Master List of MS Comments DS447 SG Predisposal Management of Radioactive Waste from Nuclear Fuel Cycle Facilities

Type	MS	No.	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
Gen	AUS	1	General	No comments		X			
Sc/Str	FIN	6	General		DS447 is almost identical with the document DS448. The consistency of these guides should be verified.	X			
Sc/Str	GER1	1	General	As already requested in our statement to the previous draft version of DS447 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 • 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 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,	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. Almost all paragraphs in DS447 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 fuel cycle facilities. 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 5.2 of DS447 corresponds to Para 3.26 of DS448), but unmotivated. In summary, there are no obvious reasons to be recognized for the			X	The intent is to address the different communities of users separately and to expand the documents with some details that are facility specific.

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				Industry, Research, Agriculture and Education" (revision of WS-G-2.7) can also be included in this publication.	preparation of two separate Safety Guides on this issue.				
Sc/Str	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 applicable in the same way to both kinds of wastes.	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			
clar	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	Added to 4.13: "Such an integrated system covers all aspects of management including arrangements for quality assurance and control."		Management Systems supersedes & incorporates QA
clar	JAP	7	General	The following words should be defined. 1. the waste generation facility (in 4.11) 2. the waste generating facility (in 4.17) 3. a facility that generates radioactive waste (in 5.2) (Example) 4.11 The interdependences between ~~the waste generation facility~~ the waste generating facility, predisposal radioactive waste management facility and the (existing or anticipated) disposal facility should also be defined.	It would be better for them to use same words.	X	Use of terminology reviewed for consistency: • 4.11: "…waste generator, the radioactive waste management facility…" • 4.18: "facilities involved in the generation and management of radioactive waste" • 5.2 has been replaced (based on comments on Para. 5)		

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Gen	SWE	1	General	Sweden has no comments		X			
Sc/Str	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 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.			X	See response to Germany comment 1

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Type	MS	No.	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
Sc/Str	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 the same concept.	X			
Sc/Str	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 to be	X			

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Type	MS	No.	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
					equally applicable to both.				
clar	UK	4	General	The document should give greater focus to those aspects of safety and environmental protection that are specific to the management of radioactive wastes.	The document would be much more concise, user-friendly and better 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.	X	General review after incorporation of specific MS comments		
edit	UK	5	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	General review after incorporation of specific MS comments		
Gen	RUS	1	General to DS447 & DS448	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.		X			
WMS	IRQ	5	1	No generic predisposal waste management scheme is provided.	To be used as a guideline to the member states.	X	Generic flow diagram added to Ch 6		

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Type	MS	No.	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
Clar	CAN	1	1.01 Line 6	Add example of LLW	Consistency - examples given for the others	X	Add to 1.1… "LLW that typically contains short lived radionuclides and limited quantities of long lived radionuclides"		
clar	UK	6	1.01	Re-word the 3rd sentence to: "*The approach to treating liquid and gaseous waste streams influences the amount of effluent generated for discharge, the approach to clearance and recycling influences the amount of waste for storage and disposal; therefore the optimization of the overall radioactive waste management process is very important.*"	The proposed text did not convey the authors' key point in a clear way, as the 3rd use of influence in the sentence was not grammatically linked to the subject under influence.	X			
clar	IRQ	1	1.03 Line 1	"Measures to reduce or minimize the generation of radioactive waste" instead of "measures to prevent or restrict the generation of radioactive waste".	Because, we cannot prevent generation of radioactive waste till the end of process of disposal waste that means, we don't need predisposal and disposal waste.	X	"… minimizing the overall environmental impact…"		Waste generation can in fact be avoided. Consistency w NS-R-5
edit	CAN	2	1.03 line 2	Remove 'place'	Doesn't read correctly	X			
edit	GER1	3	1.03	1st sentence: "GSR Part 5 [4] and NS-R-5 [6] require~~s~~ that measures to prevent or restrict the generation of radioactive waste are ~~required~~ to be considered ~~place~~ in the design of nuclear facilities and the planning of activities …"	Simplify wording to avoid a cumbersome formulation ("… require that measures … are required …"). Additional reference to GSR Part 5 is recommended since the statement provided here is consistent with Para 1.3 of GSR Part 5:	X	"GSR Part 5 [4] and NS-R-5 [6] requires that measures to prevent or restrict the generation of radioactive waste are required to be considered place in the design of nuclear facilities and the planning of activities that have the		Consistency with both requirements

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Type	MS	No.	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
					"… Measures to prevent or restrict the generation of radioactive waste have to be put in place in the design of facilities and the planning of activities that have the potential to generate radioactive waste. …" Note that the wording used in NS-R-5 is slightly different. Para 6.31 of NS-R-5 states: "To the extent that is practicable at the design stage, the operating organization shall take measures to avoid or to optimize the generation of radioactive waste with the aim of minimizing the overall environmental impact. …"		potential to generate radioactive waste. This recognizes that the management of the material and processes that generates result in radioactive waste is the key to avoiding or minimizing quantities produced therefore minimizing the overall environmental impact."		
clar	JAP	1	1.03 (p.1)	NS-R-5 [6] requires that ~~measures to prevent or restrict the generation of radioactive waste are required to be considered place in the design of nuclear facilities and the planning of activities that have the potential to generate radioactive waste.~~ to the extent that is practicable at the design stage, the operating organization shall take measures to avoid or to optimize the generation of radioactive waste	It is better to quote the paragraph 6.31 in the original NS-R-5 as faithful as possible.	X	See response to Germany comment 3		

Type	MS	No.	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
				with the aim of minimizing the overall environmental impact, and that the predisposal and disposal routes for waste shall be considered with the same aim of minimizing the overall environmental impact.					
edit	UK	7	1.03 line 2	Delete “place”.	The word “place” is redundant	X	See response to Germany comment 3		
edit	UKR	1	1.03 p. 1, phrase 1	Needs to be reworded	The phrase is not understandable	X	See response to Germany comment 3		
edit	USA	1	1.03, P. 1	Modify Para 1.3 to read: NS-R-5 [6] requires that measures to prevent or restrict the generation of radioactive waste are required to be considered ~~place~~ in the design of nuclear facilities and the planning of activities that have the potential to generate radioactive waste. This recognizes that ~~the~~ management of radioactive ~~the~~ materials and processes that generate ~~generates~~ radioactive waste is the key to avoiding or minimizing quantities produced.	Language, accuracy, and completeness	X	See response to Germany comment 3		
clar	JAP	2	1.04 (p.1)	Predisposal management of radioactive waste, as the term is used in GSR Part 5 [4], ~~encompasses~~ covers all the steps in the management of radioactive waste from ~~waste~~ its generation up to (but not including) disposal, including ~~waste~~ processing (pretreatment, treatment and conditioning) as well as storage and	It is better to quote the paragraph 1.2 in the original GSR Part 5 as faithful as possible.	X			

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				transport~~ation.~~					
edit	UK	9	1.05 P. 02 footnote	The operator is the generator of radioactive waste and includes……	To improve the grammar of the sentence.	X	The operating organization includes the waste generator, organizations that carry out decommissioning activities, and operators of facilities for the predisposal management of radioactive waste [4].		Consistency w GSR Part 5
edit	GER3	4	1.08	1st sentence:"… when no disposal facility has been established, reasonable assumptions have to be made about the likely disposal option."	Wording.	X			
clar	UK	12	1.08	In cases where …. Wastes are to be stored for long periods of time, *precautionary and properly justified* 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 similarly conservative assumptions should be made about the timescales in which a disposal facility will be made available.			X	See response to Germany Comment No. 4
edit	IRQ	2	1.09 Line 1	Add the word "will" to precede the word "supersedes" to become "This safety will supersede those parts of following safety standards…"	Till the publication already be finished of this draft.	X	Once published, this SG will supersede WS-G-2.5 and WS-G-2.6.		
edit	UK	8	1.09 line 4	Delete hyphen and move closing bracket from end of paragraph to here	To improve the grammar and clarity of the paragraph.	X			
clar	UKR	2	1.09, p. 2	It is stated in ¶ 1.9 that this Safety Guide	The inconsistency should be	X			

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			1.12, p. 3	… provides recommendations on the predisposal management of radioactive waste generated by nuclear fuel cycle facilities (excluding nuclear power plants and research reactors and facilities for the mining or processing of uranium ores or thorium ores — both within larger facilities and at separate, dedicated waste management facilities, including centralized waste management facilities). Para 1.12 of the Safety Guide is applies to the predisposal management of all types of radioactive waste generated by nuclear fuel cycle facilities (excluding nuclear power plants and research reactors).	eliminated. The scope of the Safety Guide should be clarified.				
clar	UK	13	1.10	Does the IAEA intend to withdraw the quoted superseded standards, or to edit them in order to ensure clarity and consistency?	If the quoted superseded standards are not suitably edited or withdrawn, there is potential for out-of-date intelligence to be unwittingly adopted by operators or regulators.	x	Once published, this SG will supersede WS-G-2.5 and WS-G-2.6.		
edit	GER3	5	1.11	"… the requirements established in the following Safety Requirements publications: Radiation Protection and Safety of Radiation Sources: International Basic Safety Standards (GSR Part 3) [3], Predisposal Management of Radioactive Waste (GSR Part 5) [4], Safety of Nuclear Fuel Cycle	To be consistent within this list (citation of the relevant Safety Requirements either with or without their titles).	X			

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				Facilities (NS-R-5) [6], Safety Assessment for Facilities and Activities (GSR Part 4) [7], and The Management System for Facilities and Activities (GS-R-3) [8]."					
edit	UK	10	1.11	The document should either quote reference titles for all these quoted standards, or use document numbers for all.	To improve the document's consistency.	X			
Clar	ENISS	1	1.12	(excluding nuclear power plants, research reactors and mining and processing of Uranium or Thorium ores)	Consistency with the unclear 1.9	X	See comments above		
Clar	FRA	1	1.12	(excluding nuclear power plants, research reactors and mining and processing of Uranium or Thorium ores)	Consistency with the unclear 1.9	X	See comments above		
Clar	CAN	3	1.12 & 1.14	Reword – storage and transport included or not included?	Conflicting statements	X			
clar	UK	11	1.12 -1.17 Scope	Please add a paragraph to clarify whether radioactive wastes derived from the decommissioning of redundant facilities are considered to be in-scope.	The document is presently unclear on the question of whether wastes from decommissioning are intended to be in-scope.	X	See responses to comments on 1.9 and 1.12		
clar	UK	14	1.13	*"The recommendations in this publication are applicable to all the processes that give rise to radioactive wastes from nuclear fuel cycle facilities."*	Paragraph 1.3 rightly 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 4.4 mentions the importance of interdependencies between all the steps in the waste	X	While storage and transport are included in the definition of predisposal management of radioactive waste, they are not dealt with in detail in this Safety Guide.		

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Type	MS	No.	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
					management process, including the initial generation of the waste. Paragraph 6.6 states that "During the design of the nuclear fuel cycle facility, consideration should be given to operational features for waste generation and control". Therefore a statement that, "operational activities at nuclear reactors are outside the scope of this safety guide" is evidently inconsistent.				
clar	GER2	7	1.14	last sentence: "Spent fuel that is ~~transferred to~~ destined for reprocessing ~~facilities~~ is not considered radioactive waste."	The intended use is decisive for the classification of spent fuel (either radioactive waste or a future energy resource), not the physical act of a transfer to a reprocessing facility.	X	Transferred to or destined for		
edit	GER3	6	1.14	2nd sentence: "These are dealt with in the Safety Guides WS-G-6.1, Storage of Radioactive Waste [10] and SSG-15, Storage of Spent Nuclear Fuel [11]."	To be consistent within this list (citation of the relevant Safety Guides either with or without their titles).	X			
ims	IRQ	3	1.1~~6~~7	This paragraph is better to be omitted.	Because this draft is not concern with physical protection of materials.			X	Text was agreed with NSCGC
edit	GER3	8	1.17	2nd sentence: "Recommendations and guidelines on nuclear security arrangements at nuclear facilities and of radioactive material are provided … in publications in the IAEA Nuclear Security Series, such as ~~IAEA Nuclear Security Series No. 14~~ [14]."	Simplify wording.	X			

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wms	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.			X	Exemption criteria are covered in GSR Part 3
ims	UK	15	2.02	"The Safety Requirements, GS-R-3, The Management System for Facilities and Activities, requires ~~*both the regulatory body and*~~ the operator to establish a management system…."	The UK's non-prescriptive regulatory regime implies that establishment of the management systems that ensure safety is purely the responsibility of operators. The independent regulatory body is responsible for setting out the goals that such management systems should achieve, without being proactively involved in the establishment of those systems. Absolute clarity is important on this fundamental point.	X	"…provide requirements on management system that integrates, among others, all elements of management including…"		Clarity, and considering that DS456, Leadership and Management for Safety (revision of GS-R-3), is applicable to the operation as well as the regulation of facilities.
clar	INDIA	1	2.04 P. 4	'In controlling the radiological and non-radiological hazards associated with radioactive waste, the following aspects are also required to be considered: conventional health and safety issues, **impact on environment**, radiation risks that may transcend national borders, and the potential impacts and burdens on people of present and future generations and populations remote from present facilities and activities that give rise to radiation risks (SF-1) [1].	To include the concern for environment	X	'…, conventional health and safety, environmental impacts, radiation hazards…'		clarity
Sc/str	UK	16	2.05 to 2.07 inclusive	Delete	These paragraphs are not specific to the management of			X	Consider to keep it as it is since it provides the

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					radioactive wastes and could be removed.				fundamentals for RP that should be noted by waste operator not necessarily familiar with the RP structure - acceptable overlap.
edit	CAN	4	2.05 to 2.09	Replace "GSR Part 3" with "BSS" in sections 2.5 to 2.9.	To align with ¶'s 2.4 to 2.8 of DS448, Predisposal Management of Radioactive Waste from Nuclear Reactors, reference to the BSS should be used instead of GSR Part 3.			X	GSR Part 3 supersedes BSS
edit	CAN	5	2.06	Requirements for radiation protection have to be established at the national level, with due regard to the BSS [3]. In particular, radiation protection must be optimized for any persons who are exposed to ionizing radiation as a result of activities in the predisposal management of radioactive waste, 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.	Revisions to text (i.e. adding BSS, ALARA).		BSS has been superseded by GSR Part 3 (optimization vs alara)	X	GSR Part 3 supersedes BSS
edit	GER3	9	2.06	2nd sentence: "In particular, [3] requires radiation protection to be optimized …"	Editorial.	X			
edit	GER3	10	2.08	"… workers and members of the public~~;~~ (SF-1, ICRP 77, ICRP 81) …"	Editorial (delete semicolon).	X			
Sc/str	UK	17	2.10 and 2.11	Delete	These paragraphs are not specific to the management of radioactive wastes and could be			X	Consider to keep it as it is since it provides the fundamentals for

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					removed.				Environmental Protection that should be noted by waste operator not necessarily familiar with the environmental protection- acceptable overlap.
clar	CAN	6	2.12	Replace "optimize" with "minimize"	Consistent with 1.5	X			
clar	UK	18	2.12	The second sentence should be changed to: *"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 achievable."*	The existing wording confuses the two separate concepts of; compliance with limits, and; the optimisation of protection. Both these concepts have associated legal requirements in the UK.	X	1st sentence changed to: "…measures to avoid or to minimize the generation of radioactive waste …"		clarity
clar	UK	19	2.12 Line 2	'…management to take measures to avoid or to optimize the generation of radioactive waste, including …'	The 'and management' should be removed since it appears to be a typographical error.	X	See response to UK comment 18		clarity
clar	CAN	7	2.13	In relation to pre-disposal management of radioactive waste….	Add reference to waste			X	unnecessary
edit	GER3	11	2.13	"… are addressed in IAEA Safety Standards Series No. RS-G-1.7 [17] and WS-G-2.3 [18]."	Include reference for completeness.	X			
clar	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	Sections 3 and 5 clarified in terms of licensing and the role of the SC/SA		
IMS	UK	20	3.01	*"The government, site operators and liability owners are responsible for*	Development of some of the aspects of waste management	X	Modified 1st sentence: "The government is responsible	X	GSR Parts 1 and 5

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				establishing national policy and corresponding strategies….."	strategies in the UK's regulatory system are the responsibility of the relevant site operators and/or liability owners. It is not fitting for all of the emphasis to be placed entirely upon the government.		for ensuring that a national policy and strategy are established for the management of radioactive waste."		
clar	GER2	12	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			
edit	UK	21	3.05 line 6	Insert "the" before interface.	To improve the grammar of the sentence.	X			
clar	UK	22	3.08	Delete paragraph 3.8	The key point that is being made in this paragraph is more clearly expressed in the preceding paragraph 3.5.	X			
clar	JAP	3	3.09 line 3 (p.7)	…decommissioning of ~~both~~ the predisposal waste management facilities ~~and the storage facilities~~ and also …	According to the IAEA Safety Glossary and para. 1.12, predisposal waste management facilities include storage facilities.	x			
WMS	USA	2	3.11 3.13 P. 8	Modify Para 3.11 to read: In order to facilitate the establishment of a national policy and strategy, the Government should establish a national inventory of the radioactive waste (actual and expected, such as waste	Completeness to consider that certain States may have different waste classification system than GSG-1	x			Topic that needs to be addressed in WASSC

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				generated during decommissioning and dismantling of facilities) and update it at regular time intervals. This inventory should take into account the guidance in GSG-1 [9], or State specific radioactive waste classification system. Also modify Para 3.13 to state after GSG-1: or as defined in State waste classification scheme.					
clar	CAN	8	3.12	Change 'treatment, conditioning' to 'processing'	Covers all areas	X			
clar	UK	23	3.12 line 2	…all waste generated. *In judging the sufficiency of capacity account should be taken of process uncertainties, system reliability and availability and the possible need for redundancy.* The storage capacity…	The quoted additional considerations are important, but were not included in the initial draft.	X			
clar	GER2	13	3.13	1st sentence: "The national policy and strategy should address the various waste classes as identified in GSG-1 [9] or in the national waste classification scheme, and their long-term management (disposal), both from a technical point of view as well as from a human and financial resources point of view."	1. Provide flexibility to establish a strategy based on the specific waste classification scheme in the State. Germany, for example, distinguishes between heat-generating waste and waste with negligible heat generation. 2. In Paras 4.22 and 4.23, the phrase 'long term management' of radioactive waste obviously relates to processing and storage. In Paras 3.13 and 6.16, however, the same phrase relates to	X	Combined with Para 3.10		See US comment 2

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					disposal as the final management step. This should be clarified by the proposed insertion in brackets, in analogy to the text in Para 6.16. See also our related comment on Para 4.22. 3. Clarification with regard to the kind of resources to be addressed in the national strategy.				
clar	UK	24	3.13	Use the text in the same Para from DS448	The passage used in DS448 makes the same points in a clearer manner.	X			
edit	UK	25	Req. 03 line 3	Remove the stray "3" and add the footnote from the original in GSR Part 5	Footnote missing (see DS448)	X			
edit	JAP	E1	Req. 03/05 (p.8)	…**review and assess the safety case[2] ~~3~~ and…** Add footnote as follows; [2] The safety case is a collection of arguments and evidence in support of the safety of a facility or activity. This collection of arguments and evidence may be known by different names (such as safety report, safety dossier, safety file) in different States and may be presented in a single document or a series of documents (see Section 5).	Footnote is missing.	X			
clar	USA	3	3.14 P. 8	Modify Para 3.14 to read: Regulatory body main responsibilities include development of waste	Completeness in defining role of regulatory body responsibilities	x			

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				management regulations, inspections, enforcement, and implementation guidance to licensees and operators. Responsibilities also include addressing ~~contributing to~~ the technical basis and inputs for the establishment of policies, safety principles, and associated performance criteria, and for establishing legal requirements ~~regulations~~ or conditions to serve as the basis for carrying out regulatory activities. The regulatory body should also provide specific guidance to operating organizations on how to meet requirements as related to the safe management of radioactive waste.					
clar	UK	26	3.15 line 4	….updated by the operator and reviewed….	The regulator does not do the updating	X			
clar	USA	4	3.15, 3.25 P. 8/9	Modify Para 3.15 to read: The regulatory review of the safety case, or the safety and performance assessment analysis, for radioactive waste management facilities should follow a graded approach, particularly considering the phases in the lifetime of the radioactive waste management facilities. Modify as well Para 3.25.	Completeness to include performance assessment analysis.			X	SA is part of safety case; PA is not used in IAEA predisposal terminology
clar	UKR	3	3.15, p. 9, last phrase	At each phase in the lifetime of these facilities (including decommissioning), the safety case should be updated and reviewed by the regulatory body.	Decommissioning is missing	X			
	UK	27	3.18	Suggest adding ‘(c) Possible long term	(1) It is an important part of the	X			

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Type	MS	No.	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
clar				storage of radioactive waste after the nuclear fuel cycle facility has been decommissioned.'	licensing strategy (2) To be consistent with DS448.				
IMS	UK	28	3.18	"The government should consider what policy it wishes to apply to the licensing of nuclear facilities, for example…."	The relevant legislation in some nations is prescriptive about the circumstances in which a site license is required and regulators are then duty bound to enforce against that legislation. Thus the quoted responsibility rests instead with the government, in this instance.	X	The regulatory body should consider the licensing strategy to be adopted (in accordance with the national legal and governmental framework)…		GSR Parts 1 & 5, SSG-12
clar	CAN	9	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			
clar	USA	5	3.19, line 3 P. 9	Modify sentence to read: ….to avoid any omissions or unnecessary duplications and to prevent conflicting requirements, as practicable, on the operating organization.	In some cases, when multiple regulatory authorities are involved, requirements could be more stringent by one authority than the other due to timing and/or overlap of regulations.	x			
Sc/str	UK	29	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			
clar	CAN	10	3.20 last sent.	Change to: "If a facility is shut down and no longer to be used for its intended	Add new text to include regulatory guidance for the			X	See UK comment 29

Type	MS	No.	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
				purpose, a final decommissioning plan and supporting documents shall be submitted to the regulatory body for approval within 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 of the final decommissioning plan. COMMENT: Section 3.20 provides regulatory guidance on the level of 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.				
clar	USA	6	3.20, Line 4 P. 10	Modify last sentence to read: If a facility is shot down and no longer to be used for its intended purpose, a final decommissioning plan should be submitted to the regulatory body for review and approval, in accordance with the State legal and regulatory framework, early in advance before license termination.	Completeness to ensure compliance with State requirements for timeliness in submission of decommissioning plan.			X	See UK comment 29
Sc/str	CAN	11	3.21-3.35	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: 3.27, 3.31, 3.33, etc.)	This is only a suggestion for consideration to improve readability for the user.	X			
IntSaf	RUS	2	3.22	The operating organization is responsible for the safety of all activities associated with the management of radioactive waste (including activities	The operating organization ***can and must*** ensure ***safety of installations and activity*** within their own enterprise (site) only,	X	The operating organization is responsible for the safety of all activities undertaken at its facilities …		To discuss w WASSC The operating organization is

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Type	MS	No.	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
				undertaken by contractors)…	but ***can not*** ensure ***safety*** of the third-party contractor enterprise, in particular, if it is located abroad. In practice, safety assurance within the third-party enterprise means ***the comprehensive control*** on behalf of the operator, ***over the whole activity*** related to management of radioactive wastes and performed by the contractor organization within its own enterprise, which is impossible. Thus, for instance, the Operator cannot ensure safety at management of radioactive wastes dispatched for conditioning or reprocessing to the third-party enterprise, though ***it is responsible for the quality*** of the wastes supplied and for ***the quality*** of the accepted product of reprocessing. Responsibility for the safety of ***its own*** installation and activity shall be borne by the contractor organization.				ultimately responsible for the safety of all activities associated with the management of radioactive waste iaw international requirements, national legal/ regulatory framework and requirements of the license. If waste is transferred to another licence holder, transfer agreements need to be in place (ownership). Cross boundary transfers are another issue that needs to be considered in terms of international agreements.

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Type	MS	No.	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
ims	CAN	12	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	… , and documented. Ownership of the waste should always be clearly identified. Information…		
Clar	UK	32	3.24	Add new bullet: *Taking into consideration possible long-term storage of radioactive waste after the facility has been decommissioned.*	Consistency with DS448	X	Alignment with DS448		
clar	UK	34	3.24	Insert new bullet "Meeting the requirements of waste acceptance criteria."	Omission.	x	Modify (c) to "Development of operational limits, conditions and controls including waste acceptance criteria consistent with the safety case for approval by the regulatory body;"		
Clar	UK	30	3.24 (a)	Delete "design"	There should be no need for the operator to apply to the regulator for permission to *design* a facility.	x	Obtaining regulatory approval for the RWM facility or activity by providing an acceptable safety case		
clar	UKR	4	3.24 (c), p. 11,	Operation and decommissioning of the radioactive waste management facility…..	Decommissioning should be included	x	Conducting all activities iaw SC and license conditions		clarity
edit	GER3	14	3.24 (d)	"Development and application of procedures for the receipt, storage and processing of radioactive waste ~~and acceptance criteria~~;"	Due to their importance for all subsequent steps in waste management, waste acceptance criteria should be addressed in a separate item (for justification, see also our next comment).	X			
clar	GER2	15	3.24 (d) after	Add a new item (e): "Development and application of waste acceptance criteria as approved by the regulatory body;"	As stated in Requirement 12 of GSR Part 5, waste packages that are accepted for processing,	X	See response to UK 34		

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Type	MS	No.	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
					storage or disposal shall conform to criteria that are consistent with the safety case. Such criteria may be subject to approval by the regulatory body.				
clar	UK	33	3.24 (e)	…*waste acceptance criteria are developed at necessary points in the predisposal radioactive waste management taking account of the information required* …	Criteria cannot make an acknowledgement. The need to develop criteria at appropriate stages has been omitted.	X	Ensuring that the information recorded at a particular point in the predisposal radioactive waste management process meets the downstream waste acceptance criteria		See response to UK 34
edit	GER3	16	3.24 (h)	"Derivation and implementation of operational limits, conditions and controls;"	Consistency with the terminology used elsewhere in this document (compare with Paras 3.16, 3.33, 5.2, 5.3, 5.8, 6.55 and 6.78).	X	Incorporated into (c)		See response to UK 34
edit	GER3	17	3.24 (i)	"(i) Ensuring operations are in compliance with criteria for the removal of radioactive material within authorized practices from any further regulatory control ~~and the~~; (j) C~~c~~ontrol of discharges from a radioactive waste management facility as approved or authorized by the regulatory body ~~and~~; (k) Limiting onsite contamination and occupational exposure;"	In order to improve the comprehensibility of the statement provided, we recommend to split item (i) into three separate items (i) – (k).	x			
edit	IND	1	3.24 (i)	Ensuring that operations are in compliance with criteria…	Grammatical error	X	See (j) above		

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Type	MS	No.	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
edit	JAP	E2	3.24 (i) Line 4 (p.11)	…by the regulatory body and limit **of** onsite contamination and occupational exposure;	Editorial	X	See (l) above		
edit	GER3	18	3.24 (k)	1st sentence: "Ensuring that radioactive waste ~~that is 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 phrase "that is 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			
Clar	INDIA	2	3.24 (k) P. 12 2nd line from top	…anticipated disposal option; **and provision may be made for relocating the radioactive waste for storage and/or disposal**	For better clarity	x			
clar	UK	31	3.24 (l)	Delete	The phrase "taking into consideration decisions that would have to be made" is inappropriate. The topics listed would need some sort of "decision" earlier.	x	Due consideration and decision making in the following cases:		Decision making is an ongoing activity
Clar	CAN	13	3.24 (l) 3rd bullet	Add '…subsequent clearance or lower classification level. '	Will not always be clearable, but may require less shielding etc.	X	…or reclassification.		
clar	USA	7	3.24; 4.15, Other ¶ P. 10	The guidance used in several instances the term "radioactive waste management facility or facilities" to explain responsibilities and operating organization of such facilities. In this context, the guidance appears to cover both "predisposal" as well as "disposal"	Clarification and minimization of overlap between waste "pre-disposal" and waste "disposal" management roles and responsibilities.	X	Will review for use of WM vs predisposal WM; operator		Disposal is only addressed in terms of the interdependencies with the predisposal management of waste

Type	MS	No.	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
				facilities. We recommend that the guidance define the scope and role pertaining to "predisposal management facilities" early under the "Scope Section" as described under Para 6.1, P. 20, of the steps involved in the predisposal management of radioactive waste (e.g.; (a) waste generation and control; (b) Processing (pretreatment, treatment, and conditioning); (c) storage; and (d) transport).					
Clar	UK	35	3.25	*"a waste management programme for each facility, integrated with all other relevant programmes"*	A "facility specific" waste management programme may be insufficient. Cross- site planning is required on multi-facility sites (i.e. integrated site-wide strategies and programmes).	X	, integrated with other relevant on site programmes (e.g., multi-facility waste processing sites),…		
Edit	UK	36	3.25 line 1	In the case where….	To correct the English as in DS448	X	See response to UK comment 35		
clar	CAN	14	3.26	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		
edit	GER3	19	3.26	3rd 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 initial 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 (approved at the 34th CSS meeting in November 2013).	X			

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Type	MS	No.	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
				last sentence: "For existing facilities without a decom-missioning plan, such a plan should be prepared by the operating organization as soon as possible."	Clarification with regard to the responsibility for preparing the decommissioning plan.				
Sc/str	UK	37	3.26	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	Relationship between decommissioning and waste management and allowable level of overlap
clar	UK	38	3.26 end	Insert: The decommissioning plan should be reviewed and updated at each phase in the lifetime of the facility.	Omission	X			
clar	UK	39	3.26	Consider inserting a para on the safety case as in DS448	Possible omission and consistency with DS448		Text in DS448 moved to Ch 5	X	
Edit	USA	8	3.26, P. 12 and Others	DS447 Draft document referred in many instances to WS-R-5[21]. It is noted that this referenced document is under final revision; therefore we suggest adding after the reference" and its ongoing revision in DS450 [Ref. 22?]"	Completeness to make the reader aware of ongoing revision of this reference under DS450 document. We anticipate that DS450 may be issued when this document is in its final revision status.	x	GSR Part 6 is now published and can be referenced (will review throughout)		
clar	CAN	15	3.27	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	X			

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Type	MS	No.	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
					applicable)				
clar	GER2	20	3.27	1st 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	Addressed in 3.24		
Sc/str	UK	40	3.27	Delete	This paragraph is concerned with the general competence of staff and not the management of radioactive wastes. There is adequate relevant guidance on the topic in alternative Safety Guides			X	Integrated approach /allowable overlap
clar	UK	41	3.27 line 2	If the paragraph is to be retained, it should focus on aspects that are specific to the management of radioactive wastes. For example the second sentence could state: *The operating organization should ensure that all staff members concerned understand the nature of the radioactive waste being managed, the objectives of the radioactive waste management processes, the safety case, associated potential hazards and the relevant operating and safety procedures to the extent required by their responsibilities.*	To improve and correct the English. See DS448.	X			
clar	UK	42	3.30	Rewrite to: *Records should be maintained for discharges, clearances of*	To use records rather than documents and to better	X			

Type	MS	No.	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
				material from regulatory control, reuse or recycling of materials, as well as delivery of radioactive waste to an authorized disposal facility and transfers to other facilities. Such records should be retained until the facility has been fully decommissioned, or for a period agreed with the regulatory body.	structure the paragraph.				
clar	FRA	2	3.30	Discharges, clearance of materials from regulatory control, reuse or recycling of materials, as well as delivery of radioactive waste to an authorized disposal facility and transfers to other facilities should be documented. Such documents should be retained during a period of time determined ~~until the facility has been fully decommissioned or alternatively~~ by agreement with the regulatory body and not inferior to the duration considered in the safety assessment of the facilities involved in the operation.	In case of incidents in a facility receiving radioactive materials or waste (e;g. waste disposal) the experience proves that information about prior treatment and origin of these materials or waste are generally of interest.	X	See response to UK Comment 42		
clar	USA	9	3.30, line 1 P. 13	Add "exemptions" after clearance of materials from regulatory control	Completeness and consistency with the BSS which includes "clearance" and exemption" schedules.		Addressed in 3.29	x	GSR Part 3: def of exemption includes req's from reporting etc
clar	GER2	21	3.31	1st 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	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	X			

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				on ownership and origin [23].”	the few parameters mentioned in the text.				
clar	GER2	22	3.31	last two sentences: “Such a records system should be managed as required by the national authority or the regulatory body. The records system should also include information on disposal of radioactive waste in case of delivery.”	1. Ensure consistency with Para 4.24. Depending on national regulations, requirements for the storage of records are prescribed by the national authority or the regulatory body. 2. According to Para 3.30, 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			
clar	UK	43	3.31 last sentence	*“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	Such a records system should be managed by the operating organization as required …		
clar	CAN	16	3.33	Change ‘reprocessing’ to ‘further processing’	‘Reprocessing’ could be misconstrued	X			
clar	GER2	23	3.34	“As stated in GSR Part 1 [2], ~~t~~he 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	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	As stated in GSR Part 5		

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				decommissioning ~~(GSR Part 1) [2]~~."					
IMS	UK	44	3.34	*"Site operators and the owners of radioactive wastes are required to put in place…."*	This paragraph makes no allowance for the fact the operator may not be the waste owner and that responsibility for provision of finance may rest outside the operator (e.g. NDA and MoD in the UK situation).		In certain circumstances financial resources may need to be provided by the waste owner.		
edit	FIN	1	3.35 P. 14	The operating organization should draw up emergency plans on the basis of the potential radiological impacts of accidents (~~GS-R-2~~ GSR Part 7) [24] and should be prepared to respond to accidents at all times as indicated in the emergency plans (See Chapter 7).	MS comments are already given on GSR Part 7. Please check whether the reference could be updated.	X	Will check status of DS457 as this document progresses		
edit	GER3	24	3.35	"The operating organization … should be prepared to respond to accidents at all times as indicated in the emergency plans (See ~~Chapter 7~~ Para 6.82)."	Wrong reference is provided. There is no Chapter 7 in this document.	X			
Sc/str	UK	45	3.35	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	Part of the waste organization's responsibility
clar	AFG	1	4.01	The designers of security systems should consult with qualified safety experts to ensure that security measures do not compromise the safety of individuals or the protection of the environment.	Safety and security shall be comprehensively elaborated.	x	Add at end of the sentence: "… and neither safety nor security is compromised."		
clar	IRQ	4	4.01, 4.5,	Insert "nuclear" before the reference to	Terms of the IAEA	x			

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			4.6, 4.17, 4.21, 4.24	"security"					
edit	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~~ appropriately to ensure that they do not adversely affect each other and that, to the degree possible, they are mutually supportive	"in a manner" is not clear enough.	x			
clar	UK	46	4.02	Delete	Paragraph 4.2 repeats the key points of paragraph 4.1			X	text per agreement w NSGC. 4.1 covers design; 4.2 covers operations
clar	GER2	25	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	When material needs to be accessed for waste management or safeguard purposes, all the requirements of radiation protection, waste management and nuclear security should be taken into account.		
edit	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, and waste management as well as nuclear security considerations should be taken into account.	Paraphrasing for better expression	X	See response to Germany comment 25		
edit	UK	47	4.03 Last line	Suggest adding sentence 'Specific recommendations on nuclear security in the management of radioactive waste	Since guidance on security matters ins not covered in this section there should be a	X	See response to Germany comment 25		

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				are dealt with in the publications of the IAEA Nuclear security Series [13, 14].'	reference indicating where such guidance can be found. Also such a reference is provided in DS448.				
clar	FRA	3	4.04	Interdependences exist among all steps in the management of radioactive waste …. ….. For example, treatment and conditioning options are influenced by the established or anticipated acceptance requirements for storage and disposal.	Waste form or waste packages are generally important element for the safety of storage as well as of disposal and therefore they should have to comply with storage acceptance criteria too.	X			
clar	UK	48	4.04	Delete "as far as practicable"	The existing text gives the impression that the act of discharging waste is preferable to other means of disposal. This may not be true in all circumstances.	X			
clar	AFG	2	4.04 (a) New	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	Efficient security culture shall be implemented.			X	Details are covered by the referenced IAEA guidelines [13 & 14]

Type	MS	No.	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
				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 entire organization of the operator.					
clar	UK	51	4.04 to 4.12	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	Last sentence of 4.4: "At all times due consideration should also be given to the interdependency between safety and environmental protection as described in Ch 2."		
clar	RUS	3	4.05	(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, and the confirmation of conformance with acceptance criteria		
clar	UK	49	4.05	"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			
edit	GER3	26	4.06	2nd sentence: "Such interdependences create safety case interfaces, including waste acceptance criteria and operational limits and conditions and	Consistency with the terminology used elsewhere in this document (compare with Paras 3.16, 3.33, 5.2, 5.3, 5.8,	x			

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				should be carefully managed …"	6.55 and 6.78).				
edit	USA	10	4.06 & 4.7 P. 15	Merge 4.6 and 4.7 as 4.7 is a continuation of 4.6.	Editorial	x			
clar	SWZ	1	4.06 (4.7)	A key feature of predisposal radioactive waste management within fuel cycle facilities is the nature of their interdependence and often their place within a national framework. Such interdependences create safety case interfaces, including waste acceptance criteria and limits and conditions and should be carefully managed along with any deviations that might occur for instance associated to those uncertainties.	It would be clearer to just write that all secondary wastes produced in the facility must have an homologation for final storage or further conditioning. For example, this is included in the ENSI guide lines.	x	Add at end of para: "All secondary wastes produced in the facility should undergo an approval process for further specific actions."		
edit	IND	4	4.07	Thus, it is important to highlight that the interdependences should be taken into consideration ~~such~~ to ensure that an integrated approach to safety is adopted; and that safety (within a waste management framework that also ~~takes into consideration~~ considers waste minimization via adoption of the waste management hierarchy) is optimized.	Grammatical error and paraphrasing	x			
clar	INDIA	3	4.07 P. 15, 4th line	…hierarchy) **is as per ALARA principle**.	For better clarity	x	Insert "optimization"		
edit	GER3	27	4.08	"… however, in the case that a disposal option has not been identified at a certain stage, reasonable assumptions should be made about the likely disposal options and these should be set down clearly."	Wording.	x			

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edit	UK	50	4.08	In cases where …. Waste ere to be stored for long periods of time, *precautionary and properly justified* 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	See response to Germany comment 27		
edit	IND	5	4.10	Independent of this Instead, all radioactive waste arisings are required to be managed. It requiring requires decisions on waste forms to be produced which, in this situation, must be made before all radioactive waste management activities are finally established.	Paraphrasing for better expression	x			
edit	IND	6	4.11	~~Where~~ If there is no disposal facility yet available or defined, then an interim position should be defined ….	Where If there is no disposal facility yet available or defined, then an interim position should be defined ….	x			
clar	UK	52	4.11 After	Insert new Para: "*Waste packages should have a system of identification that is unique, able to be linked to its associated records and that takes account of the need to be read in the long term future up to disposal."*	Omission	x	added to paragraph 6.2		
clar	CAN	17	4.12	Delete 1st sentence of example.	It appears to duplicate 4.5(b) and the concluding sentence carries	X			

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Type	MS	No.	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
					the matter.				
edit	IND	7	4.12	Site and facility waste management programmes should be carried out to identify all relevant interdependences and include arrangements to ensure that they are appropriately considered from the point of generation to the point of disposal.	Paraphrasing for better expression	X	Para deleted		Covered in other para's
clar	CAN	18	4.13 1st sent.	Suggest moving the words in brackets "(safety, health, environmental…)" from 4.14/first line to 4.13/ first line after "The requirements on management systems".	This better identifies the different management systems.	X			
IMS	CAN	19	4.14 1st sent. 4.14 last sent.	Replace the word 'required' with 'recommended'. The management system requirements of GS-R-3 can still be mentioned in 4.13 but make the requirement for integration a recommendation only. Change appendix 2 to appendix 5.	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. Please check, I think the wrong appendix is being referenced.	X X	"As stated in GS-R-3 [8] an integrated management system is required …" Appendix 5 deleted		
clar	GER2	28	4.14	1st sentence: "As stated in GS-R-3 [8], a~~A~~n integrated management system (including safety, health, environmental, nuclear security, quality and economic	In a Safety Guide, usually recommendations (or "should" statements) are provided. Modify wording to emphasize	X	See Canada comments 18 and 19		

Type	MS	No.	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
				elements) is required to be established, implemented, assessed and continually improved by the operating organization. ~~and I~~ It has to ~~should~~ be applied to all steps of the predisposal management of radioactive waste ~~[8]~~ [4]."	that two requirements (or "shall" statements) are cited here. The respective requirements should be addressed in two separate sentences.				
clar	GER2	29	4.14	3rd sentence: "Management systems should make provision for siting, design, construction, commissioning, operation, maintenance and decommissioning of the predisposal radioactive waste management facility."	For completeness. The Draft Safety Guide DS441 "Construction for Nuclear Installations" provides specific recommendations on the management system for the construction of nuclear installations. Remember that the revised definition of the term 'nuclear installation' includes facilities for the predisposal management of radioactive waste arising from nuclear fuel cycle facilities.	X			
clar	GER2	30	4.14	last sentence: "Examples of management system lifetime provisions are provided in App. ~~2~~ 5."	Wrong App. is cited in this Para.	X	Appendix 5 deleted		
edit	JAP	E3	4.14 Line 2 (p.17)	**The** ~~M~~management systems should make provision for	Editorial	X	See Canada comment 19		
edit	JAP	E4	4.14 Line 2 (p.17)	…provided in App. **5** ~~2~~.	Editorial	X	Appendix 5 deleted		
edit	CAN	19a	4.15 1st sent.	Change "… management facilities are maintained,…" to "…management facility is maintained,…".	Since management system is singular then typically it is one waste management facility. However, if the intention was to mean that there could be	X	See Canada comment 20		

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					multiple facilities under one management system, then this comment can be disregarded.				
edit	GER3	31	4.15	1st sentence: "The management system should be designed to ensure that the safety of the radioactive waste management facilities ~~are~~ is maintained, …"	Grammar.	X	See response to Canada comment 20		
edit	IND	8	4.15	The management system should be designed to ensure that the safety of the radioactive waste management facilities are maintained, and that the quality of the records and of subsidiary information on radioactive waste inventories is preserved, with ~~account taken of~~ the duration of the management and storage periods and the consecutive management steps are taken into account, for example, clearance, release, discharge, reprocessing or disposal. The management system should also include provision to ensure that the fulfilment of its goals can be demonstrated.	Paraphrasing for better expression	X	See response to Canada comment 20		
clar	UK	53	4.15	*Management of radioactive wastes can take place over long timescales. In such circumstances the government, regulators, waste owners and site operators should address the sustainability of all the required resources to maintain safety and environmental protection in appropriate*	Improved scope and clarity.	X	See response to Canada comment 20		

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Type	MS	No.	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
				policies, strategies and plans.					
clar	CAN	20	4.16	Move the wording for this section to section 4.14 after the first or second sentence. (Note this will eliminate 4.16).	Section 4.16 is simply a reason for integrating the various management systems and therefore fits better at the beginning of 4.14 where 'integrated management system' is introduced.	X			
Sc/str	UK	54	4.16 and 4.17	Delete	The guidance contained within these paragraphs (on the topic of Management Systems) is adequately covered in other Safety Guides, which are appropriately referenced in paragraph 4.10.	X	See response to Canada comment 20		
clar	CAN	21	4.17 1st sen.	Add the words "should integration be decided" after "…integrated management system".	To coincide with comment #1 (integration should be a recommendation not a requirement - see comment #1 for more information).	x	For achieving and maintaining an integrated management system the following long term aspects (taking into account the duration of waste processing and storage periods) should be considered.		
edit	CAN	22	4.17	4.17 is now 4.16 due to comment #6.		X	Earlier 4.16 was inserted as a new 4.14 therefore 4.17 remains 4.17		
edit	GER3	32	4.17 (b)	"Retention or transfer of ownership of radioactive waste and predisposal management facilities;"	Wording.	X			
clar	GER2	33	4.17 (e)	"Provision of adequate financial resources (the adequacy of resources	It is understood that item (e) deals with financial resources	X			

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Type	MS	No.	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
				for maintenance and eventual decommissioning of facilities and equipment may need to be periodically reviewed over operational periods that may extend over decades); and …"	since the provision of human resources is already covered in items (a) and (c).				
clar	USA	11	4.17 (f), P. 17	Modify bullet to read: (f) Preservation of records and information	Completeness to include preservation of records.	X	Preservation and quality of records and information		
clar	UK	55	4.18	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			
ar	CAN	23	4.19	Also highlight financial guarantees.	Organizations which drift into financial difficulties typically also have problems with regulatory performance.	X	Management of radioactive wastes can take place over long timescales. In such circumstances the government, regulators, waste owners and site operators should address the sustainability of all the required resources to maintain safety and environmental protection in appropriate policies, strategies and plans.		
edit	IND	9	4.19	~~Where~~ If the management of radioactive waste is anticipated to be multi-decade, then the government has to ensure ….	Grammatical correction	X	See response to Canada comment 23		
Sc/str	UK	56	4.20 and	Delete	These paragraphs are concerned	X			

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Type	MS	No.	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
			4.21		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.				
clar	IND	10	4.21	Management systems should also be reassessed [by whom] whenever ….	Need to be specified.	X	See response to UK comment 56		
clar	GER2	34	4.22	1st sentence: "In the design of facilities for the long term predisposal management (processing, storage) of radioactive waste ~~management~~, consideration should be given to the incorporation of measures that will ease operation, maintenance of equipment and eventual decommissioning of the facility."	In fact, the recommendations provided in Paras 4.22 and 4.23 of this document 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 both paragraphs relates to processing (i.e. pretreatment, treatment and conditioning) and storage. This should be clarified by the proposed insertion. In Paras 3.13 and 6.16 of this document, the above-mentioned phrase relates to disposal as the final management step.	X	In the design of radioactive waste management facilities to be operated over a long period (e.g. long term radioactive waste storage facilities that remain at the site after other facilities have been permanently shut down)		
clar	CAN	24	4.23	Consider adding section with similar text to DS448 section 4.19	To include future possibility of waste relocation	X			
edit	IND	11	4.23	Consideration should also be given to the need ~~to~~ of developing monitoring programmes and inspection techniques	Preposition correction			X	Ok in the current context

Type	MS	No.	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
				for use during extended periods of storage.					
clar	GER2	36	4.24	Include new 3rd 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).	X	Records concerning the radioactive waste that 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). 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.		
edit	GER3	35	4.24	1st sentence: "… the likelihood and consequences of loss, damage or deterioration due to unpredictable events such as fire, flooding or other natural or human ~~initiated occurrences~~ induced hazards."	Consistency with the terminology used elsewhere in this document (compare with Paras 6.76 (e), (f) and 6.85 (b)) as well as in the Safety Requirements NS-R-3 and subordinated Safety Guides.	X	See response to Germany comment 36		
edit	IND	12	4.24	Records concerning the radioactive	Paraphrasing for better	X	See response to Germany		

Type	MS	No.	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
				waste and its storage that need to be retained for an extended period should be stored ~~in a manner~~ properly such that ~~minimizes~~ the likelihood and consequences of loss, damage or deterioration due to unpredictable events such as fire, flooding or other natural or human initiated occurrences can be minimized.	expression		comment 36		
clar	UK	57	4.24	*"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	See response to Germany comment 36		
clar	UK	87	Req. 14	Add "commissioning".	Active commissioning of a facility can generate radioactive wastes, so is relevant to this requirement.			X	Requirements are fixed
edit	CAN	25	Req. 22 P. 19	The statement for the Requirement 22 is not the right one, please revise	The current statement is for Requirement 21	X			
clar	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	The designation of safety SSCs is one of the outcomes of the safety assessment Ch 6 addresses specific design details
clar	UK	58	5	This section could be made more concise and better targeted if it focused on issues specific to the management of	The original text contains a significant amount of guidance that is applicable to all activities	X	Section is restructured. See responses to specific comments		

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Type	MS	No.	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
				radioactive wastes. The Guidance on the Management of Higher Activity Wastes that has been produced jointly by the ONR and the Environment Agencies in the UK could provide a useful template to follow.	with any type of nuclear matter and is adequately covered in other Safety Guides.				
clar	UK	59	5	This section could be strengthened by inclusion of some 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 – ranging from spent fuel to VLLW and wastes that may ultimately be released from any regulatory controls. Some of the described approaches would be disproportionate for those facilities that deal with relatively low hazard material.	X	Section is restructured. See responses to specific comments		
edit	GER3	37	5.02	1st sentence: "Prior to authorization of a radioactive waste management facility or a facility that generates radioactive waste, the operating organization should provide the regulatory body with a safety case and supporting safety assessment that demonstrate~~s~~ the safety of the proposed activities and demonstrate~~s~~ that the proposed activities will be in compliance with the safety requirements and criteria set out in national laws and regulations." last sentence: "The operating	Consistency with the wording used elsewhere in this document (compare with Paras 5.4, 5.5 and 5.9). The safety case will normally include the findings of a safety assessment. Wording.	X X	The safety case includes a safety assessment, which typically contains an analysis… The operating organization may wish to set an		

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				organization may wish to set an operational target level below the specified limits ~~and controls~~ to assist in avoiding any breach of those that may be approved."			operational target level below the limits and controls to assist in avoiding any breach of those that may be approved.		
calr	USA	12	5.02, P. 20, Lines 2, 7	Line 2: After safety case add: "or safety analysis report (SAR), Line 7: change "operating target levels, blow the limits.." to "operating action levels, or safety target levels, below the limits.."	Completeness and use of appropriate expression.	X		X	See German comment 37
edit	GER3	38	5.03	1st sentence: "… radioactive waste management systems within the facility (NS-R-5, SSG-5, SSG-6, SSG-7) …"	Editorial.	X	Paragraph restructured		
clar	GER2	39	5.04	1st sentence: "For waste generated within a fuel cycle facility, the safety case ~~for the fuel cycle facility~~ should identify interfaces between the radioactive waste management facility and operational limits and conditions of the fuel cycle facility."	Clarification. This section deals with the safety case for a predisposal radioactive waste management facility.	X			
clar	UK	60	5.05	Delete	This paragraph is not specific to the management of radioactive wastes. 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	X			

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					carrying out its work with an adequate degree of safety.				
clar	UK	61	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 documentation…etc"*	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.	X	Sentence added to 5.2		
clar	GER2	40	5.06	"The safety case should include identification of uncertainties in the performance of the waste management facility and related 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. Guidance on the management of uncertainties is provided in GSG-3 [29]."	1st sentence: Clarification and completion. Compare with e.g. Para 4.6 (third bullet and last but one bullet) of GSG-3. 2nd sentence: Make clear that the safety cases for the waste management facility and the nuclear fuel cycle facility are usually interlinked. last sentence: Include reference to GSG-3 in order to guide the reader of this document.	X			
clar	USA	13	5.06, Last sent., P. 21	Modify last sentence to read: Such uncertainties should focus on examination of inputs and interdependence of safety case options	Correctness: Uncertainties are mostly related to inputs into the safety case and multiple scenario, or safety argument, options.	X	See response to Germany comment 40		
edit	GER3	41	5.07	1st sentence: "As stated in GSG-3 [26],	Include reference for	X			

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				compliance with the requirements for the documentation of a safety case presents …"	completeness.				
edit	JAP	E5	5.07 Line 1 (p.21)	As stated in GSG-3**[26]**,	Editorial	X			
clar	UK	62	5.07 & 5.8	Delete.	The proposed paragraphs do not add anything useful. The proposed 5.8 is too general and misses many essential elements of a safety case such as the identification of safety related Systems, Structures and Components, minimum manning levels, maintenance and testing. It is noticeable that these Paragraphs have been omitted from DS448.	X	5.8 deleted. See comments from Finland and USA		
clar	FIN	2	5.07 P. 21	As stated in GSG-3, compliance with the requirements for the documentation of a case presents a number of challenges; for example~~, due to the target audience being composed of a wide range of interested parties with different needs, expectations and concerns, as well as due to situations in which there are complex legal and regulatory requirements involving multiple regulatory agencies with different regulatory processes and where multiple levels of documentation are required. It should be noted that the~~	The text can be simplified. Add also security concerns.	X	See UK comment 62		

Type	MS	No.	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
				~~regulatory authorities involved in the authorization of nuclear fuel cycle facilities are often larger in number due to the greater scope of safety concerns, for example, the management of large quantities of toxic and reactive chemicals.~~ the authorization of nuclear fuel cycle facilities are often larger in number due to the greater scope of safety and security concerns, for example, the management of large quantities of toxic and reactive chemicals.					
clar	USA	14	5.07, last sent.	Modify last sentence to read: … greater scope of safety concerns due to management of large quantities of toxic materials in addition to management of radioactive materials.	Completeness: Safety concerns are due to both toxic chemicals as well as SF radioactive materials.	X	See UK comment 62		
clar	GER1	42	5.10 after	In the subsection "Safety case", 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				

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					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 activity inventory served only a a rough guide).				
clar	UK	63	5.10	Re-word third sentence to: *"In such circumstances, reasonably practicable measures should be taken to maintain adequate safety of the facility".*	To improve on the grammar and clarity of the original text.	X			
clar	CAN	27	5.12 (f) to (i)	Descriptions of these bullets need to be included (after 5.25)	Consistency - completion of all bullets (only descriptions of bullet (a) to (e) are provided from pages 22 to 24)			X	Section restructured; para deleted
clar	ENISS	2	5.12	Add: (j) Identification of structures, systems and components important to safety and their safety requirements	Missing . SSC should be introduced here			X	Section restructured; para deleted
clar	FRA	4	5.12	Add: (j) Identification of structures, systems and components important to safety and their safety requirements	Missing . SSC should be introduced here			X	Section restructured; para deleted
clar	UKR	5	5.12 (f) & (g) p. 22	(f) Evaluation of results and comparison with safety criteria to determine the acceptability of the safety level achieved; (g) Analysis of safety measures and engineering aspects, identification of necessary improvements and additional measures	It seems that evaluation of results shall include comparison with assessment criteria as well.			X	Section restructured; para deleted
clar	GER2	43	5.14 (a)	"Site conditions and the associated ~~events, both~~ natural and human	Clarification and consistency with the terminology used	X			

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				induced~~,~~ hazards of external events that could influence the safety of the facility or related activities;"	elsewhere in this document (compare with Paras 6.76 (e), (f) Sand 6.85 (b)) as well as in the Safety Requirements NS-R-3.				
Clar	UKR	6	5.14 (c) p. 22- 23	A description of radioactive waste to be managed, including data on the radioactive waste streams (e.g. ……)	For consistency	X			
clar	CAN	26	5.14 (c)	In addition to volume, mass should also be included.	Mass also required for the waste management	X			
clar	UKR	7	5.15 p. 23	Add before the words "quantities, chemical and radiological characteristics…." the following: "A description of the activities, including "	For consistency	X			
clar	GER2	44	5.17	"A set of scenarios should be developed to cover a range of situations arising during normal operations and as a consequence of a postulated initiating event (e.g., operational events, external events of natural or human-induced~~, natural phenomena, or external~~ origin) that could lead to a deviation from normal operation conditions."	To maintain consistency with the terminology used elsewhere in this document (compare with Paras 6.76 (e), (f) and 6.85 (b)) as well as in the Safety Requirements NS-R-3. External events could be of natural or human induced origin.			X	Section restructured; para deleted
edit	IND	15	5.17	The design shall include due consideration of those natural and human induced external events (i.e. events of origin external to the plant) that have been identified in the site evaluation process. Natural external events, including meteorological, hydrological, geological, and seismic events, ~~shall be addressed, including~~	improving the expression			X	Section restructured; para deleted

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				~~meteorological, hydrological, geological, and seismic events.~~ and human induced external events arising from nearby industries and transport routes shall be addressed. ~~In the short term, the safety of the plant shall not be permitted to be dependent on the availability of off-site services such as electricity supply and firefighting services.~~ The design shall take due account of site specific conditions to determine the maximum delay time by which off-site services, i.e. electricity supply and firefighting services need to be available.					
edit	IND	13	5.19	GSG-3 identifies the general criteria and methodology that should be used to screen the hazards within facilities in general. For individual facilities, the decision making process should be performed to identify the screening criteria specific to its operations and materials based on safety and environmental limits set down for that facility	Paraphrasing for better expression			X	Section restructured; para deleted
clar	GER2	45	5.19 (a)	"Identification of hazards and initiating events: … should identify where initiating events (e.g., operational events, external events of ~~or~~ natural or human induced origin ~~phenomena~~) could create the potential for causing harm to human health and/or the environment."	To maintain consistency with the terminology used elsewhere in this document (compare with Paras 6.76 (e), (f) and 6.85 (b)) as well as in the Safety Requirements NS-R-3. External events could be of natural or human induced origin.			X	Section restructured; para deleted

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clar	FRA	5	5.19 (c) and (d)	(c) GSG-3 identifies the general criteria and methodology that should be used to screen …..on safety and environmental limits set down for that facility. The process of identification and screening of hazards should consider the complexity of the facility or activity, as well as the evolution of hazards and risks over the lifetime of the facility or activity, and should be consistent with the regulatory framework. (d) Identification of scenarios: …. that evolve significant chemical and physical processing, material transfer and human intervention. ~~The process of identification and screening of hazards should consider the complexity of the facility or activity, as well as the evolution of hazards and risks over the lifetime of the facility or activity, and should be consistent with the regulatory framework~~.	For clarification				
edit	JAP	E6	5.19(c) Line 1 (p.23)	GSG-3**[26]** indicates…	Editorial			X	Section restructured; para deleted
edit	GER2	46	5.20	"App. ~~3~~ 2 provides examples of hazards associated with typical activities for predisposal management of radioactive waste in fuel cycle facilities. App. ~~4~~ 3 provides examples of hazards associated	Wrong appendices are cited in this Para.	X	Appendices re-ordered; current identification is correct		

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				with dedicated waste management facilities. App. ~~5~~ 4 identifies hazards associated with, or that could affect waste management at typical fuel cycle facilities. …"					
clar	JAP	E7	6	INTRODUCTION → GENERAL	GENERAL may be more appropriate. Check the titles of subsection in other Safety Guides. (e.g. RS-G-1.7 uses "General.")	X			
clar	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.			X	Immobilization is part of conditioning and decommissioning is not part of predisposal management
clar	CAN	28	6.01	Start with ' As per the IAEA safety glossary definitions ,….', also include waste handling in the list	Set up comes from the glossary; handling should be included			X	Term is defined in Ch 1 (consist w GSR Part 5)
clar	GER1	47	6.01	"The steps involved in the predisposal management of radioactive waste are: • assessment of potential waste arisings and evaluation of options for their long term management (disposal) • waste generation and control • processing …"	For completeness. In a first step, it is necessary to assess potential types and volumes of radioactive waste to be generated, and to evaluate options for the safe disposal of this waste. In a second step, measures to control the generation of radioactive waste, in terms of type, activity and volume, are to be considered before the construction of a nuclear installation, beginning with the design phase.	X			

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					With regard to our proposal, see also the IAEA resolution table of WASSC members comments on DS448 (June 2013), comment No. 8 provided by the USA. This comment has been accepted and implemented in DS448 (see Para 6.1) but it is likewise relevant for DS447.				
clar	UK	64	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
edit	GER3	48	6.02	2nd sentence: "Therefore the radioactive waste has to be categorized and characterized throughout the steps of its predisposal management ~~of radioactive waste~~."	Wording.	X			
clar	UK	65	6.03	Delete from the first sentence *"(or for storage if no disposal facility is available)"*.	The ultimate goal for processing is almost never storage, even when a disposal facility is not presently available. This statement is inconsistent with requirements elsewhere in the report that require the operator to consider disposability even when a disposal system does not currently exist.	X	Modified to "(and for storage if no disposal facility is available)."		
clar	ENISS	3	6.03	"… make the waste suitable for disposal, in accordance to disposal facility Waste	Accuracy	X			

Type	MS	No.	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
				Acceptance Criteria..” This implies that the final waste form and waste package have to comply with..”					
clar	FRA	6	6.03	“… make the waste suitable for disposal, in accordance to disposal facility Waste Acceptance Criteria..” This implies that the final waste form and waste package have to comply with..”	Accuracy	X			
clar	FIN	3	6.03 P. 26	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 and long-term operational safety requirements of the disposal facility.	Also the long-term operational safety aspects should 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	The WAC is based on the safety case for the disposal facility, which addresses long term safety
clar	FRA	7	6.03	This implies that the final waste form has to comply with the waste acceptance requirements of the disposal facility as well as of the storage facility	It is important to emphasize that waste may be accepted in storage facilities only if the waste form or the waste package comply with dedicated acceptance criteria, which may be different from those applying to disposal.	X			
clar	UK	66	6.04	Please amend the paragraph to make it clearer that of the quoted approaches, recycling and re-use are preferable to final disposal.	A key point is that the options of recycling, re-use and decontamination are preferable to final disposal on the grounds of waste minimisation. The	X			

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					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'.				
wms	RUS	4	6.06.-6.8.	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 also through facility lifetime (siting, construction, operation and decommissioning).	X	New 6.6: "Predisposal management of radioactive waste should include specific measures to control the generation of waste throughout the lifetime from the design to the decommissioning of the facility."		
edit	GER3	49	6.06	"… for waste generation and control (NS-R-5, SSG-5, SSG-6, SSG-7) …"	Editorial.	X			
clar	UK	67	6.06 (b)	*"The selection of design options that facilitate waste minimization throughout the facility's entire lifecycle, including its final decommissioning."*	Plant design can have an important impact on waste minimization during the operational phase of a facility's life, as well as during decommissioning (eg by minimising the amount of contamination spread).	X			
clar	UK	68	6.06 (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 *the*	X			

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Type	MS	No.	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
					spread of contamination.				
clar	CAN	30	6.06 (e) & (f)	During the design of the nuclear fuel cycle facility, 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			
clar	USA	17	6.06, P.28	At end of Para add: Alternate to GSG-1 waste classification scheme, country specific waste classification scheme may be developed and adopted by certain States	Flexibility for countries using other waste scheme classification than GSG-1.	X			For discussion w WASSC
wms	CAN	31	6.08	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	Inserted "to allow reclassification of the waste at a lower level or to"		clarification
clar	GER2	50	6.09	"As stated in GSR Part 5 [4], r~~R~~adioactive waste is required to be characterized at the various stages in its predisposal 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			

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Type	MS	No.	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
edit	CAN	32	6.09 1st sent.	'….characterized at various stages….'	Remove "the" which implies it must be characterized at each stage	X			
WMS	IRQ	9	6	A description on 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	Characterization is covered in sections 6.10-6.20 Acceptance criteria is covered in sections 6.56 – 6.61		See specific comments on those sections
clar	CAN	33	6.10	Add bullet point ' Waste form (solid, liquid, gaseous)'	Has not been mentioned	X	Its origin;, the waste type and the physical state of the raw waste (solid, liquid, gaseous);		
clar	RUS	5	6.10	(a) Its origin, ***amount, type, category and physical state;***	Amount, type, category and physical state (liquid, solid, gaseous) are important characteristics	X	See response to Canada comment 33		
clar	RUS	7	6.10	(c) Its radiological properties (e.g. ***radionuclide inventory***, dose rates);	Term "radionuclide inventory" covers half-life, activity and concentration of nuclides			X	Inventory is non specific
Clar	UK	69	6.10 (c)	Add heat generation to list in parenthesis	omission	X			
clar	RUS	6	6.10	(d) Other physical properties (e.g. size and mass, compactibility, solubility);	Solubility seems to be not physical property	X	Added to (e)		
clar	RUS	8	6.10	(e) Chemical properties (e.g. …corrosion ***properties***…);	To be exact, it is the corrosive activity of wastes which should be considered, i.e. the capability of wastes to cause corrosion	X	"corrosion related properties.,…"		
Clar	USA	15	6.10, P. 27	Add two new items: (h) Waste class or category (i) Physical form including liquid/moisture content	Completeness	X	See responses to other MS comments on bullets		

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Type	MS	No.	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
Clar	CAN	34	6.12	Add to the end of the last sentence "…..and accepted by the waste receivers."	The method should be accepted by the waste receivers.			X	Covered in 6.55-6.59
clar	UK	70	6.12 line 8	Replace "approved by" with "acceptable to"	The word approval has specific meaning in the UK regulatory system and would not generally be applied to waste characterization	X			
edit	GER3	51	6.13	Note: Almost the same text is provided in Para 6.55 (3rd to 6th sentence). Shortening or deletion of Para 6.13 is recommended.	Avoid unnecessary repetition. In our opinion, the text is better placed in the subsection "Radioactive waste acceptance criteria".	X	6.13 Deleted		
c.ar	CAN	35	6.13 2nd sent.	"Radioactive waste, for instance, may be conditioned to meet the acceptance……"	Not all radioactive waste will require conditioning, therefore the use of "may" is more appropriate		See response to Germany comment 51		
clar	UK	71	6.14	ditto	ditto	X			
clar	GER2	52	6.15	2nd sentence: "Segregation of waste with different properties will also be helpful at any stage between the arising of the raw waste and its further processing ~~conditioning~~, storage, transport and disposal."	According to the IAEA Safety Glossary (2007 Edition), the term 'processing' is more comprehensive and includes 'pretreatment', 'treatment' and 'conditioning'. As mentioned in Para 6.24, segregation of radioactive waste is part of pretreatment operations.	X	Replaced "conditioning" with "processing"		
wms	USA	16	6.15, P. 28, Last sent.	After last sentence, add: Mixing or blending of waste at its waste stream generation may be allowed by regulatory authorities in order to enhance and facilitate waste disposal.	Completeness to add flexibility for blending of waste as permitted by regulatory authorities to facilitate waste safe disposal.	X			For discussion w WASSC

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Type	MS	No.	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
edit	GER3	53	6.16	1st sentence: "… are provided in GSG-1 [9]; Annex III of which also provides information on origin and types of radioactive waste, including waste arising from nuclear power production and other activities in the nuclear fuel cycle."	This document deals with the predisposal management of all types of radioactive waste generated by nuclear fuel cycle facilities (excluding nuclear power plants and research reactors).	X			
clar	FRA	8	6.18	~~To the extent possible, liquid waste should be processed and conditioned (eg. Through immobilization, etc.) to promote safe handling and disposal~~.	Processing and conditioning of waste is not in the scope of "characterization and classification of waste" but in the following part "Processing of radioactive waste" (liquid waste conditioning already in 6. 47)	X	Changed to "Liquid radioactive waste should be characterized on the basis of its radiological and chemical properties for classification, segregation and processing purposes according to its activity concentration levels and its content of chemical substances. For instance, radioactive waste containing organic matter such as oil may need special treatment."		
edit	GER3	54	6.18	last sentence: "To the extent possible, liquid waste should be processed and conditioned (e.g., through immobilization, etc.) to promote safe handling, storage and disposal."	Completeness with regard to the further steps involved in the management of radioactive waste.	X	See response to France comment 8		
clar	UK	72	6.19	Replace by equivalent Para (6.27) of DS448, which has two separate sentences and is clear.	As written it is confusing as the second clause relates to segregation but reads as a qualification of classification.	X			
wms	USA	18	6.20,	At the end of Para 6.20,add:	Completeness	X			

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Type	MS	No.	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
			Line 29	Blending of waste at point of origin may be permitted to facilitate its disposal.					
edit	CAN	36	6.21 P. 29	Remove heading 'Introduction'	Not required.	X			
clr	CAN	37	6.21 line 3	Change 'will' to 'may'	Each step may not always be required, depending on the facility. i.e., may go straight to disposal	X			
clar	USA	19	6.21, line 2, P. 29	Line 2: (e.g.; add decay-in-storage; pretreatment, treatment, and conditioning).	Completeness to include decay-in-storage as part of predisposal management of radioactive waste.			X	Included in treatment
clar	FIN	4	6.22 pp 29-30	If no disposal facility is available for the waste, specific assumptions should be made on future ~~requirements for the acceptance of the waste for~~ waste disposal requirements in order to provide guidance for ~~its~~ waste management.	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") can, however be determined for example based on the available geological formations in the country and on the chosen concept of the facility.	X	See response to Germany comment 55		
clar	GER2	55	6.22	2nd sentence: "If no disposal facility is available, reasonable assumptions should be made on the requirements for the acceptance of the radioactive waste in the future at a repository in order to provide guidance for its ~~predisposal management~~ processing, which may	In our opinion, the possible need for provisions for long term storage is better placed here (instead of the end of Para 6.23) since the text addresses the case that a disposal option for the radioactive waste will not exist in	X			

Type	MS	No.	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
				include provisions for long term storage."	the near future. Regarding the assumptions made on the requirements for waste acceptance, it is more important to be reasonable than to be specific when no disposal facility is available.				
clar	UK	73	6.22	*"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	See response to Germany comment 55		
clar	FIN	5	6.23 P. 30	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	See response to Germany comment 56		
edit	GER3	56	6.23	"Radioactive waste should be processed as early as practicable 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~~."	Although true, nevertheless we prefer to move the phrase "which may include provisions for long term storage" to the end of Para 6.22 (see our related comment on this Para). With this deletion, the recommendation itself is not unduly weakened since the key message remains unchanged.	X	See response to Finland comment 5		

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Type	MS	No.	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
clar	UK	74	6.23	Please add further guidance, or a reference to further guidance in another document, on the concept of passive safety.	It is likely that some readers will not have a full appreciation of what is meant by the term "passive safe state".	X	Term changed to "Passive form"		See responses to comments by Finland and Germany
clar	GER2	57	6.24	2nd sentence: "Pretreatment 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			
edit	GER3	58	6.25	2nd sentence: "Radioactive waste containing predominantly short lived radionuclides should not be mixed with ~~long lived~~ waste containing long lived radionuclides."	Wording.				
clar	JAP	4	6.25	Comment Sentences should be reviewed so as not to misunderstand as follows; "Short lived rad-wastes mixed with long lived rad-waste should be segregated although it is technically difficult to segregate thing including short lived wastes and long lived waste in the first place."	We agree that rad-waste containing predominantly short lived RNs should not be mixed with long lived waste as a general rule. However, the sentence might be misunderstood as follows; "Short lived rad-wastes mixed with long lived rad-waste should be segregated although it is technically difficult to segregate thing including short lived wastes and long lived waste in the first place."	x	Text changed to "Radioactive waste containing predominantly short lived radionuclides should not be mixed with waste containing long lived radionuclides."		clarity

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Type	MS	No.	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
clar	CAN	38	6.26 line 2	Change 'segregation is' to 'segregation can be'	Segregation may be based on other factors – radiological, chemical or physical properties.	X			
wms	AFG	4	6.26 After New	The volume of organic radioactive liquid waste is small compared to that of aqueous radioactive waste although the risk associated with its improper management may be high. Organic 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.	Aqueous waste may be discharged to the environment after the radioactivity has decayed or been removed by treatment. By contrast, organic liquid	X			
clar	RUS	9	6.29	6.29 Mixing waste streams ***with other radioactive or non-radioactive wastes (or materials) to facilitate subsequent management or for safety considerations*** should be limited to those streams that are radiologically and chemically compatible. ***Mixing of waste streams with dissimilar or incompatible properties should be***	Supplements of clarifying and complementary nature.	X	Mixing waste streams should be limited to those streams that are radiologically and chemically compatible. If the mixing of chemically different waste streams is considered, an evaluation should be made of the		See UK comment 75

Type	MS	No.	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
				prevented.			chemical reactions that could occur, especially any exothermic reactions in order to avoid uncontrolled or unexpected reactions that could cause the unplanned release of volatile radionuclides or radioactive aerosols.		
clar	UK	75	6.29	*"If the mixing of chemically different waste streams is considered, an evaluation should be made of the chemical reactions that could occur, especially any exothermic reactions….."*	If exothermic reactions arise, they may create the risk of a nuclear fire.	X	See response to Russia comment 9		
clar	CAN	39	6.30	Suggest including other examples or making sure it is noted that these are only some of the methods	Limited list – as an example thermal treatment options, and supercompaction for volume reduction have not been considered	X	See response to USA comment 20		
clar	USA	20	6.30, P. 31	Modify (d) Change of the form or physical properties of waste (by …) Add a new item as given below: (e) Thermal treatment and steam reforming processes	• Proper use of terminology • Thermal treatment and steam reforming are important well known waste treatment processes.	X			
clar	ENISS	4	6.33	"… increase of the activity concentration in ashes…	Accuracy	X	See Germany comment 59		
clar	FRA	9	6.33	"… increase of the activity concentration in ashes…	Accuracy	X	See Germany comment 59		
clar	GER2	59	6.33	3rd sentence: "It should be noted, that incineration will result in the increase of the activity concentration levels in the	Clarification.	X			

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Type	MS	No.	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
				ash which might result in a change of the waste class."					
clar	USA	21	6.35, P. 32	Add a new item: (e) **avoid** as practicable generation of HLW	Completeness	X	Criticality safety considerations when waste that contains fissile material is compacted into a single waste package.		
wms	AFG	5	6.37	Explanation require regarding chemical adjustment, size reduction, packaging and decontamination.				X	Detail not intended
edit	UKR	8	6.37 p. 33	Delete "Liquid waste and discharges" after para 6.37	Duplication (see the footnote after para 6.40)	X			
edit	CAN	40	6.41	Remove heading 'Liquid waste and discharge'	Duplication	X			
edit	GER3	61	6.40 after	The heading "*Liquid waste and discharges*" should be deleted here.	This heading exists twofold. The related subsection begins with Para 6.38.	X			
edit	USA	22	P. 33	Two subtitles *"Liquid waste and discharges" appear on* P. 33. Please remove 2nd subtitles.	Remove duplication and redundancy	X			
Edit	RUS	10	6.40	~~*Liquid waste and discharges*~~	Repeated two times	X			
edit	JAP	E8	6.41 Above	Delete *"Liquid waste and discharges."*	This title is repeated.	X			
edit	GER3	60	6.40	1st sentence: "~~Where appropriate s~~Spent ion exchange resins are usually flushed out as slurry and subsequently managed as liquid waste, although some operators retain the resins as a dry solid."	Clarification.	X	See Japan comment 5		
clar	JAP	5	6.40	Comment We understand that there is a same sentence "*spent ion exchange resins are usually flushed out as slurry and*		X	See Germany comment 60. Inserted "until the resin can be separated from the carrier liquid"		Typical activity in countries with VVER reactors

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Type	MS	No.	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
				subsequently managed as liquid waste" on para. 5.27 in WS-G-2.5. , we would like to know which country manages spent ion exchange resins as liquid waste.					
clar	UK	76	6.42 After	Consider inserting new Para: *"For routine discharges of radioactive liquids to the environment, there are two main types of control options. An operator may provide interim storage facilities, to allow short lived radionuclides to decay before release, or treatment facilities that remove radionuclides from the effluent stream for disposal by other means. Within these two broad categories there may be a number of different options available. The limitations and controls for such releases should be set by the regulatory body."*	Omission of useful addition included in DS448			X	More applicable to reactors
clar	USA	23	6.42, P. 33, Line 1	Modify 1st sentence to read: "All discharged liquids should be readily soluble in water."	Technical Correctness: Dispersible material may sequester and coagulate. Discharged materials should be readily soluble.	X			
clar	GER1	62	6.44	"Radioactive particulates and aerosols in gaseous effluents may be removed by filtration using high efficiency particulate air (HEPA) filters. Iodine ~~and noble gases~~ can be removed by charcoal filters ~~or~~ and noble gases can be delayed by sorption beds charged with activated	Noble gas fission products such as Kr-85 ($T_{1/2}$ = 10.7 years) and Xe-133 ($T_{1/2}$ = 5.2 days) can be removed from gaseous effluents neither by charcoal filters nor by HEPA filters. They can only be delayed by charcoal beds	X			

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Type	MS	No.	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
				charcoal. …"	through dynamic adsorption prior to discharge to the atmosphere. The adsorber delays the passage of fission gases until they have decayed sufficiently (except for Kr-85). The retention time required depends upon the concentration of fission gases entering the adsorber and upon the allowable concentration leaving. With regard to our proposal, see also the IAEA resolution table of WASSC members comments on DS448 (June 2013), comment No. 2 provided by Korea. This comment has been accepted and implemented in DS448 (see Para 6.53) but it is likewise relevant for DS447.				
clar	JAP	6	6.44	Iodine and noble gases may also ~~can~~ be removed by filters or sorption beds charged with activated charcoal.	Filters cannot remove all noble gases (ex. Ar gas).	X	See Germany comment 62		
clar	UK	77	6.44 After	Add an additional Paragraph: *For both liquid and gaseous discharges the 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*	Possible omission			X	Part of the RP program

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Type	MS	No.	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
				groups at particular risk as a result of the discharge					
clar	CAN	29	6.48 (e)	Remove "for the required period of time"	It is not known how long each waste matrix will last.			X	Part of the waste package design and facility WAC
clar	ENISS	5	6.49	"Conditioning of solid waste…"	Correct terminology	X			
clar	FRA	10	6.49	"Conditioning of solid waste…"	Correct terminology	X			
clar	RUS	11	6.49	***Required characteristics of form*** of solid waste should be considered on a case by case basis	Editorial note	X	The required characteristics of the waste form as listed above apply to many…		
wms	SWZ	2	6.53-54 Storage of RW	Requirement 11 (GSR Part 5, Ref. [4]): Storage of radioactive waste Waste shall be stored in such a manner that it can be inspected, monitored, retrieved and preserved in a condition suitable for its subsequent management…	That is not always possible! The waste package can be inspected and monitored, but not the waste itself.			X	GSR Part 5 Requirement Waste = waste package in this instance
wms	UK	78	6.53	Suggest including key points	It is not clear why the topic is covered so briefly, whereas other sections highlight the key points. This approach seems inconsistent.	X			
clar	UK	79	6.56	Delete 1st 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	See Germany comment 63		
edit	GER3	63	6.56	last sentence: "Subsequent to approval by the regulatory body, this programme should be implemented as a measure to confirm the ~~fulfilment of~~ compliance	Wording. The corresponding subsection is entitled "Radioactive waste acceptance criteria". Maintain	X			

Type	MS	No.	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
				with the waste acceptance ~~requirements~~ criteria of the disposal facility."	consistency with regard to terminology.				
edit	GER3	64	6.58	"~~Identification~~ The establishment of waste acceptance criteria enables the effective interlinking of facilities and processes where material is transferred~~ing~~, being held for storage or transported to a disposal facility."	Wording.	X			
clar	UK	81	6.59	Replace with: *"Adequate techniques need to be in place to identify the characteristics of the material to demonstrate that it meets the waste acceptance criteria."*	To match the wording in DS448, which seems more realistic. Mentioning techniques for a future disposal facility to use is not realistic	X			
wms	UK	80	6.55 to 6.59	Please add a new paragraph: *"The operator should put in place contingency measures, that can be relied upon in the event it receives a waste package whose characteristics do not comply with the acceptance criteria. Such arrangements may include; return of the waste to the facility that generated the waste; placing the waste into a safe and secure quarantine area, or; sending the waste to an alternative treatment facility."*	Whilst it is important for waste treatment facilities to have waste acceptance criteria, they should also have systems in place to deal with any waste packages that do not comply with those criteria.	X			
edit	GER3	65	6.62	1st sentence: "Facilities for predisposal management of radioactive waste should be designed: (a) To prevent ~~against~~ dispersion of radioactive material (confinement,	Wording. Non-flammable, inert gases are not explosive also when they accumulate.	X			

Type	MS	No.	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
				cooling, measures against explosive accumulation of flammable gas); (b) To prevent ~~against~~ external exposure (shielding); (c) To prevent ~~against~~ criticality."					
clar	UK	82	6.62 (b)	Insert "radiation" before "exposure"	Missing word	X			
clar	CAN	41	6.63	Add 'criticality safety' to the list In the design of the nuclear fuel cycle facility and waste management facility, due consideration should be given to the need for:	Complete list Add "nuclear" to introductory sentence (i.e. nuclear fuel cycle facility).	X			
clar	CAN	42	6.63 (a)	(a) The control of access to areas for waste processing and storage and the control of movement between radiation zones and contamination control zones;	Add "control" (i.e. contamination control zones).	X			
edit	CAN	43	6.64	Formatting issue: 'Measures considered in the design …' should become 6.65.	Formatting issue	X			
edit	ENISS	6	6.64	The 4th to 9th bullets are sub bullets of the 3rd one (numbered (a)!)	Error of bullet numbering	X			
edit	FRA	11	6.64	The 4th to 9th bullets are sub bullets of the 3rd one (numbered (a)!)	Error of bullet numbering	X			
clar	GER2	66	6.64	In this paragraph, a wrong sequence of items is listed. After Para 6.64, items (a) and (b), a new Para 6.65 should follow: "6.64 Measures considered in the design for the management of gaseous ~~and liquid~~ radioactive waste and effluents should include the following: (a) Provision for radioactive gases to be channelled …; (b) Provision of means, such as stacks	In the existing Para 6.64, measures to be considered in the design for the management of gaseous and liquid radioactive waste are improperly mixed. The respective measures for both kinds of waste should be addressed in two separate Paras 6.64 and 6.65 (compare with the analogous Paras 6.70 and 6.71 of DS448). As a consequence,	X			

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Type	MS	No.	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
				for the ~~release~~ authorized discharge of gaseous ~~low level~~ radioactive waste, and of methods for sampling and monitoring those ~~releases~~ discharges. ~~(a)~~6.65 Measures considered in the design for the management of liquid radioactive waste and effluents should include the following: (~~b~~a) Collection of radioactive liquid effluents to a common point such as a holding tank; (~~c~~b) The potential for re-concentration downstream …; … (~~g~~f) Provisions for treating liquid radio-active waste …; (g) Provisions as necessary for storing spent ion exchange resins and dehydrating liquid waste; (h) Provisions for filtration in liquid waste collection lines to prevent the release of solids.”	renumbering of subsequent paragraphs in Section 6 is required. Item (b) of Para 6.64: This item addresses authorized discharges of airborne effluents (gases, aerosols). New items (g) and (h) of Para 6.65: We recommend to move both the items (f) and (g) of the original Para 6.65 (management of solid waste) to this place since they address, in fact, the management of liquid waste (for justification, see also our next comment).				
edit	JAP	E9	6.64	6.64 Measures considered in the design for the management of gaseous ~~and liquid~~ waste and effluents should include the following:	Editorial	X			
edit	RUS	12	6.64	(a) Measures considered in the design for the management of liquid radioactive waste should include the following:	Typing error. A new item under the number 6.65 with the corresponding headline should be made from the mentioned sub-item (a)	X			

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edit	USA	24	6.64 P. 38	Please review numbering of items (a), (b) and then (a) through (g) under the same paragraphs. It seems that Para 6.64 should be divided into two paragraphs. Para 6.64 should cover only management of gaseous waste with two sub-items (a) and (b). Subsequently a new Para should be added 6.64A: Measures considered in the design for management of liquid radioactive waste including the following: change items below from (a) to (b) and so forth (g) to (f)	Editorial due to mixing of two paragraphs.	X			
edit	JAP	E10	6.64 above second (a)	Insert 6.65(as new para.) Measures considered in the design for the management of liquid waste and effluents should include the following:	Editorial	X			
clar	UK	83	6.64 (e)	Please add a further explanation.	What is meant by a "decay device"?	X	"Provisions for decay devices storage to minimize releases discharges of radioactive material"		
clar	GER2	67	6.65	Note: Items (f) and (g) should be moved to the preceding Para dealing with the management of liquid radioactive waste and effluents.	Consistency with Para 6.40. As mentioned in this Para, spent ion exchange resins are usually flushed out as slurry and subsequently managed as liquid waste. This categorization is supported by IAEA-TECDOC-1504 "Innovative waste treatment and conditioning technologies at nuclear power plants" (2006) and IAEA-TECDOC-1579 "New	X			

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Type	MS	No.	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
					developments and improvements in processing of 'problematic' radioactive waste" (2007). According to them, spent ion exchange resins are managed as liquid (wet) waste.				
clar	CAN	44	6.65 (a)	What does 'amount' refer to?	Not clear if this is volume/weight and volume is size?	X	"amount, physical form, volume, mass, …"		
clar	CAN	45	6.65 (b) & (c)	Suggest combining these as one. 'Consideration of the waste classification'	More consistent	X	end of (c) "… that are associated with higher dose rates;"		
clar	UKR	9	6.65 p. 38	Add after (d) a new bullet "Areas for storage of raw radioactive waste and final product following predisposal management"	For completeness	X	(d) "Areas and tools for handling, temporary storage and loading of waste;"		
clar	CAN	46	6.65 (g)	This bullet also applies to liquid radioactive waste	Filtration is in the active liquid waste system	X	(f) and (g) combined: "Provisions as necessary for handling and storing of filters, resins and residues from liquid waste evaporation; "		
clar	GER2	68	6.67	"The predisposal management of radioactive waste may also entail the management of non-radioactive hazardous material. Measures should be taken so as to ensure that its management is in compliance with the applicable regulations relating to hazardous material and to take account of potential interactions between radioactive and non-radioactive constituents."	Clarification and completion with regard to a suitable handling of non-radioactive hazardous material in the predisposal management of radioactive waste.	X			

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Type	MS	No.	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
clar	RUS	13	6.68	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 wastes go well beyond the mentioned listing.	X	Text inserted: " the safety function of the container should be recognized since"		
clar	ENISS	7	6.70	"The design and operation of waste predisposal facilities …"	Accuracy	X	See Germany comment 69		
clar	FRA	12	6.70	"The design and operation of waste predisposal facilities …"	Accuracy	X	See Germany comment 69		
clar	GER2	69	6.70	1st sentence: "The design and operation of a facility for predisposal radioactive waste management should be carried out in such a way as to ensure subcriticality in both operational states (i.e. normal operation and anticipated operational occurrences) and under accident conditions (i.e. design basis accidents) by means of safe geometrical configurations, limitations on concentrations and inventories of fissile material or the use of neutron poisons."	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. In order to maintain consistency with the Safety Guide SSG-27 (ex DS407) "Criticality Safety in the	X			

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Type	MS	No.	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
					Handling of Fissile Material", it is necessary to specify the plant states for which the statement in Para 6.70 is applicable. According to SSG-27, the criticality safety assessment should demonstrate that subcriticality will be maintained in normal operation, for anticipated operational occurrences and for design basis accidents (or the equivalent). See also our related comment on Para 6.71.				
clar	ENISS	8	6.71	"…the temperature of the waste or waste form within…"	Accuracy	X			
clar	FRA	13	6.71	"…the temperature of the waste or waste form within…"	Accuracy	X			
clar	GER1	70	6.71	1st sentence: "… maintaining the temperature of the waste within acceptable limits in all stages of predisposal management of radioactive waste, both in operational states (i.e. ~~e.g.~~ normal operation and anticipated operational occurrences) and under accident conditions (i.e. ~~e.g.~~ design basis accidents ~~and design extension conditions~~)."	Compare with our comment on Para 6.70. Without the proposed deletion, there is an imbalance between Paras 6.70 and 6.71 with regard to the robustness of the facility towards postulated design extension conditions. 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	X			For discussion w WASSC

Type	MS	No.	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
					radioactive waste management facilities and nuclear fuel cycle facilities. Note that the term is used in Para 6.76, too.				
clar	USA	25	6.73, Line 1, P. 40	Modify line 1 to read: For modular storage systems, most of the commissioning should have been completed on…”.	Language	X			
clar	USA	26	6.74 Line 2, P. 40	Modify 1st sentence to read: Instructions and procedures should be prepared for normal operations of the facility, anticipated operational occurrences and design basis accident conditions and taking into consideration defense-in-depth concept.	Completeness to account for use of defense-in-depth concept beyond design basis.			X	Defense in depth concept is applicable throughout design and operational aspects
clar	CAN	47	6.74 (a)	What does ‘nature’ mean?	Not a term commonly used	X	(a) The type and class of the waste to be stored;		
edit	GER3	71	6.75	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; (~~c~~d) Conditions of optimum moderation and reflection; (~~d~~e) Waste form and waste packages; (~~e~~f) Handling operations; (~~f~~g) The potential for abnormal operation.~~;~~	The items listed in this Para 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			

Type	MS	No.	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
				~~(g) Dependence of subcriticality on neutron absorbers.~~"					
clar	USA	27	6.75 P. 41	Add item (h) defense-in-depth analysis	Completeness	X			
clar	USA	28	6.76 P. 41	Add item: (g) Defense-in-depth analysis beyond design basis	Completeness	X			
edit	CAN	48	6.76 (d)	Missing ')' at the end of the bullet		X			
clar	GER1	72	6.78	"Operational limits and conditions ~~are~~ should be developed on the basis of the ~~facility design, its safety assessment and the result of its commissioning, and usually comprise the minimum staffing requested for safety during operational stage.~~ following: (a) Design specifications and operating parameters and the results of commissioning tests; (b) The sensitivity of items important to safety and the consequences 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	The recommendation provided at the left corresponds to Para 6.102 of the Safety Guide SSG-15 "Storage of Spent Nuclear Fuel". In fact, this is Para 7.36 of the previous draft version dated 25 March 2013. In the current version, this Para has been shortened beyond recognition following the request of ENISS. From a regulatory point of view, the development of operational limits and conditions is clearly a safety relevant topic for which some guidance should 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.	X			

Type	MS	No.	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
				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 needed to operate the facility safely.”					
clar	USA	29	6.78 P. 41	Modify Para to read: 6.78 Operational limits and conditions are developed on the basis of the facility design, the safety case and its safety assessment, and the result of its commissioning, and usually comprise the minimum staffing requested for safety during operational stage. Further, limits may be updated based on defense-in-depth analysis, operational experience, as well as updates of the safety case.	Completeness to consider safety case and its updates, and use of defense-in-depth concept.	x	See Germany comment 72		
clar	GER1	73	6.78 after	In the subsection “Operational limits and conditions”, add a new paragraph 6.79 with the following text: “Operational limits and conditions 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	X			

Type	MS	No.	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
				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.”	previous 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.				
clar	UK	84	6.79 line 1	the maintenance schedule should be derived from the requirements of the safety assessment and should take into	To make it clear that maintenance requirements are rooted in the safety case.	X			
clar	GER2	74	6.79	“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.	X			
clar	FRA	14	6.80	Suitably qualified and experienced operating personal should be deployed in the approval and implementation of the maintenance, inspection and testing programme and in the approval of associated working procedures ~~and acceptance criteria.~~	Acceptance criteria generally refer to waste package or waste form admittance in a facility: storage or more often disposal. The relation with maintenance procedures is not understandable.	X			
clar	CAN	49	6.81	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	Minor changes/revisions to text to make the description of an operational radiation protection program more comprehensive.	X			

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Type	MS	No.	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
				in accordance with the area classification. The programme should include the monitoring and control of radiological hazards in the 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.					
clar	UKR	10	6.81 p. 42	Add a new phrase after the second phrase. Reference levels of contamination (dose rate, surface contamination, concentration of radioactive aerosols in the air etc.) should be established for permanently and periodically attended premises.	To ensure that radiation exposure of personnel is kept within the established limits	X	See Canada comment 49		
clar	CAN	50	6.82	Maintenance, inspection and testing activities must include emergency response equipment	Dedicated emergency equipment is often overlooked in preventative	X	Maintenance, inspections and testing should be performed regularly to ensure that equipment		
edit	IND	14	6.82	Emergency response procedures should be documented and made available to the personnel concerned and kept up to date.	Need a conjunction	X			
clar	USA	30	6.83 P. 43	Modify Para to read: 6.83 The key elements that should be considered for the decommissioning of facilities for the predisposal	Completeness and clarity regarding DS450, residual radioactivity, and financial assurance.	X			

Type	MS	No.	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
				management of radioactive waste, as specified in WS-R-5 [21] and its updated version in DS450 [Ref..], include: (a) The selection of a decommissioning option in which residual radioactivity, radionuclide concentration in the secondary waste, technical factors associated with characterization and cleanup, costs and decommissioning financial assurance, schedules and institutional factors are taken into account; (b) The development of a decommissioning plan for site release or license termination; (c) The specification of the critical tasks involved in their decommissioning; in particular decontamination, dismantling, demolition, surveillance and conducting a final radiological survey; (d) The management functions important for their decommissioning, such as training, organizational control, radiological monitoring, planning and the control of waste management, nuclear security, safeguards and quality assurance. (e) Allocation of decommissioning funds or financial instrument to cover					

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Type	MS	No.	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
				decommissioning costs.					
clar	USA	31	6.85 P. 43	Modify item (e): Cost estimates, financial provisions, and update of decommissioning funds based on characterization data and safety case updates.	Clarification regarding update of financial assurance for decommissioning.	X			
Sc/str	CAN	52	Appendices	Very useful information in the appendices		X			
clar	UK	86	App. 1	After (b) include 'the limits and 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			
edit	GER3	75	App. 1	2nd paragraph: "The programme should include provisions for: … (d) Collection, characterization and safe storage of radioactive waste~~,~~ ~~and an additional reserve storage capacity~~; (e) Adequate storage capacity for the radioactive waste expected to be generated (conditioned and unconditioned), and an additional reserve storage capacity; … (l) Maintaining facilities and equipment for the ~~collection,~~ processing and storage of waste to ensure safe and reliable operation; … (o) Initiating, as necessary, research and development activities to improve existing methods for processing radioactive waste or to	Items (d), (e): Since (e) addresses the storage capacity, the provision for an additional reserve storage capacity is better placed in this item. Item (l): According to the IAEA Safety Glossary (2007 Edition), the term 'processing' includes 'pretreatment', 'treatment' and 'conditioning'. As mentioned in Para 6.24, collection of radioactive waste is part of pretreatment operations. Item (o): For completion.	X			

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				develop new methods and techniques; …"					
clar	FRA	15	App. 1 p. 44	(f) Ensuring that the radioactive waste can be retrieved at ~~the end of the anticipated~~ any moment of the storage period	Unexpected events affecting safety may lead to the decision to retrieve waste from the storages. They have to be designed so that the waste retrieval can be carried out at any moment.	X	"…at any time within …"		
clar	CAN	51	App. 1	(h) Change to 'Processing radioactive waste….' to remove term 'retreating'	Retreating can be misconstrued	x			
clar	UK	85	App. 1	Add extra bullet: Systematic evaluation of operating experience and events at the facility	Important issue omitted in DS447 but included in DS448	X			
clar	JAP	8	App. 2	Items of Hazards (non-radiological) should be unified expression.	For instance, while "hydrofluoric acid" is included in "non-radiological hazards" of "uranium fuel fabrication", it is not written in "non-radiological hazards" of "uranium enrichment" despite gases and aerosols arising from uranium enrichment should also be considered. In addition, it is unclear that "Environmental impact" include "hydrofluoric acid" or not.	X			
edit	JAP	E11	App. 2	daughter ⇒progeny	Editorial.	X			
clar	USA	32	App. 2 P. 49	Insert in 1st and 2nd row of the table: Environmental Impacts	Completeness	X			
clar	USA	33	App 4, 4.01,	Modify bullet #4 to read: • Concentrations of contaminants in the	Completeness to consider other heavy metals contained in the	X			

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			P. 52	waste streams including heavy metals such as chromium and vanadium.	waste stream.				
clar	JAP	9	App. 4, Reprocessing facilities (p.54)	•Chemical reagents and reaction products (including hydrogen, ~~and~~ nitrogen oxides and organic materials)	Organic materials (dodecane, DBP, MBP etc.) are also potentially reactive materials.	X			
clar	JAP	10	App. 4 Reprocessing Facilities, (p.54) bottom line 1	•Chemical process that generate effluent and gaseous emissions (including formation of explosive mixtures in the off-gas system)	We propose to add example with specific consideration related to the off-gas system at reprocessing facilities. It would be assumed to form ammonium nitrate due to hydrazine and nitric acid mixture in the off-gas system.	X	New bullet		
clar	JAP	11	App. 5	Clarify demarcation between this App. and DS477 "The Management System for the Predisposal and Disposal of Radioactive Waste".	These descriptions should be addressed in DS477 "The Management System for the Predisposal and Disposal of Radioactive Waste".	X	Appendix deleted		Forwarded for consideration in development of DS477
edit	GER3	76	App. 6	"RADIOLOGICAL PROPERTIES The radiological characteristics of the waste could include: (a) ~~number and types of radionuclides~~ nuclide-specific activities and half-lifes; (b) total radioactivity content (alpha, beta/gamma); ~~(c) half-life;~~ ~~(d) activity;~~ ~~(e) activity concentrations;~~ (~~f~~c) dose rate; (~~g~~d) ~~H~~heat output."	Items (a), (c), (d) and (e) can be merged into a single item.	X			

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Type	MS	No.	Para/Line No.	Proposed new text	Reason	Accept	Accepted, but modified as follow	Reject	Reason for modification
clar	ENISS	9	App. 6 P. 59	Replace "ROBUSTNESS " by "LONG TERM PERFORMANCES and DURABILITY"	Correct terminology	X			
clar	FRA	16	App. 6 p. 59	Replace "ROBUSTNESS " by "LONG TERM PERFORMANCES and DURABILITY"	Correct terminology	X			
edit	JAP	E12	Ref. [06]	INTERNATIONAL ATOMIC ENERGY AGENCY, Safety of Nuclear Fuel Cycle Facilities, IAEA Safety Standards Series No. NS-R-5, IAEA, Vienna (2008). Currently under revision (DS439 and DS478)	For consistency with description of other references.	X			
edit	GER3	77	Ref. [31]	This reference should be deleted.	WS-G-2.3 exists twofold in the list of references (also Ref. [18]).	X			
edit	GER3	78	Ref. [37]	"INTERNATIONAL ATOMIC ENERGY AGENCY, ~~Safety Aspects in Siting~~ Site Survey and Site Selection for Nuclear Installations, DRAFT SAFETY GUIDE DS433 (in preparation)."	Correct title of the publication approved at the 34th CSS meeting in November 2013.	X			
edit	GER3	79	Ref. [38]	"INTERNATIONAL ATOMIC ENERGY AGENCY, Construction ~~of~~ for Nuclear Installations, DRAFT SAFETY GUIDE DS441 (in preparation)."	Correct title of DS441.	X			