to maintain safety</u> <u>and environmental protection in</u> <u>appropriate policies, strategies and</u> <u>plans."</u>	To improve clarity.	x			
UK	49	4.16 & 4.17	Delete	These paragraphs are concerned with Management Systems and are not specific to the management of radioactive wastes. There is adequate relevant guidance on the topic of Management Systems in alternative Safety Guides.	x			

	No	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
CAN	39	4.18	Define "long term" or change to "interim" which is defined in IAEA safety glossary	Does long term mean decades or hundreds of years for example? There are definitions for short and long term specific to SSG-15 in SSG-15 - Annex I	x			See response to Germany comment 27
ENISS	9	4.18	"In the <u>design of waste facilities to be</u> <u>operated over a long period</u> , consideration"		x			See response to Germany comment 27
FRA	7	4.18	"In the <u>design of radioactive waste</u> <u>management facilities to be operated</u> <u>over a long period</u> , consideration"		x			See response to Germany comment 27
GER2	27	4.18	1 st sentence: "In the design of facilities for <u>the</u> long term <u>predisposal</u> <u>management (processing, storage) of</u> radioactive waste <u>management</u> , consideration should be given to the incorporation of measures that will facilitate operation, maintenance of equipment and eventual decommissioning of the facility."	In fact, the recommendations provided in this paragraph are reproduced from Para 4.20 of the Safety Guide SSG-15 "Storage of Spent Nuclear Fuel". Therefore, it is understood that the phrase 'long term radioactive waste management' in the context of this paragraph relates to processing (i.e. pretreatment, treatment and conditioning) and storage. This should be clarified by the proposed insertion. In Paras 3.13 and 6.23 of this document, the above-mentioned phrase relates to disposal as the final management step.	x	In the design of predisposal radioactive waste management facilities to be operated over a long period (e.g., radioactive waste storage facilities that remain at the site once the reactor has been permanently shut down)		For clarity
CAN	40	4.19	Also include hardening and damage of waste containment resulting from prolonged irradiation	Long-term irradiation will affect of storage materials and equipment.			x	Many other more common examples such as corrosion
FRA	8	4.19 and 4.20	Storage should be replaced by long- term storage or disposal		x			
GER3	28	4.20	1 st sentence: " the likelihood and consequences of loss, damage or	Consistency with the terminology used elsewhere in this document (compare	x	Records concerning the radioactive waste that		

	No	Para/Line	Proposed new text	Reason	Accept	Accepted, but modified	Reject	Reason for modification
		No.				as follow		
			deterioration due to unpredictable events such as fire, flooding or other natural or human initiated occurrences <u>induced hazards</u> ."	with Paras 6.76 (e), (f) and 6.85 (b)) as well as in the Safety Requirements NS- R-3 and subordinated Safety Guides.		need to be retained for an extended period should be stored such that the likelihood and consequences of loss, damage or deterioration due to unpredictable events such as fire, flooding or other natural or human induced hazards are minimized (e.g., principle of redundancy.		
GER2	29	4.20	Include new 3 rd sentence: " Storage arrangements for records should meet the requirements prescribed by the national authorities or the regulatory body and the status of the records should be periodically assessed. In general, records should be stored at two different sites which have no physical connection to each other (principle of redundancy). If records are inadvertently destroyed,"	It is a good practice when records concerning the generation, processing and storage of radioactive waste are stored, physically separated from each other, by both the operating organization and the regulatory body (or the national authority, depending on national regulations).		Paragraph revised	x	Avoid prescriptive detail
UK	50	4.20	"If any records are inadvertently destroyed, the records that survive are likely to become more valuable – operators should re-evaluate their records retention strategy in such circumstances."	The original wording may be misinterpreted, as asking for consideration to be given to deletion of the remaining records, in the event that a proportion of the pre-existing records are accidently destroyed.	x			
UK	78	5 Req. 14	Add "commissioning".	Active commissioning of a facility can generate radioactive wastes, so is			х	The text is a quote

	No	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
				relevant to this requirement.				
HUN	5	5 Req. 15	The documentation shall be clearly written and shall include arguments justifying the approaches taken in the safety case on the basis of information that is traceable.	The documentation shall be clearly written and shall include arguments justifying the approaches taken in the safety case on the basis of information that is traceable. The documentation should contain trends and safety goals.			x	The text is a quote
IRQ	8	5	Safety considerations in the design of predisposal waste management facilities for radioactive waste should be specified (such as ventilation systems, engineering shields, etc.)	Ensuring safety during operation of predisposal waste management facilities			X	Addressed in Ch 6
UK	82	5	This section could be made more concise and better targeted if it focused on issues specific to safe management of radioactive wastes.	The original text contains a significant amount of guidance that is generally applicable to all activities with nuclear matter and is adequately covered in other Safety Guides – e.g. All the stated Requirements are entirely general in their nature.	X	Section revised; see specific comments		
UK	83	5	This section could be strengthened by inclusion of some clearer advice on how to apply proportionality in safety assessments for radioactive waste management facilities.	Facilities involved in predisposal management of radioactive wastes handle wastes with a very broad range of hazards – these range from spent fuel to VLLW. Some of the described approaches would be disproportionate for those facilities that deal with relatively low hazard material.	x	Section revised; see specific comments		
GER3	30	5.01	2 nd sentence: "Requirements and guidance on the safety case and safety assessment for the predisposal management of radioactive waste is	Grammar.	x			

	No	Para/Line	Proposed new text	Reason	Accept	Accepted, but modified	Reject	Reason for modification
		No.				as follow		
			are provided in GSR Part 5 [4] and in the Safety Guide GSG-3 [29], respectively."					
CAN	42	5.03	Define short, medium and long term or change to "interim"	The use of short, medium and long term is vague. The definitions of what these periods are in terms of years, decades or hundreds of years should be included.	X	"Thus, long term aspects of"		
GER2	31	5.03	1 st sentence: "For waste generated within a reactor, the safety case should identify interfaces between the radioactive waste management facility and <u>operational</u> limits and conditions of the reactor."	Clarification.	x			
GER2	32	5.04	1 st sentence: "Long term storage of radioactive waste at the reactor site e.g. after the reactor has been decommissioned or <u>permanently</u> shut down, requires special consideration in the safety case and safety assessment"	Ensure consistency with our related proposals for Paras 3.27, 3.35 and 6.91 (e). The proposed insertion makes clear that we address here a state that is different from a temporary shutdown of the reactor.	x			
UK	51	5.04	Revise third sentence to; "The safety case should also consider degradation of engineered features and availability of maintenance and emergency response systems, changes to the stored waste and uncertainties in parameters and models used, including the anticipated timescales of storage."	It is important for operators to make conservative assumptions regarding the length of time radioactive wastes need to be stored.	X			
UK	52	5.05	Delete	This paragraph is not specific to the management of radioactive wastes.	х			

	No	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
		10.		The original text also gives the impression that a safety case is prepared mainly for the benefit of the regulator (and other parties), whereas in truth it is the means by which the operator can demonstrate that it is carrying out its work with an adequate degree of safety.				
UK	53	5.05 line 1	If this paragraph has to be retained, it should start with: The primary purpose of the safety case is to inform and assure management and operating staff of the safety of its operations and to identify all necessary limits and conditions. It is also one input to the licensing documentationetc	The proposed text puts too much emphasis on the safety case being prepared for the purposes of the regulator, whereas the primary application should be that of the operator. It may not necessarily be the primary input to the licensing documentation. There are many other aspects to licensing.		Paragraph deleted	X	See UK comment 52
GER1	33	5.05	Include new 2 nd sentence: "The safety case and supporting safety assessment should provide the primary input to the licensing documentation required to demonstrate compliance with regulatory requirements. <u>Both should</u> <u>be sufficiently detailed and</u> <u>comprehensive to provide the</u> <u>necessary technical input for</u> <u>informing the regulatory body and for</u> <u>informing the decisions necessary at</u> <u>each step.</u> An important outcome"	This is a beneficial amendment to specify the meaning and role of the safety case and the supporting safety assessment to be used at each step of development of a facility for the predisposal management of radioactive waste. With regard to this proposal, see also the IAEA resolution table of WASSC members comments on DS448 (June 2013), comment No. 4 provided by Korea. This comment has been accepted but not implemented in DS448 (however, in DS447 it is part of Para 5.5).		Paragraph deleted	X	See UK comment 52

	No	Para/Line	Proposed new text	Reason	Accept	Accepted, but modified	Reject	Reason for modification
		No.				as follow		
GER3	34	5.06	" however, in the event that a dis- posal option does not exist, <u>reasonable</u> assumptions should be made about the likely disposal options and these should be set down clearly."	Wording.	x			
GER3	35	5.07	"The safety case should include identification of uncertainties in the performance of the waste management <u>facility and related</u> activities, analysis of the significance of the uncertainties, and identification of approaches for the management of significant uncertainties. Such uncertainties should be a focus of an examination of the interdependences between the boundaries of interlinking safety cases. <u>Guidance on</u> <u>the management of uncertainties is</u> <u>provided in GSG-3 [29].</u> "	 1st sentence: Clarification and completion. Compare with e.g. Para 4.6 (third bullet and last but one bullet) of GSG-3. last sentence: Include reference to GSG-3 in order to guide the reader of this document. 	X			
BEL	7	5.07	"The safety case uncertainties. Such uncertainties should be a focus of an examination by the regulator of the interdependences between the boundaries of interlinking safety cases.	In the case of different licensed owners in the same neighbourhood or area, it should be looked at by the regulator.	X			
GER3	36	5.08	1 st sentence: "Appendix 2 provides examples of hazards associated with typical <u>activities for the</u> predisposal management of radioactive waste activities within from nuclear reactors."	Wording.	X			
JAP	E2	5.08 Line 3	GSG-3 (Annex 1) [29]also provides examples of hazards	Editorial	X			

	No	Para/Line No. (p.21)	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
UK	54	5.08	Re-word first sentence to: "Appendix 2 provides examples of hazards associated with typical predisposal management of radioactive wastes associated with nuclear reactors."	The original text uses the phrase "within reactors" – some readers may not appreciate that many of the radioactive wastes that arise from the operation of reactors are sourced from supporting processes (e.g.; effluent treatment, filters from HVAC systems) rather than from within the reactor itself.	x	See Germany comment 36		
CAN	41	5.10	reasonably practicable measures have to be taken to upgrade the safety of the facility.	"have" or "are" should be deleted.	х			
UK	55	5.10	Re-word third sentence to: "In such circumstances, reasonably practicable measures should be taken to maintain adequate safety of the facility".	The original text uses poor wording.	х			
GER1	37	5.10 after	In the subsection "Safety case and safety assessment", add a new paragraph 5.11 with the following text: "Variation and uncertainty in the form and composition of the waste is a particular challenge for some types of legacy waste for which the accuracy and completeness of historical records may be limited. Therefore, safety assessments for the predisposal management of legacy waste should be performed in a comprehensive and detailed manner."	This is another important aspect which is worth mentioning in the context of this subsection. Due to possibly insufficient documentation and knowledge, legacy waste needs to be assessed with particular care. The radioactive waste foreseen for retrieval from the Asse II repository mine in Germany is a prominent example. During the period of waste emplacement in the Asse II mine, no national or international classification system for radioactive waste existed. The waste was categorized mainly against the background of its handling (e.g. dose rate at the cask surface; the	X			

	No	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
				activity inventory served only a a rough guide).				
HUN	6	5.12	Point 5.12. is empty		Х	deleted		
JAP	E4	5.12 (p.21)	Delete this paragraph number unless there is an additional guidance.	Editorial	Х			
UK	56	5.12	Insert section on Safety Assessment as in DS447	Appears to be missing	х	Section has been restructured to focus on relevant RWM aspects		
IRQ	9	6	A description of the Waste Characterization Methods and Procedures will be required. Inclusion of recommended waste acceptance criteria will be helpful.	To be used as a guideline to the Member States.			x	Ch 6 provides guidance on characterization App 3 provides key properties and characteristics of waste packages Not intended to go into this level of detail
UK	57	6	Please consider whether it is truly necessary to have separate sub- sections covering power reactors and research reactors.	The principals and standards applied to the management of radioactive wastes should focus on the inherent properties of the waste and the hazard presented to human health and the environment, irrespective of whether a power reactor or research reactor.			x	Paragraphs provide useful information
AFG	3	6.01	 Accept all the steps, but few are missing Immobilization Decommissioning of Nuclear facility. 	These two are essential and fundamental steps during waste pre- disposal.			Х	Immobilization is part of conditioning and decommissioning is not part of predisposal management
CAN	43	6.01 3 rd bullet	Add waste generation, control and handling	Not currently covered			Х	
FRA	9	6.01	Characterization of waste, waste form and waste package should be	In accordance with IAEA recommendations	Х	Addressed in para. 6.2		

	No	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
			mentioned because IAEA recommends to perform characterization at all steps of predisposal activities (when relevant, of course).					
UK	58	6.01	Add new bullet point: - Waste assay and characterisation	Waste assay and characterisation is a necessary first step in order to inform all the subsequent steps.			X	Term is defined in Ch 1 (consist w GSR Part 5) Waste is characterized & classified throughout its management
CAN	44	6.02 2 nd sent.	'the radioactive waste should be characterized and classified at various steps of its'	To be consistent with 1 st sentence and Requirement #9	x	Sentence changed to: "Therefore the radioactive waste should be characterized and classified at the various steps of its predisposal management, as necessary."		
GER2	38	6.02	1 st sentence: "At various steps it should be verified that the waste complies compliance with waste acceptance criteria requirements for the following step(s) has to be dem- onstrated."	Clarification.	X	Changed "criteria" to "requirements", but sentences not combined.		
CAN	45	6.03 1 st sent.	The ultimate goal of radioactive waste processing	"of" missing	Х			
GER3	39	6.03	1 st sentence: "The ultimate goal <u>of</u> radioactive waste processing is to make the waste suitable for disposal"	Editorial (missing word).	X			
			3 rd and 4 th sentence: " with the	The last two sentences are already part		See Finland comment 3		

	No	Para/Line	Proposed new text	Reason	Accept	Accepted, but modified	Reject	Reason for modification
		No.				as follow		
			waste acceptance requirements of the disposal facility. At various steps it should be verified that the waste complies with applicable acceptance	of Para 6.2. Avoid unnecessary repetition.				
			requirements. Therefore the waste has to be characterized and classified throughout the steps of its management."					
CAN	46	6.03 4 th sent.	'the waste should be characterized and classified at various steps of its management.'	To be consistent with 3 rd sentence and Requirement #9	Х	See Finland comment 3		
ENISS	10	6.03	At various steps <u>, when necessary</u> , it should be verified that the waste complies with applicable acceptance requirements. Therefore the waste has to be characterized and classified <u>as appropriate</u> throughout the steps of its management.	There is no necessity to do it at each step	х	See Finland comment 3		
FIN	3	6.03 P. 22	The ultimate goal radioactive waste processing is to make the waste suitable for disposal (or for storage if no disposal facility is available). This implies that the final waste form has to comply with the waste acceptance <i>and long-term operational safety</i> requirements of the disposal facility. At various steps it should be verified that the waste complies with applicable acceptance requirements. Therefore the waste has to be characterized and classified throughout the steps of its	Also the long-term operational safety aspects shall be taken into account. For example the waste forms harmful to engineering barrier systems, such as concrete vaults, of the disposal facility shall be avoided.	X			

	No	Para/Line	Proposed new text	Reason	Accept	Accepted, but modified	Reject	Reason for modification
		No.				as follow		
			management.					
BEL	8	6.03	"The ultimate goal radioactive waste processing is to make the waste suitable for disposal (or for storage if no disposal facility is available). This implies that the final waste form has to comply with the <i>operational and</i> <i>long term</i> waste acceptance requirements <i>criteria</i> of the disposal facility. At various steps it should be verified that the waste complies with the applicable (<i>anticipated – if no</i> <i>disposal option is yet available</i>) acceptance requirements <i>criteria for</i> <i>disposal</i> . Therefore the waste has to be characterized and classified throughout the steps of its management, <i>preferentially already at</i> <i>the generation of the radioactive</i>	The WAC for disposal shall be based on operational and long term safety (of each step); these WAC will be affected by/based on the acceptance criteria for each intermediate step in the waste management cycle (taking into account all interdependencies)	x	Paragraph changed, see comments by Canada, ENISS, Finland and Germany		
UK	59	6.03	waste." Delete from the first sentence "(or for storage if no disposal facility is available)".	The ultimate goal for processing is never storage, even when a disposal facility is not presently available. This statement is inconsistent with requirements elsewhere in the report which states the operator should consider disposability even when a disposal system does not currently exist.	X	Paragraph changed, see comments by Canada, ENISS, Finland and Germany	x	
UKR- NRS	6	6.03 P. 22 Line 1	Management options such as <u>clearance for</u> recycling, reuse	Recycling and reuse are the options of clearance.	Х	"clearance (including for recycling or reuse)"		Clarity
UK	60	6.04	Amend the paragraph to make it	A key point is that the options of	Х	"with preference given		

	No	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
			clearer that of the quoted approaches, recycling and re-use are preferable to final disposal.	recycling, re-use and decontamination are preferable to final disposal on the grounds of waste minimisation. The proposed text gives no indication of the relative merits of the quoted options. In the UK we present the options and the naturally preferred order in a 'waste hierarchy'.		to clearance for recycling and reuse"		
GER3	40	6.05	2 nd sentence: "Requirements and guidance on transport of radioactive waste can be found in SSR-6 [9] and TS-G-1.1 [27, -33]."	Wrong reference number is cited.	Х			
FRA	10	Req. 08	Requirement 8: shall be identified, characterized and controlled				х	Quote from GSR Part 5
JAP	E3	Req. 08 (p.22), Req. 09 (p.25), Req.10 (p.27), Req.11,12 (p.33), Req.17 (p.34), Req.18,19 (p.37), Req.20 (p.39)	Add "(GSR Part 5, Ref. [4])" to after requirement number.	The description "(GSR Part 5, Ref. [4])" is missing.	x			
UK	61	6.07 (B)	"The selection of design options that facilitate waste minimization throughout the facility's entire lifecycle, including its final	Plant design can have an important impact on waste minimization during the operational phase of a facility's life, as well as during decommissioning.	Х			

	No	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
			decommissioning."					
UK	62	6.07 (E)	"Adequate zoning to prevent contamination spread"	Zoning in itself does not "prevent contamination" as stated in the original text. Instead it can help prevent <i>the</i> <i>spread</i> of contamination.	Х			
CAN	47	6.07 (e) and (f)	During the design of the reactor, consideration should be given to operational features for waste generation and control, including the following aspects: (e) Adequate zoning to prevent the spread of radioactive contamination; (f) Provisions for the decontamination of zones and equipment to prevent the spread of radioactive contamination.	Addition of text in (e) and (f) to clarify what aspects should be considered.	X			
RUS	4	6.07-6.09	WASTE GENERATION AND CONTROL : This section is expedient to be supplemented by the following provision and corresponding recommendations: "Minimization of radioactive waste generation should be provided through facility lifetime by means of process and materials selection, construction methods, commissioning, operational and decommissioning arrangements."	Minimization of radioactive waste generation should be provided not only during design stage by design and engineering measures but through facility lifetime (siting, construction, operation and decommissioning).	Х	Incorporated into bullet (a)		
GER2	41	6.08	1 st sentence: "The principle of waste generation and control should also be a factor for consideration in the selection of approaches to storage and	It should be a general objective to reduce the volumes and activities of the secondary waste streams that arise from the various steps in the	Х			

	No	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
			processing, in order to minimize the generation of secondary radioactive waste resulting from predisposal management activities."	predisposal management of the primary waste streams. This intention is emphasized by the proposed insertion.				
GER2	42	6.08	Include new 3 rd sentence: " Examples of processing steps for which this principle should be considered include the selection of conditioning processes and the testing programme invoked to verify treatment and conditioning processes. For the qualification of a conditioning process, the testing programme should be designed in such a way that the number of test specimens using actual radioactive waste is minimized. For a conditioning process in which components become contaminated, equipment of proven longevity should be used."	The principle of keeping the volume of radiaoactive waste to the minimum practicable should also be applied to the qualification of a conditioning process and the associated testing programme. Note that the proposed recommendation is provided in DS447 (see Para 6.7) but is likewise relevant for DS448.	X			
CAN	48	6.09 line 1	Suggest reword to 'Pretreatment operations including segregation should be carried out to optimize the disposal route. Decontamination and/ or a sufficiently long period of storage to allow for radioactive decay should be used where appropriate to allow reclassification of the waste at a lower level or enable regulatory control to be removed from the waste.'	Decay doesn't always allow regulatory control to be removed	x			
CAN	49	6.10 - 6.12	Recommend to use bullet form	Should be similar to 6.13 to 6.15	х			

	No	Para/Line	Proposed new text	Reason	Accept	Accepted, but modified	Reject	Reason for modification
		No.				as follow		
GER1	43	6.12, 6.15 (g), 6.48, 6.72 (g)	Note: With regard to the categorization of spent ion exchange resins, there are several inconsistencies in this document. In Paras 6.12 and 6.15, the resins are considered as typical source of <u>solid</u> waste generated during the operation of a nuclear reactor. Para 6.48, however, states that spent ion exchange resins are usually flushed out as slurry and subsequently managed as <u>liquid</u> waste. This statement, in turn, is not consistent with Para 6.72 which recommends provisions for storing spent ion exchange resins as a measure to be considered in the design for the management of <u>solid</u> waste.	Clarification is required throughout the document. According to the IAEA publications TECDOC-1504 "Innovative waste treatment and conditioning technologies at nuclear power plants" (2006) and TECDOC-1579 "New developments and improvements in processing of 'problematic' radioactive waste" (2007), spent ion exchange resins are managed as liquid (wet) waste. During the NPP operation, contaminated ion exchange resins emerge in several processes (e.g. cleanup system for the primary coolant, decontamination of water from spent fuel cooling ponds). Spent ion exchange resins are usually sent to liquid waste storage facilities where they are kept underwater for some time period for interim storage, allowing for decay of short-lived radionuclides. Before transferring to (long term) storage, these resins are subject to processing that consists in conditioning and volume reduction of radioactive waste sent for disposal.	X	Moved to Liquid Wastes and footnote added for clarification.		To be discussed w WASSC
UKR- NRS	7	6.12, 6.15 (g)	Spent ion exchange resins are defined as solid radwaste. As a rule, spent ion exchange resins are referred to as liquid radioactive waste.	Need to be explained referring to ¶ 6.48 to avoid misunderstanding.	Х	See Germany comment 43		
CAN	50	6.16	'characterized at various stages'	Remove "the" which implies it must be	Х			

	No	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
		1 st sent.		characterized at each stage				
GER2	44	6.16	" <u>As stated in GSR Part 5 [4], r</u> Radio- active waste is required to be characterized at the various stages in its <u>predisposal</u> management to obtain information on its properties"	In a Safety Guide, usually recommendations (or "should" statements) are provided. Modify wording to emphasize that a requirement (or "shall" statement) is cited here.	X			
CAN	51	6.17	Include 'waste form (solid, liquid and gaseous)' in the list	Not currently noted	Х			
RUS	5	6.17	(a) Its origin, <i>amount, type, category</i> and physical state;	Amount, type, category and physical state (liquid, solid, gaseous) are important characteristics			X	Already addressed in bullet (e)
RUS	6	6.17	(d) Other physical properties (e.g. size and mass, compactibility, <u>solubility</u>);	<u>Solubility</u> seems to be not physical property	Х	Moved to "Chemical Properties"		
RUS	7	6.17	(c) Its radiological properties (e.g. <i>radionuclide inventory</i> , dose rates);	Term "radionuclide inventory" cover half-life, activity and concentration of nuclides			Х	Already addressed in bullet (d)
RUS	8	6.17	(e) Chemical properties (e.g. corrosion properties (hazard));	To be exact, it is the corrosive activity of waste which should be considered, i.e. the capability of waste to cause corrosion	Х	Changed to "corrosiveness"		
UK	63	6.17 (c)	Add heat generation to list in parenthesis	Omission	Х			
JAP	1	6.18 Line 1 (p.25)	Comment. Add the following contents to the document; "It is also important to characterize waste during the operational period in	It is also important to characterize waste during the operational period in terms of the decommissioning. Measurement and evaluation using analysis, which can apply during the operational period, will need to be	x	Added to end of para.: " particularly with respect to facility decommissioning"		
			terms of the decommissioning."	collected as records. For instance, measurement and evaluation of the neutron flux density,				

	No	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
				which needs activation evaluation for structures and components including the reactor core, will be recorded.				
UKR- NRS	8	6.18	Add a new phrase after the last sentence. Note that the priority has to be given to characterization of raw waste at the point of its generation prior to processing.	To avoid the necessity of waste reconditioning at further stages.	X	Added to end of 6.19		
AFG	5	6.18 After new ¶	Radioactive Waste from Research Reactors: Where necessary, provision should be made for an interim containment in areas where radioactive effluent or radioactive waste is stored prior to its treatment and discharge. The design should be such as to ensure adequate flexibility of the facilities for handling radioactive waste to cope with faulty containers and radioactive waste of non-standard physical or chemical composition. The design should be such as to minimize the generation of radioactive waste in all operational stages in the lifetime of the facility, including decommissioning. Such considerations should be compatible with the safety analysis and with regulatory limitations on radiation doses . The design should incorporate features that facilitate the safe handling, storage, transport and	A brief introductory to radioactive waste from Research Reactors.	X	Modified and added to sections on Storage, and Siting and Design		

	No	Para/Line	Proposed new text	Reason	Accept	Accepted, but modified	Reject	Reason for modification
		No.				as follow		
			disposal of radioactive waste and the control of effluent discharges. The design should include provisions for the safe management of solid, liquid and gaseous radioactive waste within the facility and in associated experimental devices. Provisions for the storage of waste in transit and for the removal of waste should also be considered.					
UK	64	6.19 line 8	Replace "approved by" with "acceptable to"	The word "approval" has specific meaning in the UK regulatory system and would not normally be applied to waste characterization	Х			
AFG	6	6.19 Before new topic	DESIGN FEATURES FOR RADIOACTIVE WASTE MANAGEMENT General The design should incorporate features that facilitate the safe handling, storage, transport and disposal of radioactive waste and the control of effluent discharges. The design should include provisions for the safe management of solid, liquid and gaseous radioactive waste within the facility and in associated experimental devices. Provisions for the storage of waste in transit and for the removal of waste should also be considered. Where necessary, provision should be made for an interim containment in	For the sake of comprehensive concept of Design Features of Radioactive Waste Management. And figure out the responsibilities for the radioactive waste Managers.	X	Modified and added to sections on Storage, Siting and Design, and Operation		

٢	No Para/L	ine Proposed new text	Reason	Accept	Accepted, but modified	Reject	Reason for modification
	No.				as follow		
		areas where radioactive effluent or					
		radioactive waste is stored prior to its					
		treatment and discharge.					
		The design should be such as to					
		ensure adequate flexibility of the					
		facilities for handling radioactive					
		waste to cope with faulty containers					
		and radioactive waste of non-standard					
		physical or chemical composition.					
		The design should be such as to					
		minimize the generation of radioactive					
		waste in all operational stages in the					
		lifetime of the facility, including					
		decommissioning. Such considerations					
		should be compatible with the safety					
		analysis and with regulatory					
		limitations on radiation doses.					
		Measures deployed in research					
		reactors of different types include the					
		following:					
)a)Selection of materials that do not					
		activate easily (e.g. use of plastic for					
		the pneumatic 'rabbit' system					
		irradiation target carriers) or materials					
		that decay quickly when activated (e.g.					
		use of aluminum components near					
		the core;(
)b)Making allowance for the thermal					
		expansion and contraction of pool					
		water in a manner that avoids or					
		minimizes over flow to liquid retention					
		tanks;					

No	Para/Line	Proposed new text	Reason	Accept	Accepted, but modified	Reject	Reason for modification
	No.				as follow		
)c)Minimization of air spaces near					
		neutron sources to reduce the					
		production of 41Ar .The following					
		features for limiting radiation					
		exposure due to the radioactive waste					
		generated during operation of the					
		facility should be considered in the					
		design:					
)a)Provisions that reduce the quantity					
		and concentration of the radioactive					
		waste generated and transported					
		within the facility or released to the					
		environment;					
)b)Provisions for the isolation of					
		radioactive waste from site personnel					
		and the public, with access control.					
		For example, this might be					
		accomplished by zoning the facility in					
		accordance with the potential for					
		radioactive contamination and					
		radiation exposure;					
)c)Provisions for local detection,					
		collection and treatment of liquid					
		spills before they are discharged as					
		effluents;					
)d)Provisions for the decontamination					
		of personnel and equipment;					
)e)Provisions for handling the					
		radioactive waste arising from					
		decontamination activities					
		The extent to which the containment					

	No	Para/Line	Proposed new text	Reason	Accept	Accepted, but modified	Reject	Reason for modification
		No.				as follow		
			or the means of confinement is vented in operational states to prevent the buildup of radioactive gases should be addressed in the design. The varying nature of the waste both					
			as waste accumulates and as the circumstances that influence the characteristics of the waste vary should be taken into account in the design of the shielding and containment.					
AFG	7	6.20 after part (b) add new one	proper selection of process gases and decay devices (e.g. the use of delay tanks for 16N or retention tanks) to minimize releases of radioactive material;	This will reduce the release rate of Gaseous Radioactive Waste into the Environment.	X	Added to para 6.68 (section on design)		
BEL	9	6.20	"An important objective of radioactive waste processing is to produce waste packages that can be handled, transported, stored and disposed of safely. In particular, radioactive waste should be conditioned to meet the acceptance requirements criteria for its disposal. In order to provide reasonable assurance that the conditioned waste can be accepted for disposal, although there may not yet be any specific requirements/criteria, options for the future management of radioactive waste and the associated waste acceptance requirements	Requirements are different from criteria (. See IAEA Radioactive Waste Management Glossary): A Requirement is something essential to the existence or occurrence of something else, while A criterion is a standard on which a judgment or decision can be made! Requirements can be part of a license condition; acceptance criteria should be based on these requirements and should be proposed by the waste management organization to the regulatory body.		Para deleted	x	See Germany comment 45

	No	Para/Line	Proposed new text	Reason	Accept	Accepted, but modified	Reject	Reason for modification
		No.				as follow		
			criteria should be anticipated as far as					
			possible. The waste acceptance					
			requirements criteria may be met by					
			providing an overpack that is tailored					
			to the specific conditions of the					
			disposal facility and to the					
			characteristics of the radioactive					
			waste and the engineered					
			components of the disposal facility. "					
CAN	52	6.20	"Radioactive waste, for instance, may	Not all radioactive waste will require		Para deleted	х	See Germany comment 45
		2 nd sent.	be conditioned to meet the	conditioning, therefore the use of				
			acceptance"	"may" is more appropriate				
GER3	45	6.20	Note: Almost the same text is	Avoid unnecessary repetition. In our	Х			
			provided in Para 6.63 (3 rd to 6 th	opinion, the text is better placed in the				
			sentence). Shortening or deletion of	subsection "Radioactive waste				
			Para 6.20 is recommended.	acceptance criteria".				
UK	65	6.21	Ditto	Ditto	Х			
AFG	8	6.22	proper selection of process gases and	This will reduce the release rate of Liquid	Х	Added to section on		
		after part	decay devices (e.g. the use of delay	Radioactive Waste into the Environment.		Design		
		(f) add	tanks for 16N or retention tanks) to					
		new part	minimize releases of radioactive					
			material;					
GER2	46	6.22	2 nd sentence: "Segregation of waste	According to the IAEA Safety Glossary	Х			
			with different properties will also be	(2007 Edition), the term 'processing' is				
			helpful at any stage between the	more comprehensive and includes				
			arising of the raw waste and its <u>further</u>	'pretreatment', 'treatment' and				
			processing conditioning, storage,	'conditioning'. As mentioned in Para				
			transport and disposal."	6.32, segregation of radioactive waste is				
				part of pretreatment operations.				
AFG	9	6.24 (f)	at the end add this line.				х	Document has since been
			"segregating waste by type (amount,					modified
			form, volume, isotopic composition					

	No	Para/Line	Proposed new text	Reason	Accept	Accepted, but modified	Reject	Reason for modification
		No.				as follow		
			and activity concentration"					
AFG	4	6.26 After	The volume of organic radioactive	Aqueous waste may be discharged to the	Х	Para modified and added		Document has since been
		new ¶	liquid waste is small compared to that	environment after the radioactivity has		after 6.54		modified
			of aqueous radioactive waste although	decayed or been removed by treatment.				
			the risk associated with its improper	By contrast, organic liquids generally				
			management may be high. Organic	cannot.				
			radioactive waste requires					
			management steps that not only take					
			account of its radioactivity, but also of					
			the chemical organic content since this					
			can also have detrimental effects on					
			the environment. The "dilute and					
			disperse" option applied for some					
			aqueous and gaseous waste is					
			inappropriate for organic liquid waste.					
			Treatment of large amount of					
			radioactive liquid organic is					
			technology intensive as well costly.					
			The treatment steps of organic liquid					
			waste, incineration, emulsification to					
			facilitate encapsulation into cement,					
			absorption into matrix, distillation and					
			wet oxidation.					
RUS	9	6.28	Mixing waste streams with other	Supplements of clarifying and	Х	Mixing waste streams		
			radioactive or non-radioactive wastes	complementary nature.		should be limited to		
			(or materials) to facilitate subsequent			those streams that are		
			management or for safety			radiologically and		
			considerations should be limited to			chemically compatible.		
			those streams that are radiologically			If the mixing of		
			and chemically compatible.			chemically different		
			Mixing of waste streams with			waste streams is		
			dissimilar or incompatible properties			considered, an		

	No	Para/Line	Proposed new text	Reason	Accept	Accepted, but modified	Reject	Reason for modification
		No.				as follow		
			should be prevented.			evaluation should be		
			Mixing of waste (e.g., concentration			made of the chemical		
			averaging) at the generating source			reactions that could		
			may be allowed by certain State			occur, especially any		
			regulatory authorities in order to			exothermic reactions in		
			achieve specific waste acceptance			order to avoid		
			requirements.			uncontrolled or		
						unexpected reactions		
						that could cause the		
						unplanned release of		
						volatile radionuclides or		
						radioactive aerosols.		
CAN	53	6.29	Change 'will' to 'may'	Each step may not always be required,	Х			
		line 3		depending on the facility. i.e., may go				
				straight to disposal				
GER3	47	6.29	1 st sentence: "The processing <u>of</u>	Editorial (missing word).	Х			
			radioactive waste may include one or					
			more steps"					
FIN	4	6.30	If no disposal facility is available,	Addition. The use of large components	Х			
		P. 27	assumptions should be made on the	as a package is one option which shall				
			requirements for the acceptance of	be mentioned here. For example during				
			the waste for disposal in order to	the decommissioning of nuclear				
			provide guidance for its processing,	reactors it is sometimes reasonable to				
			which may include provisions for long-	dispose of large component without				
			term storage. In some cases, the large	cutting them into smaller pieces or				
			components (such as reactor pressure	packing them into containers. This				
			vessel, steam generators or other	option shall be mentioned in this				
			large vessels) may be used as a	document since it is one way to reduce				
			package itself.	doses to the personnel and it's also				
				sometimes the most economical option.				
GER3	48	6.30	2 nd sentence: "If no disposal facility is	Wording.	Х			
			available, reasonable assumptions					

	No	Para/Line	Proposed new text	Reason	Accept	Accepted, but modified	Reject	Reason for modification
		No.				as follow		
			should be made on the requirements for the acceptance of the waste for disposal in order to provide guidance for its processing,"					
UK	66	6.30	"Predisposal management of radioactive waste can either facilitate the recycling and re-use of waste items, or produce conditioned waste suitable for subsequent handling, storage, transport and disposal."	The originally proposed text overlooks the possibility of recycling and re-use.	X			
BEL	10	6.31	"Radioactive waste should be processed as early as practicable in order to convert it <i>in an optimized way</i> into a passively safe state and to prevent its dispersal during storage and disposal."	Optimization is part of nuclear safety; the best time, place,of processing, treatment, in the whole radwaste management cycle should be looked at right from the beginning.	X			
ENISS	11	6.31	" in order to convert it into a passively safe waste form and to prevent"	Correct terminology	X			
FIN	5	6.31 P. 28	Radioactive waste should be processed as early as practicable taken into account different aspects, such as safety, security, doses and economy in order to convert it into a passively safe state and to prevent its dispersal during storage and disposal, which may include provisions for long term storage.	The time for processing the waste shall be selected in such a way that it is optimal from the whole waste management chain point of view. The optimization shall take into account different aspects, such as safety, security, doses and economy.	x			
FRA	11	6.31	" in order to convert it into a passively safe state waste form and to prevent"	Correct terminology	x			
UK	67	6.31	Please add further guidance, or a	It is likely that some readers will not	Х	Inserted "[10]"		Safety Guide on Storage of

	No	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
			reference to further guidance in another document, on the concept of passive safety.	have a full appreciation of what is meant by the term "passive safe state".				RW contains guidance on passive safety irt RW
UK	68	6.31	Add, "The balance between potential mobility of the waste, ALARP considerations and operational impact should be part of the consideration."	To provide further guidance on the factors that should be considered.	X	ALARP replaced with radiation protection		
GER2	49	6.32	1 st sentence: "Pretreatment operations may result in a reduction in the amount of waste needing further processing, treatment, conditioning, storage and disposal."	According to the IAEA Safety Glossary (2007 Edition), the term 'processing' includes 'pretreatment', 'treatment' and 'conditioning' of radioactive waste. After pretreatment operations have finished, treatment and conditioning are remaining.	x			
GER3	50	6.33	2 nd sentence: "Radioactive waste containing predominantly short-lived radionuclides should not be mixed with long lived waste containing long- lived radionuclides."	Wording.	X			
CAN	54	6.34 line 2	Change 'is' to 'can be'	Segregation may be based on other factors – radiological, chemical or physical properties.	X			
AFG	10	6.37	Explanation required regarding chemical adjustment, size reduction, packaging and decontamination.				Х	Covered in para's 6.41-58 Any greater level of detail is more appropriate to a TECDOC
CAN	55	6.37 line 3	Change 'release the' to 'discharge'	Reads better	Х			
CAN	56	6.37 line 4	Change 'processed' to 'treated'		Х			
GER3	51	6.37	last sentence: "To the extent possible, liquid waste should be processed and	Completeness with regard to the further steps involved in the	Х			

	No	Para/Line	Proposed new text	Reason	Accept	Accepted, but modified	Reject	Reason for modification
		No.				as follow		
			conditioned (e.g., adsorption,	management of radioactive waste.				
			immobilization, etc.) to promote safe					
			handling, storage and disposal."					
FRA	12	6.38	Add Mixing waste streams should		Х	"Mixed waste streams		
			conduct to waste compatible with the			should be compatible		
			waste acceptance criteria of the waste			with the waste		
			facility (predisposal waste facility,			acceptance criteria of		
			storage, disposal			the waste management		
						facility (e.g., processing,		
						storage, or disposal)."		
UK	69	6.38	Second sentence - "If the mixing of	If exothermic reactions arise, they may	Х	Added as (e.g.,		
			chemically different waste streams is	create the risk of a nuclear fire.		exothermic)		
			considered, an evaluation should be					
			made of the chemical reactions that					
			could occur, especially exothermic					
			reactions"					
UK	71	6.39	Insert additional bullet: <u>"Change of the</u>	Omission – this is included in the draft	Х			
			properties of the waste (by	DS447.				
			solidification, embedding or					
			encapsulation; common					
			immobilization matrices include					
			<u>cement, bitumen and glass)."</u>					
UK	70	6.39 (c)	Insert "form or" before "composition"	Not all the processes change composition.	Х			
CAN	57	6.39-6.53	Treatment	Limited list – as an example thermal	Х	Preceding text changed		
			Suggest including other examples or	treatment options, and		to "(e.g.," to clarify		
			making sure it is noted that these are	supercompaction for volume reduction		that these are simply		
			only some of the methods	have not been considered		some examples		
FRA	13	6.40	This para contains two sentences		Х	Separated into new		
			addressing different topics. Two			paragraph		
			different paras would be better					
GER2	52	6.42	last sentence: "It should be noted that	Clarification.	Х			

	No	Para/Line	Proposed new text	Reason	Accept	Accepted, but modified	Reject	Reason for modification
		No.				as follow		
			incineration will result in the increase of the activity concentration <u>levels in</u> <u>the ash</u> which might result in a change of the waste class."					
GER1	53	6.47	Include new last sentence: " If the waste contains fissile material, the potential for criticality should be evaluated and eliminated to the extent practicable by means of design features and administrative safety measures [34]. <u>Conditions of optimum</u> <u>moderation and reflection should be</u> <u>considered in the determination of</u> <u>safe configurations of radioactive</u> <u>waste and in the development of</u> <u>operating procedures.</u> "	 In the criticality safety assessment of liquid waste containing fissile material, conditions of optimum moderation and reflection should be taken into account for the following reasons: 1.) The presence of neutron moderating materials can significantly reduce the critical mass of the fissile material. 2.) The presence of neutron reflecting materials can increase the neutron multiplication factor of the system. Note that the proposed recommendation is provided in DS447 (see Para 6.39) but is likewise relevant for DS448. 	x			
JAP	2	6.48	Comment: We understand that there		Х	See Germany comment		To be discussed w WASSC
		(p.31)	is a same sentence "spent ion exchange resins are usually flushed out as slurry and <u>subsequently managed</u> <u>as liquid waste</u> " on para. 5.27 in WS-G- 2.5., we would like to know which country manages spent ion exchange resins as liquid waste.			60		Typical activity in countries operating WWER reactors
FRA	14	6.53	Radioactive particulates and aerosols in gaseous effluents shall be"	Expert judgment			Х	guidance
UK	72	6.53 After	Add an additional Para: <u>"For both</u> liquid and gaseous discharges the	Omission	Х			

	No	Para/Line	Proposed new text	Reason	Accept	Accepted, but modified	Reject	Reason for modification
		No.				as follow		
			arrangements should be identified for					
			dose assessment and any necessary					
			workplace monitoring in relation to					
			the exposures resulting from the					
			accumulation of the waste, the					
			discharge of the waste and to any					
			groups at particular risk as a result of					
			<u>the discharge"</u>					
ENISS	12	6.54	", the enclosure of the waste form	Correct terminology	Х			
			in a container"					
FRA	15	6.54	", the enclosure of the waste form	correct terminology	Х			
			in a container"					
CAN	58	6.57 (e)	Remove "for the required period of	It is not known how long each waste			х	Part of the waste package
			time"	matrix will last.				design and facility WAC
RUS	10	6.58	Required characteristics of form of	Editorial note	Х			
			solid waste should be considered on a					
			case by case basis					
FIN	6	6.59	It should be taken into account that	Addition to text.	Х			
		P. 32	certain metals, such as aluminum,					
			magnesium and zirconium, could react					
			with, for example, the alkaline water					
			of cement slurry or water diffused					
			from a concrete matrix, to produce					
			hydrogen. In addition, some metal					
			particles like zirconium can be					
			flammable when the particle size/					
			surface area and environment is					
			favorable. Chelating agents, organic					
			liquids or oil and salt content in liquid					
			waste may also be of concern in the					
			conditioning process.					
UK	73	6.62	Suggest including key points	It is not clear why references are given	Х	Key points added		

	No	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
				for the 'storage of radioactive waste', rather than the key points as has been done in other sections e.g. 'processing of radioactive waste'. The approach seems to be inconsistent.				
UK	77	Req. 12 Page 33	The word "unpacked" should be changed to "unpackaged"	To agree with wording in GSR Part 5	Х			
GER3	54	6.64	last sentence: "Subsequent to approval by the regulatory body, this programme should be implemented as a measure to confirm fulfilment of the <u>compliance with</u> the waste acceptance requirements criteria of the disposal facility."	Wording. The corresponding subsection is entitled "Radioactive waste acceptance criteria". Maintain consistency with regard to terminology.	x			
UK	74	6.64	Delete 2 nd sentence and words "In addition"	Acceptance criteria have been mentioned elsewhere. Approval of the conditioning process by the regulator is inappropriate for certain regulatory systems such as that which exists in the UK	X			
ENISS	13	6.66	"material" is unclear		Х	Changed to "waste"		
FRA	16	6.66	"material" is unclear		Х	See above		
GER2	55	6.66	"Adequate techniques need to should be in place to identify the characteristics of the material in order to demonstrate that it is consistent with the safety case and that it meets the waste acceptance criteria for the subsequent step(s) in the waste management process."	Clarification. As stated in Requirement 12 of GSR Part 5, waste packages that are accepted for processing, storage or disposal shall conform to criteria that are consistent with the safety case.	x			
HUN	7	6.66	Adequate techniques need to be in place to identify the characteristics of	It should be more detailed.	Х	See above comment 55 GER2		

	No	Para/Line	Proposed new text	Reason	Accept	Accepted, but modified	Reject	Reason for modification
		No.				as follow		
			the material to demonstrate that it					
			meets the waste acceptance criteria.					
GER2	56	6.67	"Criteria for siting and methods that	Wrong reference numbers are cited.	Х			
			could be used in a graded approach in					
			the siting of nuclear installations are					
			dealt with in NS-R-3 [38] [39], SSG-9					
			[39] [40], SSG-18 [40] [41], SSG-21 [41]					
			[42], and DS433 (in preparation) [42]					
			<u>[43]</u> ."					
ENISS	14	6.68	" to reduce the need for the		Х			
			transport of <u>unconditioned</u> waste"					
FRA	17	6.68	" to reduce the need for the		Х			
			transport of unconditioned waste"					
CAN	59	6.69	Add 'criticality safety' to the list	Complete list	Х			
			In the design of the reactor and waste					
			management facilities, due					
			consideration should be given to the					
			need for:	Add "control" (i.e. contamination				
			(a) The control of access to areas for	control zones).				
			waste processing and storage and the					
			control of movement between					
			radiation zones and contamination					
			control zones;					
GER2	57	6.69	"In the design of the reactor and <u>its as-</u>	The license for the operation of a	Х			
			sociated waste management facilities	nuclear power plant or a research				
			for the predisposal management of ra-	reactor usually incorporates the				
			dioactive waste, due consideration	associated facilities/systems for the				
			should be given to the need for:"	predisposal management of radioactive				
				waste.				
GER2	58	6.70	"Measures considered in the design	This paragraph deals with measures to	Х			
			for the management of gaseous and	be considered in the design for the				
			liquid radioactive waste and effluents	management of gaseous radioactive				

	No	Para/Line	Proposed new text	Reason	Accept	Accepted, but modified	Reject	Reason for modification
		No.				as follow		
			should include the following:"	waste only.				
RUS	11	6.70	Measures considered in the design for	This item does not cover information on	Х			
			the management of gaseous and liquid	liquid waste and discharges.				
			waste and effluents should include the					
			following:					
GER3	59	6.70 (b)	"Provision of means, such as stacks for	Wording.	Х			
			the <u>authorized</u> discharge of authorized					
			gaseous radioactive waste, and of					
			methods for sampling and monitoring					
			those releases <u>discharges</u> ."					
CAN	60	6.71	Collection of radioactive liquid	Suggest removing (f) and including text	Х			
			effluents to a common point such as a	in (a)				
			holding tank so that treatment for					
			reuse (e.g. using resins or					
			solidification) or because the activity					
			levels are too high for their release to					
			the environment.					
FRA	18	6.71	Add a comment about the importance		Х	Added to bullet (e)		
			of assessing the representativeness of					
			sampling.					
GER2	60	6.71	"Measures considered in the design	1.) Completion in the introductory	Х			
			for the management of liquid	statement with regard to the				
			radioactive waste and effluents should	content of this Para.				
			include the following:	2.) We recommend to move both the				
				items (g) and (h) of Para 6.72				
			(f) Provisions for treating liquid	(management of solid waste) to				
			radioactive waste;	Para 6.71 since they address, in				
			(g) Provisions as necessary for	fact, the management of liquid				
			storing spent ion exchange resins	waste.				
			and dehydrating liquid waste;					
			(h) Provisions for filtration in liquid					
			waste collection lines to prevent					

	No	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
			the release of solids."					
RUS	12	6.71	Measures considered in the design for the management of liquid radioactive waste and discharges should include the following:	Similarly to item 6.70	X			
CAN	62	6.72 (b) & (c)	Suggest combining these as one.	More consistent	Х			
ENISS	15	6.72 (b), (c), (d)	The packaging, handling, <u>packaging,</u> and storage before packaging	Chronology of operations	X			
UK	75	6.71 (d)	Delete	What is meant by a "decay device"?	X	Changed to "decay storage"		
CAN	61	6.72 (a)	What does 'amount' refer to?	Is this volume and volume is size?	x	Changed to "mass"		
FRA	19	6.72	 (b) (c) and (d) move handling before packaging 6.72: fuel elements cladding hulls are not waste generated in NPPs or research reactors but in spent fuel recycling facilities 6.72 (g): consideration should be given to homogeneization systems (by mixing, air bubbling, etc.) and sampling systems. 		X	See Germany comment 61 Added "6.71 (h) Provisions for mixing/ homogenization to prevent stratification and to facilitate the collection of representative samples from tanks and storage structures;"		
ENISS	16	6.72 (d)	Delete "Fuel elements cladding hulls"	Fuel elements cladding hulls are not waste generated in NPPs or research reactors but in spent fuel recycling facilities	x	Added "activated" to "hardware"		
GER2	61	6.72	Note: Items (g) and (h) should be moved to the preceding Para dealing	Consistency with Para 6.48. As mentioned in this Para, spent ion	Х	See France comment 19		

	No	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
			with the management of liquid radioactive waste and effluents.	exchange resins are usually flushed out as slurry and subsequently managed as liquid waste. See also our related comments on Paras 6.12 and 6.15 (g).				
CAN	63	6.72 (h)	This bullet also applies to liquid radioactive waste	Filtration is in the active liquid waste system.	Х	Moved to 6.71		
FRA	20	6.74:	Beginning of second sentence is unclear: material (?) should be selected (?)"		х	Changed to: "Measures should be taken so as to ensure"		
RUS	13	6.75	Depending on the characteristics of waste concerned protection may be provided solely by a container or by a container supplemented by the safety systems of the facility, such as those for heat removal (either passive or active)	It is not clear what is stated in the presented item. The means for radiation protection of waste go well beyond the mentioned listing.	х	Sentence deleted		
GER2	62	6.77	1 st sentence: "The design of the reactor and <u>the associated</u> waste management facility of heat generating waste should incorporate systems (e.g. a system for monitoring and controlling the temperature) that are capable of maintaining the temperature of the waste within acceptable limits in all stages of predisposal management of radioactive waste, both in operational states (i.e. normal operation and <u>anticipated operational occurrences</u>) and under accident conditions (i.e. <u>design basis accidents and design</u> <u>extension conditions</u>)."	With regard to the plant states, the terminology used in the Safety Requirements SSR-2/1 distinguishes between 'operational states' and 'accident conditions' (see Section "Definitions" in SSR-2/1). The term 'operational states' includes normal operation and anticipated operational occurrences. The term 'accident conditions' includes design basis accidents and design extension conditions. For NPPs, the term 'design extension conditions' has superseded 'beyond design basis accidents' and could include severe accident conditions. However, the term has not				To be discussed with WASSC

	No	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
CAN	64	6.81 (a)	What does 'nature' mean?	yet been defined for predisposal radioactive waste management facilities. In our opinion, this topic needs further discussion in WASSC and NUSSC, considering that the term 'design extension conditions' has not yet been defined for predisposal radioactive waste management facilities. Not a term commonly used	x	(a) The type and class of		
GER2	63	6.81	 last sentence: "Some of the factors that should be considered in this review include: (a) The nature of the waste to be stored; (b) Geometries necessary to ensure subcriticality; (c) Dependence of subcriticality on neutron absorbers; (d) Conditions of optimum moderation and reflection; (ee) Waste form and waste packages; (df) Handling operations; (eg) The potential for abnormal operation_; (f) Dependence of subcriticality on neutron absorbers." 	 For the criticality safety of liquid waste containing fissile material, conditions of optimum moderation and reflection are an important factor to be considered in operating procedures. See also our related comment on Para 6.47. The listed items should be rearranged to follow a logical order. Items (b), (c) and (d) mentioned at the left are in particular relevant for the criticality safety of waste containing fissile material. For the sake of consistency, they should be arranged consecutively. 	X	the waste to be stored;		
FRA	21	6.81	: move (f) just after (b)			See Germany comment 63		
ENISS	17	6.82	However, some of these events could also lead to severe accidents, which	To be consistent with previous sentence	Х			

	No	Para/Line	Proposed new text	Reason	Accept	Accepted, but modified	Reject	Reason for modification
		No.				as follow		
			are beyond the design basis. Whilst					
			the probability of such design					
			extension beyond the design					
			conditions occurring is extremely low,					
			in the preparation of operating					
			procedures and contingency plans the					
			operating organization should					
			consider events such as the following:					
GER2	64	6.82	1 st sentence:	1.) Wording.	Х			
			" There are other s<u>S</u>afety	2.) Wrong reference number is cited.				
			considerations that should be taken					
			into account in the development of					
			operating procedures and contingency					
			and emergency arrangements are					
			addressed in the Safety Guide (GS-G-					
			2.1 <mark>) [36]</mark> [<u>37]</u> ."					
CAN	65	6.84	Minimum staffing should be	The most resource demanding	Х	See Germany comment		
			considered for the most resource	operations are often not the same as		65		
			demanding operations.	the most safety significant operations.				
GER1	65	6.84	"Operational limits and conditions are	The recommendation provided at the	Х			
			should be developed on the basis of	left corresponds to Para 6.102 of the				
			the facility design, its safety	Safety Guide SSG-15 "Storage of Spent				
			assessment and the result of its	Nuclear Fuel".				
			commissioning, and usually comprise	In fact, this is Para 7.36 of the previous				
			the minimum staffing requested for	draft version dated 25 March 2013.				
			safety during operational stage.	In the current version, this Para has				
			following:	been shortened beyond recognition				
			(a) Design specifications and	following the request of ENISS. From a				
			operating parameters and the	regulatory point of view, the				
			results of commissioning tests;	development of operational limits and				
			(b) The sensitivity of items important	conditions is clearly a safety relevant				
			to safety and the consequences	topic for which some guidance should				

	No	Para/Line	Proposed new text	Reason	Accept	Accepted, but modified	Reject	Reason for modification
		No.	of events following the failure of items, the occurrence of specific events or variations in operating parameters; (c) The accuracy and calibration of instrumentation equipment for measuring safety related operating parameters; (d) Consideration of the technical specifications for each item important to safety and the need to ensure that such items continue to function in the event of any specified fault occurring or recurring; (e) The need for items important to safety to be available to ensure safety in operational states including maintenance; (f) Specification of the equipment that should be available to enable a full and proper response to postulated initiating events or design basis accidents; (g) The minimum staffing levels	be incorporated into the document. The current text does not fulfil this task. Therefore, we wish to restore the above-mentioned Para in its original version.		as follow		
			needed to operate the facility safely."					
GER1	66	6.84 after	In the subsection "Operational limits and conditions", add a new paragraph 6.85 with the following text: " <u>Operational limits and conditions</u> should be kept under review and may	The recommendation provided at the left corresponds to Para 6.106 of the Safety Guide SSG-15 "Storage of Spent Nuclear Fuel". In fact, this is Para 7.40 of the previous	х			

	No	Para/Line	Proposed new text	Reason	Accept	Accepted, but modified	Reject	Reason for modification
		No.	 also have to be revised as necessary in accordance with the national regulatory framework for the following reasons: (a) In the light of operating experience; (b) Following modifications made to the facility and/or the type of radioactive waste; (c) As part of the process of periodically reviewing the safety case (including as part of periodic safety review) for the facility; (d) In case of relevant changes in legal or regulatory conditions." 	draft version dated 25 March 2013. In the current version, this Para has been deleted. We do not see any justification for this decision, as there was no request of SSC members to do this, and wish to restore this Para. From a regulatory point of view, the review and revision of OLCs is clearly a safety relevant topic for which some guidance should be incorporated into the document.		as follow		
GER2	67	6.85	"In general, the maintenance schedule should take into account: (e) impact to operating facilities /maintenance ."	It is not clear what the term 'maintenance' means at this position. Please clarify or delete the term.	Х			
UK	76	6.85 line 1		To make it clear that maintenance requirements should be derived from the safety case.	Х			
CAN	66	6.87	An operational radiation protection programme should be put in place that ensures that areas of the facility are classified according to the radiation levels and that access control is in place in accordance with the area classification. The programme should include the monitoring and control of radiological hazards in the	Minor changes/revisions to text to make the description of an operational radiation protection program more comprehensive.	x			

	No	Para/Line	Proposed new text	Reason	Accept	Accepted, but modified	Reject	Reason for modification
		No.				as follow		
			facility and should include provisions to ensure that radiation exposures of personnel working in the facility are ascertained, recorded, and kept below dose limits. A programme of work planning should also be put in place to ensure that radiological exposures are kept as low as reasonably achievable.					
CAN	67	6.88	Maintenance, inspection and testing activities must include emergency response equipment	Dedicated emergency equipment is often overlooked in preventative maintenance.	х			
FRA	23	6.89	Bullet (b) should be place in first position Bullet (d):"and management of quality."'		Х			
GER1	68	6.89	"The key elements that should be considered for the decommissioning of reactors <u>facilities for the</u> <u>predisposal management of</u> <u>radioactive waste</u> , as specified in <u>WS- R-5 [22]</u> , Ref. [23] (WS-G-2.1), include: "	 This subsection deals with the decommissioning of predisposal radioactive waste management facilities. Wrong reference is cited in this Para. The recommendations refer to the Safety Requirements WS-R-5 (DS450). Compare with the analogous Para 6.83 of DS447. 	X			
FRA	22	6.89:	bullet (a) " in which the radionuclides in the secondary waste"	Comment: secondary waste is a main issue when waste treatment facilities are not available. It should be limited as possible	Х			
FRA	24	6.91	add a bullet "availability of disposal routes".		Х			
GER2	69	6.91 (e)	"Possible long term storage of radio- active waste at the site once the	1.) Ensure consistency with our related proposals for Paras 3.27, 3.35 and	Х			

	No	Para/Line	Proposed new text	Reason	Accept	Accepted, but modified	Reject	Reason for modification
		No.	reactor has been <u>permanently</u> shut down-, or delivery of radioactive waste to an authorized facility for storage or disposal in compliance with transport requirements;"	 5.4. The proposed insertion makes clear that we address here a state that is different from a temporary shutdown of the reactor. 2.) As an alternative to long term storage of the waste at the reactor site, delivery of the waste to an authorized facility for storage or disposal (as far as possible) should also be considered in the initial decommissioning plan. 		as follow		
CAN	69	Appendic es	Very useful information in the appendices		x			
GER3	70	App. 1	 2nd paragraph: "The programme should include provisions for: (k) Maintaining facilities and equipment for the collection, processing and storage of waste to ensure safe and reliable operation; (n) Initiating, as necessary, research and development activities to improve existing methods for processing radioactive waste or to develop new methods and techniques;" 	Item (k): According to the IAEA Safety Glossary (2007 Edition), the term 'processing' includes 'pretreatment', 'treatment' and 'conditioning'. As mentioned in Para 6.32, collection of radioactive waste is part of pretreatment operations. Item (n): For completion.	x			
UK	79	App. 1	After (b) include <u>"the limits and</u> conditions necessary for the waste to be managed safely."	The programme should identify the restrictions on the waste to ensure the waste is managed safely	X			

Х

11

UKR-

NE

App. 1

Identification funding to implement of

throughout the lifetime of the facility,

waste management program

Add

	No	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
			including its decommissioning, and the possible long term storage of radioactive					
CAN	68	App. 1 (g)	Under the programme Change to 'Processing radioactive waste' to remove term 'retreating'	Retreating can be misconstrued	Х			
FRA	25	App. 1 P. 41	 Programme bullets: (c): add long term storage and disposal (g): retreating in not an usual word (h): Safe handling and transport of radioactive waste and waste package 		Х			
FRA	26	App. 1 P. 42	Programme Bullet (m): "Monitor changes in the characteristics of radioactive waste and waste packages"		Х			
FIN	7	App. 2 P. 44	Nuclear power plants Liquid waste: Gaseous waste:	Also in normal operation SNF rod(s) may break and lose their integrity and leakage of fission gases into waste and air is possible. This should be indicated in the table under titles Liquid and Gaseous waste.	Х	"Gaseous waste: • leakage from the coolant, the moderator systems or the reactor itself (e.g., fuel assemblies);"		Liquid waste already includes primary coolant in water cooled reactors and water from the fuel storage pools;
FRA	27	App. 3 P. 46 and P. 47	 Line "Radiological data": add a V to unconditioned fuel and conditioned fuel as their radiological inventory also need to be known Line" Chemical properties": add a V to the column radioactive waste Line" Quality of canister and container": add a V to the column radioactive waste 					

	No	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
			 Line "stability of the package" : add a V to the column radioactive waste 					
UKR- NRS	2	App. 3 Criticality Safety (4 th ¶ of the table)	demonstration of non-criticality with taking into account appropriate safety margins.	Criticality safety as < <demonstration of non-criticality>> in most countries comes to check of criterion K_{eff} < 0.95, taking into account safety margins accepted in the country for this type of equipment.</demonstration 	Х			
RUS	14	Арр. 3	Chemical properties	Should also be given in the column "RAW", since these characteristics are important in the context of RAW acceptability	Х			
RUS	15	Арр. 3	Quality of canister/container:	Should also be given in the column "RAW", since these characteristics are important in the context of RAW acceptability	Х			
JAP	E5	Referenc es	Delete [26] and [27].	References [26] and [27] are the same of reference [10] and [11] respectively.	Х			
GER3	71	Ref. [26]	This reference should be deleted.	NSS-13 exists twofold in the list of references (also Ref. [10]).	Х			
GER3	72	Ref. [27]	This reference should be deleted.	NSS-14 exists twofold in the list of references (also Ref. [11]).	Х			
GER3	73	Ref. [37]	"INTERNATIONAL ATOMIC ENERGY AGENCY, Arrangements for Preparedness for a Nuclear or Radiological Emergency, IAEA Safety Standards Series No. GS-G-2.1, IAEA, Vienna (2007)Currently under revision (DS462)"	Editorial.	X			
GER3	74	Ref. [39]	"INTERNATIONAL ATOMIC ENERGY AGENCY, Site Evaluation for Nuclear Installations, IAEA Safety Standards	Editorial.	Х			

	No	Para/Line	Proposed new text	Reason	Accept	Accepted, but modified	Reject	Reason for modification
		No.				as follow		
			Series No. NS-R-3, IAEA, Vienna					
			(2003). <u>Currently under revision</u>					
			<u>(DS462)</u> "					
GER3	75	Ref. [43]	"INTERNATIONAL ATOMIC ENERGY	Correct title of the publication approved	Х			
			AGENCY, Safety Aspects in Siting Site	at the 34 th CSS meeting in November				
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