Master Resolution Table

EPRESC DS518A Safety of Nuclear Fuel Reprocessing Facilities (Revision of SSG-42)– Step 11

COMMENTS BY REVIEWER Reviewer: All Country/Organization: All				Date: 16 May 2024	RESOLUTION			
No.	Country	Para/Line No.	Proposed new text	Reason	Accep-ted	Accepted, but modified as follows	Rejec-ted	Reason for modification/ rejection
1.	IRL1	General	please standardize the references to other publications. In addition, the relevant text should be included as an annex in the document as it is sometimes difficult to go to another document to get the relevant text. It is better to have all text in one document.	Throughout the document there are links to other documents (e.g. GSR Part 3; SSR-4; etc). In some cases the relevant requirement/text is included (e.g. see section 3.3 page 7) but sometimes the reference is listed (e.g. section 3.18 page 10). In addition, when the requirement is listed in the text sometimes it is in bold text (e.g. section 3.16, page 10) and sometimes it is not bolded (e.g. section 5.107 page 33)			X	The references and text include are according to Agency publication style. Overarching requirements are given in bold, other requirements are given in plain text.
2.	IRL2	Para 1.3	This paragraph mentions '*..reprocessing of spent fuel and breeder material'* later in para 1.8 it is stated '*…thorium from breeder reactors*'. Can a footnote be added to explain the distinction between spent nuclear fuel and breeder materials?	Para 1.2 states that the safety guide provides recommendations on the safety of nuclear fuel reprocessing facilities. It is important to clearly explain the distinction between breeder material and spent nuclear fuel.			X	It is not possible to include this distinction in a foot note.

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3.	IRL3	1.8	This Safety Guide covers facilities that use the PUREX process to reprocess spent nuclear fuels ~~containing uranium and plutonium~~ on a commercial scale.	The proposed modified text is more succinct			X	This guide specifically addresses spent nuclear fuels containing uranium and plutonium only.
4.	MAR1	2.1/6	To add **etc.** at the end of paragraph: "……. fire, floods, loss of cooling, chemical hazards and explosive hazards, **etc."**	To take into account all events that can be happen.				To be addressed by the professional editors at Step 12
5.	IRL4	2.4	When periodic safety reviews are being performed, ~~the~~ all discharge records covering the entire operational period of the facility ~~of previous~~ should be examined thoroughly to confirm that the existing	It is important to provide a boundary on which discharge records should be used.			X	The suggestion is imprecise
6.	MAR2	2.7/5	To add the proposed element: **"This consideration** should be applied in all stages of the lifetime of the reprocessing facility, including the design, construction, ……"	To use **"This consideration"** instead of **"This strategy"** that it is not clearly defined.		X This should be applied in all stages of the lifetime of the reprocessing facility, including the design, construction, operation (including when		Clarity

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						conducting modifications, upgrades or modernization) and preparation for the decommissioning of the facility		
7.	MAR3	2.9	To add : « ……supported by the application of a management system **(including the emergency management system commensurate with the results of the hazard assessment)** that provides for quality assurance and quality control, during all the stages of the lifetime of the facility, in normal operation.	For more details			X	the context in the paragraph is ensuring reliability of process equipment. Management systems requirements for emergency preparedness are established in GSR Part -7. They cant be rephrased as recommendations.
8.	IRL5	2.13	A reprocessing facility is required to have alarm systems to enable prompt response to an emergency (see Requirement 47 of SSR-4 [1]). These systems should be designed to initiate				X	

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			full or partial facility evacuation in the event of an emergency (e.g. criticality event, fire, high radiation levels). A reprocessing facility is required to have alarm systems to enable prompt response to an emergency (**see Requirement 47 of SSR-4 [1]**).	As mentioned in comment 1 above, rather than providing a reference to another document, the relevant requirement is included as a footnote or annex. This will make the document easier to use for the reader.				
9.	IRL6	2.15	'Support systems are necessary to ensure that…' Please add a footnote to explain what is meant by support systems	It is unclear what support systems is being referred to	X			
10.	CAN1	DS518A Section 4.6, first sentence	The density and population distribution in the vicinity of a reprocessing facility, along with a projected population density growth study for the life of the facility are required to be taken into account in the selection of a site….	Harmonizes with language in 4.7 and includes projected population growth as a criteria for site selection			X	Consistency with requirements of SSR-1
11.	MAR4	5.180/9	To add the proposed element at the end of parag. : "…..as the postulated initiating events for a reprocessing facility **including very low probability events** »	As stated in the GSR Part 7, Parag. 4.2			X	Requirement on effective Consideration of effective emergency

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								response to reasonably foreseeable events (including very low probability events) established in para 4.2 of GSR Part 7.
12.	MAR5	5.181/3	To add the proposed elements at the end of parag.: "Emergency plan arrangements are required to be integrated with those of other response organizations, as appropriate; with contingency plans in the context and with security plans; and to provide, to the extent practicable, assurance of an effective response to a nuclear or radiological emergency ».	As stated in the GSR Part 7, Parag. 4.14.		X Emergency plan arrangements are required to be integrated with those of other response organizations, as appropriate; with contingency plans; and to provide, to the extent practicable, assurance of an effective response to a nuclear or radiological		Clarity

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						emergency (see para 4.14 of GSR Part 7[20]).		
13.	MAR6	5.184	To add the proposed parag. “Real time radiological monitoring system” in case an emergency	For more details			X	The need for the type of monitoring depends on what is necessary for effective emergency response. This aspect is addressed in previous para: “The design of the reprocessing facility is required to take into account the on-site infrastructure that is necessary for an effective emergency response (including the emergency response facilities,

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								suitable escape routes and logistical support (see Requirement 47 of SSR-4 [1]). This includes the need for on-site and off-site monitoring of releases and the environment in the event of an accident (see para. 6.182 of SSR-4 [1]).”
14.	CAN2	DS518A section 8.99	Fire Response procedures must be developed for all fire scenario that exist at the site and training provided for on-site and off-site fire brigades	All fire scenarios on site and particularly, the most resource intensive fire fighting scenarios need to be identified and fire response procedures written for each fire.			X	Requirements on training, including for internal and external fire fighters established in SSR-4 (e.g. 9.44).
15.	IRN1	8.128/ Second line	“8. The operating organization of a reprocessing facility is required to ensure availability of personnel with specific expertise on assessing the magnitudes of hazards, and the possible	The following part of the sentence is not so clear: “…**to ensure availability of personnel with specific expertise on the nature and extent of**		X The operating organization of a reprocessing facility is required		Clarity

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			development of hazardous conditions ~~**the nature and extent of hazards in the facility**~~, as well as availability and reliability of all supplies, equipment, communication systems…"	**hazards in the facility**…" What can be this expertise and what should they do exactly? It is suggested to revise this sentence according to the paragraph 5.31 of GSR Part 7.		to ensure availability of personnel with specific expertise on assessing the magnitudes of hazards and the possible development of hazardous conditions in the facility, as well as availability and reliability of all supplies, equipment, communication systems, plans, procedures and other arrangements necessary for effective response in an emergency (see para 5.31 of GSR Part 7 [20] and paras. 9.128, 9.129 and 9.132 of SSR-4 [1]).		

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16.	IRN2	8.129/ Two first lines	"8.129. The emergency ~~**arrangements**~~ plan and procedures for a reprocessing facility are required to be periodically reviewed and updated (see para. 9.131 of SSR-4 [1])."	The term "emergency arrangements" makes this sentence unclear. **Because paragraph 9.131 of SSR-4 is about reviewing the emergency plan and procedures**. But the term "emergency arrangements" covers several fields according to its definition in IAEA Nuclear Safety and Security Glossary: "**emergency arrangement** The integrated set of infrastructural elements, put in place at the preparedness stage, that are necessary to provide the capability for performing a specified function or task required in response to a nuclear or radiological emergency. **These elements may include: authorities and responsibilities, organization, coordination, personnel, plans, procedures, facilities, equipment or training."**	X			

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No.	Country	Para/Line No.	Proposed new text	Reason	Accep-ted	Accepted, but modified as follows	Rejec-ted	Reason for modification/ rejection
				So it is suggested to replace "emergency arrangements" with "emergency plan and procedures"				
17.	IRN3	8.130/ Third line from the end of the paragraph	"…events should be jointly practised and evaluated by security forces and emergency ~~**response**~~ workers."	The term "emergency response worker" is not a common term. Considering the definition of "emergency worker" in IAEA Nuclear Safety and Security Glossary, please replace "**emergency response worker**" with "**emergency worker**" Definition: "**emergency worker** A person having specified duties as a worker in response to an emergency."	X			

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1.	SAU1	General	Please revise the text and consider the use of 'safety assessment' and 'safety analysis', as defined in GSR Part 4 (Rev. 1), which is applicable to the safety assessment of nuclear fuel reprocessing. Whenever the assessment goes beyond deterministic safety analysis and/or probabilistic safety assessment, 'safety assessment' needs to be used (e.g. in the title of sub-section 'Design basis and safety analysis for a reprocessing facility', page 14 where 'safety analysis' needs to be replaced by 'safety assessment'). When the recommendations clearly deal with deterministic safety analysis and/or probabilistic safety assessment, safety analysis can be used (e.g. in sub-section 'SAFETY ANALYSIS FOR A REPROCESSING FACILITY', pages 40 to 43 where 'safety analysis' is correctly used).	Para. 4.16 of GSR Part 4 (Rev. 1) establishes 'safety analysis' (i.e. deterministic/ probabilistic analysis) as only a part of safety assessment, the other part being the 'safety approach' related to the engineering aspects (e.g. defence in depth, safety margins).		X Change made in 8.16. See response to SAU26		Use of safety analysis and safety assessment checked and found consistent.

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2.	SAU2	1.4/1	This Safety Guide supersedes IAEA Safety Standards Series No. *SSG*-42, Safety of Nuclear Fuel Reprocessing Facilities	Editorial.	X			
3.	SAU3	3.5/3	[…]. This should address all aspects of safety (including ~~radiological~~ *radiation* safety, nuclear criticality safety and chemical safety) […]	Terminology/ editorial.	X			
4.	SAU4	3.22/4	[…] and the operating organization is required to ~~inform~~ *notify* the regulatory body (see paras 9.34, 9.35 and 9.84 of SSR-4 [1]) […]	Editorial. Consistency with para. 8.20.	X			
5.	URY1	4.4 d) ii)	Earthquakes, possibly affecting containment structures for spent fuel, highly radioactive liquids or fissile materials. ***Even if containment is not to be lost, preparedness for an earthquake should include assessment of criticality safety margins, as in such scenario, nuclear materials and their vessels could undergo deformation, discplacement and other situations (see para. 5.108 (e)) affecting criticality safety;***	This text offers a more complete picture of challenges in the event of an earthquake.			X	The text is sufficient as is.
6.	URY2	5.40	The design of a reprocessing facility is required to include equipment for real time monitoring of airborne	Early detection of leaks, leading to abnormal levels of airborne radioactive material, even inside		X (a) The most likely locations of		Clarity

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			radioactive material (see para. 6.120 of SSR-4 [1]). The system design and the location of monitoring points should be chosen with account taken of the following: (a) The most likely locations of workers; (b) Airflows and air movement within the facility; (c) Evacuation zoning and evacuation routes; (d) The use of mobile monitoring equipment for temporarily controlled areas (e.g. for maintenance). ***(e) Areas where radioactive material is most likely to become airborne.***	not occupied areas, makes easier planning management of contaminated air in other areas.		workers and areas where radioactive material is likely to be airborne;		
7.	SAU5	Title of sub-section including paras 5.9 to 5.13	**Design basis and safety ~~analysis~~ *assessment* for a reprocessing facility**	Terminology. None of the paras 5.9 to 5.13 mentions safety analysis. Only 5.13 mentions safety assessment. Therefore, the title needs to be modified.			X	Consistency with Requirement 20 of SSR-4
8.	SAU6	5.9	Please consider entirely removing para. 5.9	Para. 5.9 is misleading as it suggests that the design is based only on the consideration of design basis accidents while all accidents, including design extension			X	The text is consistent with SSR-4

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				conditions, need to be considered in the design basis according to SSR-4.				
9.	SAU7	5.20	Please consider placing para. 5.20 right after para. 5.18.	The content of current para. 5.20 is general and should be placed right after para. 5.18 to introduce the subsequent recommendations.	X			
10.	SAU8	5.24(c)	Please consider writing this paragraph so it reads as: *(c) Where more than one ventilation system is used, protection in the event of a failure of a lower pressure (higher contamination) system, causing pressure differentials and airflows to be reversed;*	Clarification. As it is, para. 5.24(c) is not clear.	X			
11.	SAU9	5.26/6	[…] and the effectiveness of the design solutions should be rigorously tested ~~rigorously~~ during commissioning.	Editorial.	X			
12.	SAU10	5.47, 5.50 and 5.77	The bullets (a), (b), etc. of the list, except the last one, should end with ';' and not a full stop.	Editorial.				To be addressed by the professional editors at Step 12
13.	SAU11	5.57/4	Please consider adding 'of the reprocessing facility' so para. 5.57 reads: Any system interfaces at which there is a change in the state of the fissile material or in the method of criticality control are required to be specifically assessed (see	Clarification. 'the word 'state' is used for both the fissile material and the reprocessing facility.	X			

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			para. 6.147 of SSR-4 [1]). Particular care should also be taken to assess all transitional, intermediate or temporary states that occur, or could reasonably be expected to occur, under all operational states and accident conditions *of the reprocessing facility.*					
14.	SAU12	5.71/1	Please consider removing 'and explosion' so the first line of para. 5.71 reads: *An analysis of fire hazards in a reprocessing facility is required to be conducted* […]	Paras 5.71 to 5.79 deal only with fire hazards, while explosion hazards are addressed in pars 5.80 to 5.82.			X	The text is consistent as is.
15.	URY3	5.97	Any leaks from the first containment barriers should be collected and recovered (e.g. by means of drip trays or floor cladding and collecting sumps for active cells). When large volumes of highly radioactive liquid waste are stored, a safety assessment should be made to determine the number of redundant tanks that need to be available to maintain safety in the event of failure of a waste storage vessel. Such spare tanks and associated systems should be proven, managed, maintained, and tested during operation to provide sufficient confidence they could be safely deployed when needed. The subcriticality of the collected leaks	Just an editing comment.	X			

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			and spills is required ***to*** be demonstrated (see para. 6.146(a) of SSR-4 [1]).					
16.	SAU13	5.106/2	[…] external ~~hazards(see~~ hazards *(see* Requirement 16 […]	Editorial.	X			
17.	SAU14	5.109	[…] The design should also be evaluated for beyond design basis seismic events considered as design extension conditions (see para 6.73 of SSR-4 [1]), to ensure that such an event will not impair the function of control rooms, will not cause loss of confinement or a criticality accident, and that there is adequate seismic margin to avoid cliff edge effects […]	Consistency. Similar recommendations should be proposed for other hazards more severe than those selected for the design basis as derived from the site hazard evaluation, consistent with para. 6.54 of SSR-4.			X	No additional recommendations proposed
18.	SAU15	5.109/3	Please check whether 'beyond design basis seismic events' are really considered as 'design extension conditions', and if yes, what are the safety features associated to them.	Clarity.			X	Text is clear as is.
19.	SAU16	5.112/6	Please consider adding 'and as low as reasonably achievable' at the end of para. 5.112	Consistency with Requirement 8 of SSR-4.			X	Requirement not relevant in the context (radiological consequence of fire and explosion) of the para

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20.	SAU17	5.154/3	Please consider modifying line 3 of para. 5.141 so it reads: […] Facility specific, ~~realistic~~ *plausible*, robust (i.e. conservative) estimations of chemical hazards to personnel […]	Terminology. Estimations cannot be at the same time realistic and conservative. 'Plausible' is proposed instead of 'realistic' to keep 'robust', which is also used elsewhere in the draft safety guide with the meaning of conservative.		X Facility specific, **credible**, robust (i.e. conservative) estimations of chemical hazards to personnel and releases of hazardous chemicals to the environment should be performed		Clarity and technical precision
21.	URY4	7.12	The commissioning programme may vary in accordance with national practices. Nevertheless, for a reprocessing facility, at a minimum the following activities are required to be performed (see paras 8.9 and 8.14 of SSR-4 [1]): (a) Confirmation of the performance of the shielding and the performance of the containment or confinement; (b) Demonstration of the availability of the criticality detection and alarm systems; (c) Emergency drills and exercises to confirm that emergency plans and arrangements are adequate and	Cooling systems are key to safety at process points with high heat loads, containing radioactive and/or fissile material. Their proper performance –for every anticipated occurrence- should be confirmed before operation begins.		X (e) Confirmation of the performance of cooling systems for radioactive material (e.g. spent fuel, radioactive waste) as necessary.		Clarity

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			deliverable; (d) Demonstration of the availability of other detection and alarm systems (e.g. fire detection and alarm system) ***(e) Confirmation of proper functioning and adequate performance of all cooling systems (operation and emergency), especially in sections where loss of cooling could lead to serious safety concerns, as spent fuel storage, processing and High Level Waste vitrification.*** In addition, the commissioning of a reprocessing facility should include the demonstration and confirmation of the satisfactory training and assessment of operating personnel.					
22.	SAU18	8.16/ 3 and 4	[…] In particular, personnel with responsibilities and expertise in ~~safety analysis and~~ safety assessment should be provided […]	See the general comment (comment No. 1). In the draft para. 8.16, the formulation suggests that 'safety analysis' is not part of 'safety assessment' as established in GSR Part 4 (Rev. 1).	X	X In particular, personnel with responsibilities and expertise in safety analysis **or** safety assessment should be provided with a working knowledge of the security		Clarity

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						arrangements at the reprocessing facility.		
23.	SAU19	8.42/1	The ~~aging~~ *ageing* management programme should consider the physical ageing and the non-physical […]	Editorial	X			
24.	URY5	8.96	During an emergency, consideration should be given to the possible presence of both chemical and radiological hazards. ***Special care should be given to eventual chemical and radiological/nuclear accidents that could synergize each other. Example: large leaks of nitric acid reaching stocks of pure uranium/plutonium oxides could give rise to toxic and physical hazards (NOx fumes, heat) as well as radiotoxics dispersion, but in turn, it could lead to loss of criticality safety (e.g. change in Pu/H ratio), that would indeed worse accident consequences and their mitigation. This kind of events should be, as far as possible, considered when siting and designing chemicals storage or handling areas, as per para. 8.93.***	Even if very unlikely, occurrence of some kind of accident could lead to, and even synergize the other. This could be prevented and some emergency scenarios avoided by proper siting and designing.			X	Combination of hazards and their interaction are appropriately addressed in relevant Sections (e.g. 4.4, 5.11)

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25.	SAU20	8.104/2	[…] hierarchy (i.e. eliminate, reduce, reuse, recycle and dispose: see para. 4.6 of GSR Part 5 [2]), the waste […]	Editorial (a parenthesis was missing)	X			
26.	SAU21	9.2/9	[…] the spread of contamination and fire, and to maintain appropriate radiological monitoring. The need to […]	Editorial (full stop was missing after 'monitoring')	X			

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1.	GER1	1.4	This Safety Guide supersedes IAEA Safety Standards Series No. SSG-42, Safety of Nuclear Fuel Reprocessing Facilities.	Editorial	X			
2.	IRN1	1.8	-	"This Safety Guide covers facilities that use the PUREX process to reprocess fuels containing uranium and plutonium on a commercial scale." Please explain this abbreviation in the footnote.	X			
3.	EGY1	Page 7 (it. 2.1)	It is proposed to use large quantity instead of large amounts..... a reprocessing facility, large amounts of fissile material.	Amount means a collection of something that cannot be counted. Quantity indicates a measure of inanimate things that can or cannot be counted.	X			
4.	EGY2	2. Hazards in nuclear	It is proposed to add....The main risks are criticality, loss of confinement,	It is proposed to add this statement to highlight on the main risk in this			X	Covered in Section 2.5

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		fuel reprocessing facilities	radiation exposure and associated chemical hazards, against which workers, the public and the environment need to be protected by adequate technical and administrative measures taken in the siting, design, construction, commissioning, operation and decommissioning of the facility.	facility.				
5.	IRN12	2.1	In reprocessing facilities, the main hazards are potential criticality, loss of confinement, radiation exposure (both internal exposure and external exposure), fire, floods, earthquake, loss of cooling, chemical hazards and explosive hazards	Earthquake can be added because it's one of the main hazards in nuclear facilities.	X			
6.	GER2	2.4	When periodic safety reviews are being performed, the records of previous discharges should be examined thoroughly to confirm that the existing engineering~~ed safety features~~ provisions and operating procedures are such that protection and safety is optimized.	Is the wording "safety features" correct here? Safety features, according to the Glossary, are coupled to design extension conditions: "Safety features for design extension conditions". The wording "engineering provisions" might be better suited.	X			
7.	IRN2	2.5	In reprocessing facilities, actinides and fission products in different chemical and aggregate forms are processed. Factors relevant to the safety of a	Completeness	X			

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			reprocessing facility include but not limited to the followings:					
8.	WNA1	2.5(d)	The presence of exothermic materials with high heat generation during the processing of spent nuclear fuel (i.e. making it necessary to provide heat removal by ~~active~~ safety systems).	Delete "active": SSR-4 does not mention active safety systems, only safety system; the draft shouldn't be more stringent than the safety standard.			X	Active heat removal systems are necessary in reprocessing facilities. The text is consistent with SSR-4.
9.	WNA2	2.5(e)	The ~~high~~ complexity of the processes, which…	Delete "high": the term "high complexity" is not used in this draft except in this sentence, nor in SSR-4; only complexity is.	X			
10.	INR13	2.8	An ageing management programme is required to be developed and implemented to detect and monitor ageing and degradation and corrosion and erosion processes.	It's better the word erosion to be added	X			
11.	WNA3	2.12	Any; just "Such system" which is highlighted in gray.	Editorial	X			
12.	IRN3	2.15	Support systems are necessary to ensure that the safety systems of the reprocessing facility remain operational at all times, and to provide services to SSCs important to safety. Continuity of service should be achieved by means of robust design, including sufficient independent,	Clarification	X			

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			diverse and redundant supplies					
13.	INR14	2.16	All situations (including anticipated operational occurrences and accident conditions) that necessitate a shutdown or partial shutdown of the reprocessing facility or process and putting all or part of the facility into a safe and stable state, with no movement (even movement) or transfer of chemicals and/or fissile material, should be analysed	All situations that necessitate a shutdown of the reprocessing facility with both movement and no movement material, should be analysed			X	The sentence is clear as is.
14.	GER3	2.17 (d)	~~Safety significant i~~Instrumentation and control systems, including for radiation monitoring systems, static and dynamic confinement, and utility supply systems important for safety;	Is “safety significant system" a fixed term? We suggest to delete it.		X (d) Instrumentation and control systems important to safety, including for radiation monitoring systems, static and dynamic confinement, and utility supply systems important for safety;		Clarity.
15.	GER4	Title for para 3.1	MANAGEMENT SYSTEM~~S~~ FOR NUCLEAR FUEL REPROCESSING FACILITIES	Please check if plural “management systems” is relevant. Given we have one integrated management system.	X			

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No.	Country	Para/Line No.	Proposed new text	Reason	Accep-ted	Accepted, but modified as follows	Rejec-ted	Reason for modification/ rejection
16.	IRN4	3.1	A documented management system that integrates the safety, health, environmental, security, quality, human-and-organizational-factor, societal and economic elements ~~of the operating organization~~ is required to be implemented by the operating organization	Remove the phrase due to repetition in the sentence.	X			
17.	GER5	3.3 Line 6	… This includes the system of nuclear material accounting and control, for which information security should be coordinated in a manner ensuring that subcriticality ~~and other~~ with available safety and security measures are not compromised.	Subcriticality is not a measure. We suggest a rewording.		X This includes the system of nuclear material accounting and control, for which information security should be coordinated in a manner ensuring that safety and security measures are not compromised.		Clarity
18.	GER6	3.5 Line 2	.. This should address all aspects of safety (including ~~radiological~~ radiation safety, nuclear criticality safety and chemical safety).”	Clarification	X			
19.	JPN1	3.5.	This should address all aspects of safety (including radiological safety, ~~nuclear~~ criticality safety and chemical safety).	“Nuclear criticality safety” is, in principle, simply described as “criticality safety”, and it is better	X			

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No.	Country	Para/Line No.	Proposed new text	Reason	Accep-ted	Accepted, but modified as follows	Rejec-ted	Reason for modification/ rejection
				to follow this. Also, it should be kept a consistency with DS518fauditB and relevant paras as well as SSG-27 (Rev. 1).				
20.	IRN5	3.6 (b)	Resource management includes the measures necessary to ensure that the resources essential to the implementation of safety ~~strategy~~ policy and the achievement of the safety objectives of the operating organization are identified and made available.	consistency with SSR-4 (Req. 3)	X			
21.	GER7	3.11 Line 4	… Audits should also be performed by the personnel who performed the criticality safety analyses to confirm that the data used and the implementation of criticality safety measures are correct. Other types of a~~A~~udits should be performed by personnel who are independent of those that performed the safety assessments or conducted the safety activities.	Not clear what exact personnel should perform the audits – independent or involved one. Please clarify.		X Checks should be performed by the personnel who performed the criticality safety analyses to confirm that the data used and the implementation of criticality safety measures are correct. Audits should be performed by		Clarity See JPN2

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						personnel who are independent of those that performed the safety assessments or conducted the safety activities. The data from audits should be documented and submitted for management review and for action, if necessary.		
22.	JPN2	3.11.	The operating organization of a nuclear fuel cycle R&D facility is required to audit all safety related matters on a regular basis (see paras 4.2 (d) and 4.23 of SSR-4 [1]). This includes the examination of arrangements for emergency preparedness and response at facility, such as emergency communications and evacuation routes (including signage). ~~Audits~~ Confirmation should also be performed by the nuclear criticality safety staff who performed the criticality safety analyses to ~~confirm that~~ be the data	Missing the subject. The same comment on DS518A para.3.11.		X Checks should be performed by the personnel who performed the criticality safety analyses to confirm that the data used and the implementation of criticality safety measures are correct. Audits		Clarity See GER7

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			used and the implementation of criticality safety measures ~~are~~ correct. Audits should be performed by personnel who are independent of those that performed the safety assessments or conducted the safety activities. The data from audits should be documented and submitted for management review and for action, if necessary.			should be performed by personnel who are independent of those that performed the safety assessments or conducted the safety activities. The data from audits should be documented and submitted for management review and for action, if necessary.		
23.	US1	3.14 / 6	In particular, personnel involved in activities with fissile material (both uranium and plutonium), with radioactive material including waste, ~~and~~ or with chemicals…	An "or" statement is more appropriate for this list.	X			
24.	WNA17	3.16	To be deleted.	No new text.			X	Quote of requirement needed in the context
25.	WNA18	3.20	To be deleted.	No new text.			X	Quote of requirement

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No.	Country	Para/Line No.	Proposed new text	Reason	Accep-ted	Accepted, but modified as follows	Rejec-ted	Reason for modification/ rejection
								needed in the context
26.	GER8	4.2	The site evaluation process for a reprocessing facility will depend on a large number of variables. At the earliest stage of planning a facility, a list of potential hazards due to external events (e.g. earthquakes, accidental aircraft crashes, fires, nearby chemical hazards and explosions, floods, extreme weather conditions) is required to be developed, all significant hazards and combination of them are required to be evaluated and the design basis for the facility carefully determined (see section 5 of SSR-4 [1] and SSG-64).	Clarification			X	The text is consistent with SSR-4 SSG-64 (Protection against Internal Hazards in the Design of Nuclear Power Plants) is not applicable to NFCFs. See response to GER9
27.	IRN6	4.4(d)	External hazards that might particularly affect parts of a reprocessing facility, including: Natural external hazards: (i) Flooding and meteorological hazards, with potential to cause criticality, water penetration through openings in static barriers or damage to vulnerable items such as gloveboxes (ii) Earthquakes, possibly affecting containment structures for spent	Consistency with SSR-4 (Req. 16)			X	The text is consistent with SSR-4 as is.

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No.	Country	Para/Line No.	Proposed new text	Reason	Accep-ted	Accepted, but modified as follows	Rejec-ted	Reason for modification/ rejection
			fuel, highly radioactive liquids or fissile materials; Human induced hazards.					
28.	GER9	4.5 (b)	The periodic review of all natural and human induced external hazards, combination of them and site conditions in the design basis for the facility;	Clarification		X (b) The periodic review of all identified natural and human induced external hazards, and their credible combinations; and site conditions in the design basis for the facility;		Clarity
29.	CAN1	4.6, line 1	"The ~~population~~ density and population distribution in the vicinity of a reprocessing facility along with a projected population density growth study for the life of the facility are required to be taken into account in the selection of a site ~~considered in the site evaluation process~~ to minimize any possible health consequences for people in the event of a release of radioactive material and hazardous chemicals (see Requirements 4 and 12 of SSR-1 [18])…"	Harmonizes with language in 4.7 and includes projected population growth as a criteria for site selection.			X	Consistency with Requirements of SSR-1

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30.	WNA4	4.7 or 8.4(b)	A specific sentence should be added to mention the fitness for duty of personnel: e.g., the operating organization should establish and control policies on fitness for duty of personnel.	According to Requirements 1, 8 and 20 of SSR-2/2 Rev.1.			X	Intent of the suggestion covered in para 9.38 of SSR-4. SSR2/2 Rev. 1 not applicable to nuclear fuel cycle facilities.
31.	WNA5	5.9	"A design basis accident is a postulated accident leading to accident conditions for which a facility is designed in accordance with established design criteria and conservative methodology, and for which releases of radioactive material are kept within acceptable limits (see Requirement 17 of SSR-4 [1])."	"See SSR-4" in too vague; better to mention the Requirement.	X			
32.	IRN7	5.10	Requirements relating to the design basis for items important to safety and for the design basis analysis for a reprocessing facility are established in Requirements….	Consistency with title "**Design basis and safety analysis for a reprocessing facility**"	X			
33.	WNA6	5.12	"The specification for the design basis should take account of events that might be the consequence of other events, such as a flood following an earthquake, or multiple events initiated by one external event, such as fire or	Despite the suggestion to add the sentence in red, it is difficult to understand the added-value of this para; indeed, in the sub section "**External hazards at a reprocessing facility**" page 31 of	X			

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			multiple leaks within the facility caused by an earthquake (see para 6.61 of SSR-4)."	this draft, this issue is well addressed. And without mentioning a requirement of an IAEA Safety Standard, it is tricky to raise such a statement: "… the design basis should take account of events that might be the consequence of other events, …".				
34.	WNA19	5.18	To be deleted.	No new text.			X	Quote of requirement needed in the context
35.	WNA7	5.20	"… (e.g. red oils in evaporators, NH_3 ~~HN_3~~ in extraction cycles, ion exchange resins). …"	Typo			X	HN3 is hydrazoic acid.
36.	WNA8	5.21	"Pyrophoric materials… can cause fire or explosion. The design of the facility should therefore include measures to avoid the unexpected accumulation of such materials and should provide an inert environment, as necessary (see paras 6.160 and 161(d) of SSR-4)."	Always better and useful to mention the relevant para of an IAEA Safety Standard; SSR-4 here. NB: Para 9.110 provides additional information in this regard too.		X (see paras 6.160 and 6.161 of SSR-4)		Clarity
37.	WNA9	5.30	"… such as those of the International Organization for Standardization (e.g.: ISO 17873:2004)."	Criteria for the design and operation of ventilation systems for nuclear installations other than nuclear reactors.			X	It is not intended to refer a specific standard.
38.	WNA10	5.19 and 5.20	Build-up: correct? Buildup: correct?	Editorial: change build-up (UK) by buildup (USA) for consistency		X Buildup		Consistency with SSR-4

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No.	Country	Para/Line No.	Proposed new text	Reason	Accep-ted	Accepted, but modified as follows	Rejec-ted	Reason for modification/ rejection
		5.29 and 5.31		and according to the IAEA Nuclear Safety and Security Glossary, 2022 Edition (see page 203). Personally, I prefer build-up.				
39.	GER10	5.50	The need for maintenance, including inspection and testing activities, is required to be given special attention in the design of equipment installed in ~~highly radioactive~~ cells with high radioactivity, with particular consideration given to radiation levels and contamination levels in facilities with a long design lifetime (see para. 6.106 of SSR-4 [1]).	Clarification	X			
40.	CAN2	5.50 (a)	"For the mechanical and electrical parts of units containing highly radioactive material, the design of the layout and of the equipment should allow for adequate remote maintenance and replacement operations where possible (e.g. using remote handling tools or ~~'master-slave'~~ manipulators)."	Suggest to remove "master-slave" terminology throughout document.	X			
41.	US2	5.50(a) & 8.14(a)	Replace term "master-slave manipulators" with a more inclusive language term or delete	This term has negative racial connotations and does not align with inclusive language practices		X Deleted 'master-slave' and retained the term 'manipulators'		

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No.	Country	Para/Line No.	Proposed new text	Reason	Accep-ted	Accepted, but modified as follows	Rejec-ted	Reason for modification/ rejection
42.	FIN1	General comment: To ensure consistency between DS518A and DS518B		Consistency between DS518A and DS518B, please use same formulation of paragraphs as far as possible. Especially the following paragraphs should be considered (following comments):	X			
43.	FIN2	DS518A para 5.55 and DS518B para 5.39		Consistency between DS518A and DS518B (UK1 comment for DS518B relevant also for 518A?)			X	The comment UK1 for DS518B has been incorporated in both DS518 A&B. Consistency between DS518A and DS518B checked and ensured as applicable.
44.	GER11	5.72 line 9	… The analysis should also include a systematic review of the provisions made for prevention of fire ignition ~~initiation~~, for timely detection of fires, for extinguishing of fires, and for prevention of the spread of fires that cannot be extinguished.	Fire initiation or fire ignition? Please verify	X			Checked and found the term 'initiate' to be consistent with SSR-4 (6.49)
45.	GER12	5.77 (f) and	(f) The fire resistance of the filter	Clarification		X		5.77 (f)

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No.	Country	Para/Line No.	Proposed new text	Reason	Accep-ted	Accepted, but modified as follows	Rejec-ted	Reason for modification/ rejection
		(g)	medium should be carefully considered, and spark arrestors should be used to protect filters, as necessary. The use of non-combustible materials for filters and other elements of ventilation system should be prefered ~~considered~~. (g) The locations of filters and fans should be carefully evaluated for their ability to perform ~~during a~~ in the case of fire.			(f) The fire resistance of the filter medium should be carefully considered, and spark arrestors should be used to protect filters, as necessary. The use of non-combustible materials for filters and other elements of ventilation system should be considered. (g) The locations of filters and fans should be carefully evaluated for their ability to perform during a in the case of fire.		'Considered' is the intended term The need for use of non-combustible material is based on fire hazard analysis.
46.	GER13	5.84 Line 4	… As part of the design, the failure of all SSCs important to safety is required to be assessed (see paras 6.1 and 6.80 of SSR-4 [1]) and consideration given (in accordance with ~~a graded approach~~ results of safety assessment) ~~to the~~	Statement is difficult to comprehend. It is also difficult to bring together, in one sentence, paras 6.1, 6.80 and 6.89 of SSR-4. We made a		X As part of the design, the failure of all SSCs important to safety is required to be		Clarity The requirement 6.89 in SSR-4 can't be rephrased as

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No.	Country	Para/Line No.	Proposed new text	Reason	Accep-ted	Accepted, but modified as follows	Rejec-ted	Reason for modification/ rejection
			~~design or procurement of items that fail to a safe configuration. Where no safe configuration can be assured,~~ that the functionality of SSCs important to safety ~~is required to~~ should be maintained ~~(see para. 6.89 of SSR-4 [1])~~, for example by redundancy, separation, diversity and independence, as necessary. Additionally, (see para. 6.89 of SSR-4 [1]), items important to safety either should be capable of functioning after a loss of support systems, e.g. compressed air, or, if not, should be designed to fail to a safe configuration, with acceptable positions, settings and signals (or clear indication of their failed status).	suggestion, please verify.		assessed (see paras 6.1 and 6.80 of SSR-4 [1]) and consideration given (in accordance with the results of safety assessment) to the design or procurement of items that fail to a safe configuration. Where no safe configuration can be assured, the functionality of SSCs important to safety is required to be maintained (see para. 6.89 of SSR-4 [1]), for example by diversity, redundancy, physical separation, and independence, as necessary.		recommendation in the Guide. See also JPN3
47.	JPN3	5.84.	Paragraphs 6.80–6.89 of SSR-4 [1] establish requirements to address equipment failure in the design of a	Completeness regarding to the design concept to enhance reliability in nuclear installations.		X for example by diversity,		Clarity

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			reprocessing facility. Thus, a reprocessing facility is required to be designed to cope with the failure of equipment that would result in a degradation of confinement, shielding or criticality control, or a reduction in defence in depth. As part of the design, the failure of all SSCs important to safety is required to be assessed (see paras 6.1 and 6.80 of SSR-4 [1]) and consideration given (in accordance with a graded approach) to the design or procurement of items that fail to a safe configuration. Where no safe configuration can be assured, the functionality of SSCs important to safety is required to be maintained (see para. 6.89 of SSR-4 [1]), for example by diversity, redundancy, physical separation~~, diversity~~ and functional independence, as necessary.			redundancy, physical separation, and independence, as necessary		
48.	GER14	5.89 Footnote 17	To meet the requirements established in Requirements 49 and 50 and para. 6.89 of SSR-4 [1], electrical power supplies and other support services in a reprocessing facility should be of high reliability[17]. Contributions to reliability include the use of diverse and	We suggest to move text from footnote 17 directly to para.5.89, as is raises an important issue and footnotes are not an official part of a Safety Guide.	X			

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			redundant electrical power sources, switching and connections, the design of power supplies to withstand external hazards, and the use of uninterruptible power sources when necessary. In the event of a loss of normal power, and depending on the status of the facility, an emergency power supply is required to be provided to certain SSCs important to safety (see para. 6.187 of SSR-4 [1]).					
49.	FIN3	DS 518A para 5.93 and DS518B para 5.68		Consistency between DS518A and DS518B. Shouldn't these be equivalent?	X			
50.	FIN4	DS518A para 5.97 and DS518B para 5.73 ?		Consistency between DS518A and DS518B			X	Consistency between DS518A and DS518B checked and confirmed that the text is as applicable to the type of facility.
51.	WNA20	5.74	Need to add: […] at the beginning.	Editorial: the para is not complete.				To be addressed by the professional editors at Step 12
52.	IRN8	*Chemical*	For a reprocessing facility,	Completeness			X	Assessment of

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No.	Country	Para/Line No.	Proposed new text	Reason	Accep-ted	Accepted, but modified as follows	Rejec-ted	Reason for modification/ rejection
		hazards 5.103	conservative assessments of chemical hazards to site personnel and releases of hazardous chemicals to the environment and the possible hazards caused by the effects of chemicals on radioactive materials should be made on the basis of standards and regulatory requirements applied to chemical industries, taking into account any potential for radiological or criticality hazards					chemical hazards includes consideration of effects of chemicals on other materials including radioactive materials
53.	IRN9	*Chemical hazards* 5.103	For a reprocessing facility, conservative assessments of chemical hazards to site personnel and releases of hazardous chemicals to the environment should be made on the basis of standards and regulatory requirements applied to chemical industries, taking into account any potential for radiological (non-radiological if applicable) or criticality hazards.	If necessary, non-radiological effects should also be considered.			X	Sentence clear as is.
54.	GER15	5.106	The design of a reprocessing facility is required to take into account the nature and severity of external ~~hazards(see~~	Typo	X			

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			hazards (see Requirement 16 and paras 6.49–6.54 of SSR-4 [1]).					
55.	WNA21	5.107	To be deleted.	No new text.			X	Quote of requirement needed in the context
56.	US3	5.111	Replace "forests" with "combustible vegetation"	To add context and extend scope beyond forests	X			
57.	FIN5	DS518A para 5.109 and DS518B para 5.83		Consistency between DS518A and DS518B			X	Consistency between DS518A and DS518B checked and confirmed that the text is as applicable to the type of facility.
58.	GER16	5.127 Line 9	… Other parameters include radiation levels, air quality and pressure in operational areas, the correct operation of ventilation systems, and general conditions of the facility (e.g. radiation levels, contamination levels)	Mention of pressure has been deleted during development of this para, however it might be important for a reprocessing facility, please verify.			X	'pressure' is already mentioned in the main parameters in the previous sentence.
59.	US4	5.127	Revise second sentence to read: Other parameters include radiation and contamination levels, air quality in operational areas, and correct operation of ventilation systems. ~~and general conditions of the facility (e.g. radiation~~	To provide clarity since "radiation levels" is repeated twice. Additionally, "general conditions" is an unclear term in this context and seems very similar to the prior sentence's discussion of "main	X			

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No.	Country	Para/Line No.	Proposed new text	Reason	Accep-ted	Accepted, but modified as follows	Rejec-ted	Reason for modification/ rejection
			~~levels, contamination levels).~~	parameters."				
60.	FIN6	DS 518A 5.132 (a) (i) and DS518B 5.103		Consistency between DS518A and DS518B	X			
61.	GER17	5.148	Requirement 14 of GSR Part 4 (Rev. 1) [16] states that "The performance of a facility or activity in all operational states and, as necessary, in the post-operational phase shall be assessed in the safety analysis." The safety analysis for a reprocessing facility should cover the various hazards for the whole facility, combination of them (see Section 2 of this Safety Guide) and all the activities performed within the facility.	Please add issue about combination of hazards.			X	Recommendations on consideration of credible combinations of hazards are appropriately included in relevant sections on design basis and safety analysis (5.11), postulated initiating events (5.66), analysis of design extension conditions (5.162, 5.163), Emergency preparedness and response (5.180)
62.	CAN3	5.152(d)	"Internal exposure can be a highly significant component of the ~~whole~~	Clarification.	X			

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No.	Country	Para/Line No.	Proposed new text	Reason	Accep-ted	Accepted, but modified as follows	Rejec-ted	Reason for modification/ rejection
			total exposure and should be considered explicitly"					
63.	ROK	Page 44, Para 5.176 Line 8	(Before) (d) Filter temperature monitoring, where necessary. (After) (d) Filter temperature and humidity monitoring, where necessary.	o Suggestion: Consider incorporating humidity monitoring. - Humidity levels can impact filter performance.			X	Though filter humidity has an impact on performance of the filters, it is not expected to have significant impact on safety, and hence not included in the recommendation. The aspects included in the list are for testing of filter efficiency or are expected to indicate failure or impending failure of the system.
64.	INR10	5.189	This programme should be implemented at the design stage to maintain the operability and reliability of items important to safety and allow equipment replacement to be anticipated. the ageing management program of the facility which is	According to ageing management for NFCF Safety Reports Series No.118			X	not relevant to the section on Design.

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			established during the operational stage, need to be periodically reviewed for its adequacy, and necessary improvements are to be made until the decommissioning of the facility					
65.	WNA11	6.7	"The operating organization should implement effective processes to prevent the installation of counterfeit, fraudulent or suspect items, as well as non-conforming or sub-standard components (see para 8.8 of SSR-4). …"	The para 8.8 of SSR-4 should be mentioned.	X			
66.	WNA12	6.10	(a) … (See para 4.18 of SSR-4) (b) … (See para 4.32 of SSR-4) (c) … (See Req. 53 of SSR-4) (d) … (See para 4.22 of SSR-4) (e) … (See para 7.4 of SSR-4) (f) … (See para 7.20 of SSR-4) (g) … (See para 9.73 of SSR-4)	Add references for consistency and accuracy.		X Added for items (d) and (g)		Clarity.
67.	WNA13	8.3	"…~~commensurate with the grace time for manual intervention~~. …" "… taking into account manual intervention time. …"	Editorial: "grace time" is a strange and unusual IAEA wording; taking into account is more appropriate and IAEA Style.				To be addressed by the professional editors at Step 12
68.	US2	5.50(a) & 8.14(a)	Replace term "master-slave manipulators" with a more inclusive language term or delete	This term has negative racial connotations and does not align with inclusive language practices		X Deleted 'master-slave' and retained the term 'manipulators'		

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No.	Country	Para/Line No.	Proposed new text	Reason	Accep-ted	Accepted, but modified as follows	Rejec-ted	Reason for modification/ rejection
						See CAN2 and CAN4		
69.	CAN4	8.14(a)	"Use of ~~master-slave~~ remote handing tools, manipulators and other remote equipment (in highly radioactive areas);"	Suggest to remove "master-slave" terminology throughout document.	X			
70.	JPN4	8.18.	In order to ensure that, under normal circumstances, the reprocessing facility operates well within its operational limits and conditions (see Requirement 57 of SSR-4 [1]), limiting conditions for safe operation are required to be defined by the operating organization (see para. 9.31 of SSR-4 [1]). The margins should be derived from the design considerations and from experience of operating the facility (both during commissioning and subsequently). The objective should be to ~~maximize~~ set ~~the~~ a sufficient safety margin while avoiding ~~minimizing~~ breaches of the limiting conditions for safe operation. ……	Clarification for the object. "Object" of this sentence is to set a sufficient margins without breaches of OLCs. The same comment on DS518B para. 8.12.	X			
71.	JPN5	8.41. (f)	Minimizing human performance factors that could lead to premature degradation, through enhancement of	Already captured in para. 3.5 as management system, therefore don't need to be stated here again.	X			

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No.	Country	Para/Line No.	Proposed new text	Reason	Accep-ted	Accepted, but modified as follows	Rejec-ted	Reason for modification/ rejection
			staff motivation, ~~fostering of a culture for safety,~~ including a sense of ownership					
72.	WNA15	8.42	"The ageing ~~aging~~ management programme…"	Typo Ageing used 25 times Aging only 1	X			
73.	JPN6	8.53.	~~Documentation and records associated with modifications should be retained at the nuclear fuel cycle R&D facility in accordance with regulatory requirements.~~	To retain the document and records is not recommended practice but requirement, as stated in Requirement 62 and para 9.62(e) of SSR-4. This paragraph does not include any added value, and then suggested to be deleted. The same comment on DS518B para. 8.46.	X			
74.	US5	8.64(k)	Methods for reviewing, ~~and~~ auditing and correcting identified deficiencies;	The list of radiation protection program elements is missing the function of correcting deficiencies, which is a necessary component.	X			
75.	WNA16	8.76	Replace "Good communication…" by "Appropriate means of timely and effective communication…" or by "Clear communication lines…"	According to para 4.7(b) of GSR Part 2 According to para 7.7 of SSR-2/2 Rev.1	X			
76.	WNA23	8.77	To be deleted.	No new text.			X	Quote of requirement needed in the context

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No.	Country	Para/Line No.	Proposed new text	Reason	Accep-ted	Accepted, but modified as follows	Rejec-ted	Reason for modification/ rejection
77.	CAN5	8.78, line 2	Site personnel should be trained in the use of personal dosimeters and personal protective equipment (including putting them on and ~~removing~~ taking them off), and in self-monitoring.	Suggestion for revising to similar terminology used in para. 8.82 (c).	X			
78.	JPN7	8.80.	Careful consideration should be given to ~~the possible combination of radiological hazards and~~ non-radiological hazards (e.g. oxygen deficiency, heat stress). Particular attention should be paid to balancing the risks and benefits associated with the use of personal protective equipment, especially for air-fed systems.	Better understanding. The same comment on DS518B para. 8.57.			X	Completeness and clarity The sentence is clear as is
79.	JPN8	8.81.	Intrusive maintenance[37] is considered a normal or regular occurrence in reprocessing facilities. The procedures for such work should include the following: (a) An estimation, prior to the work, of the doses that are predicted to be received by all persons involved (including decontamination personnel). (b) Preparatory activities to ~~optimize~~ minimize individual and collective doses, including:	To keep a consistency with SF-1. The subject to be optimized is protective safety measures (Principle 5), meanwhile doses and radiation risks must be controlled within specified limits (Principle 6), which leads to ALARA principle. The same comment on DS518B para. 8.56.	X			

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No.	Country	Para/Line No.	Proposed new text	Reason	Accep-ted	Accepted, but modified as follows	Rejec-ted	Reason for modification/ rejection
80.	CAN6	8.81(d)	"The use of feedback to identify possible improvements. For extended maintenance activities, feedback should occur continuously over the entire duration of the task ~~be given while the task is still ongoing~~."	Suggestion for revising the text so that the intent is clearer.	X			
81.	CAN7	8.82, last para.	Where the level of risk is difficult to determine (e.g. for new tasks or initial breaking of containment following a fault), the precautions taken should initially be cautious, based on conservative assessments of the ~~assessed~~ hazard and operational experience, until the risk assessment can be reviewed and refined with sources ~~in the light~~ of new data.	Suggestion for revising the text so that the intent is clearer.				
82.	WNA24	8.83	To be deleted.	No new text.			X	Quote of requirement needed in the context
83.	CAN8	8.85, list	(a) Passive whole body ~~dosimeters~~ and/or active (e.g., electronic) beta/gamma and neutron dosimeters; (b) Area gamma monitors and Criticality detectors ~~(area and individual)~~; (c) Extremity dosimeters (e.g. to	Suggestions for revising the text for clarity and also in consideration of guidance in paras. 7.16 and 7.27 of IAEA's GSG 7 (Occupational Radiation Protection).	X			

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No.	Country	Para/Line No.	Proposed new text	Reason	Accep-ted	Accepted, but modified as follows	Rejec-ted	Reason for modification/ rejection
			measure doses to the fingers or head in highly non-uniform radiation fields ~~or the lens of the eye~~); (d) Eye lens dosimeters (e) Mobile airborne activity monitors with immediate, local alarms (for maintenance work areas, tents and temporary enclosures and airlocks); (f) Mobile air samplers.	For (b), individual monitoring is captured by the examples provided in (a).				
84.	CAN9	8.99	"The procedures and training for responding to fires in areas containing fissile material should pay particular attention to the prevention of criticality and preventing any unacceptable reduction of criticality safety margins. Fire Response procedures must be developed for all fire scenarios that exist at the site and training provided for on-site and off-site fire brigades. Pre-fire plans that identify hazards present in the facility must be developed to assist fire response agencies. Further recommendations are provided in SSG-27 (Rev. 1) [3]."	All fire scenarios on site and particularly, the most resource intensive fire-fighting scenarios need to identified and fire response procedures written for each fire. Pre-fire plans identify the location of staged fire response equipment (ie. standpipes and fire extinguishers) and identify hazards that are present in the room or building floor/elevation. These can be used by fire response agencies to gain situational awareness of hazards in the area outside of the fire hazard.			X	Requirements on training, including for internal and external fire fighters established in SSR-4 (e.g. 9.44).
85.	CAN10	8.102(a)	"Periodic testing, inspection and maintenance of devices associated with	Include fire response equipment.		X (a) Periodic		Added suggested examples. Bullet

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No.	Country	Para/Line No.	Proposed new text	Reason	Accep-ted	Accepted, but modified as follows	Rejec-ted	Reason for modification/ rejection
			fire detection and suppression systems and fire response equipment ~~protection systems~~ (e.g., fire detectors, sprinklers, fire extinguishers, fire dampers, hydrants, firewater supply pumps, fire brigade equipment, etc.);"			testing, inspection and maintenance of devices associated with fire protection systems (e.g. fire detectors, sprinklers, fire extinguishers, fire dampers, hydrants, firewater pumps);		main text consistent with 9.109 of SSR-4
86.	CAN11	8.102(d)	"Fire response drills, including the involvement of off-site emergency services (see also para. 9.112 of SSR-4 [1]);"	Used of fire response drills terminology to remove any confusion between fire drills (i.e. building evacuation, assembly and accounting) and fire response drills (i.e. fire drills with a firefighting component).	X			
87.	INR11	8.119	An environmental monitoring programme is required (see para. 9.108 of SSR-4 [1]), and the results of this programme should be used to verify the impact of discharges (and any unplanned releases) on the public and on the surrounding area, to identify any trends and to assess public exposure. the results of this programme should be reported to the regulatory body as	Completeness			X	The recommendation is adequate as is. GSR Part 1 Rev. 1 establishes the requirements regulatory framework for safety.

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No.	Country	Para/Line No.	Proposed new text	Reason	Accep-ted	Accepted, but modified as follows	Rejec-ted	Reason for modification/ rejection
			required.					
88.	GER18	8.121	All liquids collected from the site of the reprocessing facility (e.g. process effluents that have to be discharged into the environment to surface water ~~groundwater near buildings and process effluents~~) ~~that have to be discharged into the environment~~ should be assessed and managed in accordance with either regulatory requirements for exemption or clearance or discharge authorizations.	Direct discharge to groundwater should not be authorized or permitted, see DS528. Please reformulate. We made a suggestion.		X All liquids collected from the site of the reprocessing facility (e.g. surface water or groundwater near buildings) that have to be discharged into the environment should be assessed and managed in accordance with either regulatory requirements for exemption or clearance or discharge authorizations.		This para is addressing surface water (e.g rain water collected at the site) or ground water (in bore wells if any at the site) collected at the site that may need to be discharged in addition to the process effluents. 8.115 covers process effluents.
89.	WNA25	8.127	To be deleted.	No new text.			X	Quote of requirement needed in the context
90.	GER19	8.134	Useful information on the causes and consequences of many of the most important anomalies and accidents that	For consistency reasons, it is advisable to keep the wording of this sentence as close as possible to	X			

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No.	Country	Para/Line No.	Proposed new text	Reason	Accep-ted	Accepted, but modified as follows	Rejec-ted	Reason for modification/ rejection
			have been observed in reprocessing facilities and other nuclear fuel cycle facilities is provided in the Fuel Incident Notification and Analysis System (FINAS) database ~~Ref.~~ [35].	the one found in valid IAEA Safety Guides for other types of nuclear fuel cycle facility; for comparison, see e.g. • Para. 8.86 (last sentence) in SSG-6 (Rev. 1); • Para. 8.97 (last sentence) in SSG-7 (Rev. 1).				
91.	FIN7	DS518A Section 9		The numbering of paragraphs should be checked and corrected.			X	Checked and found ok.
92.	GER20	9.1	At the end of facility operations ~~stage~~, ~~either planned or unplanned~~, the reprocessing facility should be safely shut down, and the hazardous inventory and corrosive materials should be removed as far as practicable.	How is the term "facility operations, either planned or unplanned" to be understood in this context? Please reformulate. We made a suggestion.	X			
93.	GER21	List of references, Ref. [10]	INTERNATIONAL ATOMIC ENERGY AGENCY, UNITED NATIONS ENVIRONMENT PROGRAMME, Regulatory Control of Radioactive Discharges, IAEA Safety Standards Series No. GSG-9, IAEA, Vienna (2018).	In addition to the IAEA, Safety Guide GSG-9 was co-sponsored by another international organization (UNEP) which needs to be added in Ref. [10].				To be addressed by the professional editors at Step 12
94.	GER22	List of references, Ref. [21]	INTERNATIONAL ATOMIC ENERGY AGENCY, UNITED NATIONS ENVIRONMENT PROGRAMME, Prospective Radiological Environmental Impact	In addition to the IAEA, Safety Guide GSG-10 was co-sponsored by another international organization (UNEP) which needs to be added in Ref. [21].				To be addressed by the professional editors at Step 12

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No.	Country	Para/Line No.	Proposed new text	Reason	Accep-ted	Accepted, but modified as follows	Rejec-ted	Reason for modification/ rejection
			Assessment for Facilities and Activities, IAEA Safety Standards Series No. GSG-10, IAEA, Vienna (2018).					
95.	GER23	List of references, Ref. [25]	INTERNATIONAL ATOMIC ENERGY AGENCY, Seismic Design for Nuclear Installations, IAEA Safety Standards Series No. SSG-67, IAEA, Vienna (2021).	Editorial correction of the citation format.	X			
96.	GER24	List of references, Ref. [35]	INTERNATIONAL ATOMIC ENERGY AGENCY, OECD NUCLEAR ENERGY Agency, IAEA/NEA Fuel Incident Notification and Analysis System (FINAS) Guidelines, Services Series No. 14, IAEA, Vienna (2006). ~~http://finas.iaea.org/.~~	The given link in Ref. [35] directs the reader to a restricted website (i.e. the homepage of the FINAS database) to which only registered users from Contact Points nominated by Member States have access. For maintaining consistency with the approach in valid IAEA Safety Guides for other types of nuclear fuel cycle facility, it is preferable to refer to the FINAS Guidelines instead.			X	The FINAS guidelines do not provide information events that have been observed in reprocessing facilities and other nuclear fuel cycle facilities

Master Resolution Table

RASSC DS518A Safety of Nuclear Fuel Reprocessing Facilities (Revision of SSG-42)– Step 11

COMMENTS BY REVIEWER Reviewer: All Country/Organization: All				Date: 16 May 2024	RESOLUTION			
No.	Country	Para/Line No.	Proposed new text	Reason	Accep-ted	Accepted, but modified as follows	Rejec-ted	Reason for modification/ rejection
1.	GER1	5.30 last line	… of the International Organization for Standardization (ISO) and relevant national requirements.	Please add "relevant national requirements". See also DS518B (para. 5.20).	X			
2.	GER2	5.132 (d)	… (iii) Monitoring temperatures.	Please add this new bullet point (iii). See also DS518B (para. 5.103 (d) (ii)).		X Added as item (ii)		Consistency with DS518B
3.	GER3	New 5.174	The design of waste storage areas and waste containers is required to take account of the type of radioactive waste, its characteristics, and associated hazards, even if the storage is intended to be short term (see para. 4.20 of GSR Part 5 [2] and para. 6.95 of SSR-4 [1]). Requirement 11 of GSR Part 5 [2] states that "**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.**" Measures to ensure the integrity of the facility and the waste containers, taking into account low probability events, should be taken, even for short	Please add a new para. after para. 5.173 dealing with the storage of waste (see also para. 5.130 (d) of DS518B).	X			

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No.	Country	Para/Line No.	Proposed new text	Reason	Accep-ted	Accepted, but modified as follows	Rejec-ted	Reason for modification/ rejection
			term storage.					

Master Resolution Table

WASSC DS518A Safety of Nuclear Fuel Reprocessing Facilities (Revision of SSG-42)– Step 11

COMMENTS BY REVIEWER Reviewer: All Country/Organization: All				Date: 16 May 2024	RESOLUTION			
No.	Country	Para/Line No.	Proposed new text	Reason	Accep-ted	Accepted, but modified as follows	Rejec-ted	Reason for modification/ rejection
1.	RUS1	General	The new text of SSG-42 suggests many substitutions from “should be” to “are (is) required”.	The recommendations provided in Safety Guides are expressed as “should” statements.		X		‘are (is) required’ has been used to when applicable requirements are indirectly referred. Safety requirements cannot be paraphrased as recommendations with ‘should’ statements.
2.	IND1	Para - 2.1 / Line-4	The main hazards are potential criticality, loss of confinement, radiation exposure (both internal exposure and external exposure), **radioactive personal contamination,** fire, floods, chemical hazards and explosive hazards.	Nuclear fuel cycle facilities are often highly reliant on human operations. Hence, personal contamination is inevitable if protective wear is not used or gets damaged during use.		X In reprocessing facilities, the main hazards are potential criticality, loss of confinement, radioactive contamination, radiation exposure (both internal		Clarity

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No.	Country	Para/Line No.	Proposed new text	Reason	Accep-ted	Accepted, but modified as follows	Rejec-ted	Reason for modification/ rejection
						exposure and external exposure), fire, floods, loss of cooling, chemical hazards and explosive hazards.		
3.	RUS2	2.3	Effluents and discharges **should** be managed by the addition of specific design features to remove and reduce levels of radioactive material and associated hazardous chemicals (see Requirement 25 of SSR-4 [1]).	Requirement 25 of SSR-4 does not prescribe "the addition of specific design features". Para 2.3 has also inconsistency with wording, saying: "Further recommendations on the management of radioactive effluents…" However, the present version of para 2.3 comprises only requirements.		X 2.3 The operating organization of the reprocessing facility (and the operating organizations of any associated effluent treatment facilities) are required to monitor and record discharges (see para. 9.104 of SSR-4 [1]). At a minimum, operating organizations are required to comply with the limits on discharges authorized by the		Consistency with safety standards.

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						regulatory body (see para. 3.123 and Requirement 31 of IAEA Safety Standards Series No. GSR Part 3, Radiation Protection and Safety of Radiation Sources: International Basic Safety Standards [8]) and to optimize protection and safety (see para. 6.100 of SSR 4 [1]). Recommendations on the management of radioactive effluents are provided in IAEA Safety Standards Series Nos SSG-41, Predisposal Management of Radioactive Waste from Nuclear Fuel Cycle Facilities [9], and GSG-9,		

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No.	Country	Para/Line No.	Proposed new text	Reason	Accep-ted	Accepted, but modified as follows	Rejec-ted	Reason for modification/ rejection
						Regulatory Control of Radioactive Discharges to the Environment [10].		
4.	RUS3	2.5	~~(f) The need for proper monitoring and maintenance of systems important to safety, which is challenged by the presence of highly radioactive media, limited access and limited possibility to perform manual operations.~~	The need is not a factor in the context of para 2.5. Consider rewording.		X (f) The presence of highly radioactive media, limited access and limited possibility to perform manual operations posing challenges to monitoring and maintenance of items important to safety.		Clarity
5.	RUS4	2.8	In selecting and designing SSCs important to safety, the processes that could cause the degradation of structural materials **should** be considered (see para. 6.36 of SSR-4 [1]).	This has to be expressed as "should" statement, see para. 6.36 of SSR-4: "In establishing engineering design rules and acceptance criteria, the effects of corrosion, erosion and similar processes shall be considered."			X	Safety requirements cannot be paraphrased as recommendations with 'should' statements.
6.	RUS5	3.1	A ~~documented~~ management system that integrates the safety, health, environmental, security, quality,	SSR-4 does not use the term "documented management system".	X			

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No.	Country	Para/Line No.	Proposed new text	Reason	Accep-ted	Accepted, but modified as follows	Rejec-ted	Reason for modification/ rejection
			human-and-organizational-factor, societal and economic elements of the operating organization is required to be implemented by the operating organization (see Requirement 4 of SSR-4 [1]).	It should be also mentioned that integrated management system is more than documented system as it involves knowledge, safety culture, etc. Reference to GSR Part 2 in para 3.2 is enough to cover documentation issues (GSR Part 2. Requirement 8. Documentation of the management system).				
7.	IND2	Para-3.12 / Line-6, 7, 8	**(a) Analyze the operational hazards and based on that, prepare and issue the limits and conditions for safe operation with approval of the regulatory body.** (b) Prepare and issue procedures for safety related activities and operations **(for normal and off-normal conditions).** (c) **Perform the preliminary safety assessment** of proposed modifications and submit the same to the regulatory body for approval. (d) Engage in frequent personal contact with personnel,	(a) Safety analysis is also the prime responsibility of the senior management of the operating organization based on which, the limiting conditions for safe operations are derived. Hence, the words "prepare and issue specifications" may be replaced as suggested in the proposed text. (b) Preparation and issue of procedure is proposed to be included as a separate point with slight modification in the text.		X The management of the operating organization should also have frequent personal contact with personnel, including observing work in progress.		The other items suggested are paraphrasing of safety requirements in SSR-4.

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No.	Country	Para/Line No.	Proposed new text	Reason	Accep-ted	Accepted, but modified as follows	Rejec-ted	Reason for modification/ rejection
			including observation of work in progress. **(e) Monitor the compliance with the recommendations of safety committee / regulatory inspection team** **(f) Periodically update/ revise the safety documents/procedure as per the regulatory guidelines** **(g) Periodically report the safety performance of the activities to the regulatory body**	(c) Facility authority is responsible for performance of safety assessments of modifications, if any. Hence the word "support" may be removed. (d) Point same as the original text (e) , (f) & (g) are the additional Points suggested for inclusion in the text as these responsibilities of the senior management of the operating organization, are not addressed anywhere in the document.				
8.	IND3	Pare-3.19 / Line-4	Modifications of safety significance are required to be subjected to safety assessment and regulatory review and, where necessary, they are required to be ~~**authorized**~~ **approved** by the regulatory body before they are implemented.	The type of consent issued by the regulatory body for proposals for modification are approval.			X	'Authorized' is the appropriate term used in (9.57(h) of SSR-4)
9.	IND4	Para - 3.5/ Line-2	This should address all aspects of safety (including radiological safety, criticality safety, chemical safety, **fire and industrial safety and training**	Fire and industrial safety are included. Training is essential for		X This should address all aspects of safety (including radiation		The aspects of safety are given as examples. The context is the need

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No.	Country	Para/Line No.	Proposed new text	Reason	Accep-ted	Accepted, but modified as follows	Rejec-ted	Reason for modification/ rejection
			/refresher training of staff).	development and maintenance of strong safety culture.		safety, criticality safety, chemical safety, fire and industrial safety).		to develop and maintain safety culture in all aspects of safety. Methods to achieve this (e.g. training, .retraining) are not addressed here. Training and refresher training are addressed in other places (e.g. 3.15, 8.8)
10.	RUS6	3.7 / 4-8	~~In accordance with para. 4.11 of GSR Part 2 [11], the management system for a reprocessing facility is required to clearly specify the following:~~ ~~(a) The organizational structure;~~ ~~(b) Functional responsibilities;~~ ~~(c) Levels of authority.~~	Consider deleting or rewording. It is not clear why only these three areas are chosen for specification. GSR Part 2 4.11.: "The organizational structures, processes, responsibilities, accountabilities, levels of authority and interfaces within the organization and with external organizations shall be clearly specified in the management system.		X In accordance with para. 4.11 of GSR Part 2 [11], the management system for a reprocessing facility is required to clearly specify the organizational structures, processes, responsibilities, accountabilities,		Consistency with para 4.11 of GSR Part 2

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No.	Country	Para/Line No.	Proposed new text	Reason	Accep-ted	Accepted, but modified as follows	Rejec-ted	Reason for modification/ rejection
						levels of authority and interfaces within the organization and with external organizations.		
11.	RUS7	3.8	The documentation of the management system **should** describe the interactions among the individuals managing, performing and assessing the adequacy of the processes and activities important to safety (see para. 4.16 of GSR Part 2 [11]).	Has to be expressed as "should" as this is not directly required by para. 4.16 of GSR Part 2: "…the levels of authority, including all interactions of those managing, performing and assessing work and including all processes…".			X	Safety requirements cannot be paraphrased as recommendations with 'should' statements.
12.	RUS8	3.11	The operating organization of a reprocessing facility **should** audit all safety related matters on a regular basis (see para 4.2(d) ~~and 4.23~~ of SSR-4 [1]). This **also** includes the examination of arrangements for emergency preparedness and response at the facility, such as emergency communications and evacuation routes (including signage).	The audits could be carried out by the organization itself, the regulatory authority or independent organization on behalf of the operating organization (see footnote to para 4.2 SSR-4). Thus, this has to be expressed as "should" statement. Reference to para 4.23 is more appropriate in Measurement, assessment, evaluation and improvement.			X	Safety requirements cannot be paraphrased as recommendations with 'should' statements.

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No.	Country	Para/Line No.	Proposed new text	Reason	Accep-ted	Accepted, but modified as follows	Rejec-ted	Reason for modification/ rejection
13.	RUS9	3.24	The safety of a reprocessing facility is required to be **systematically assessed and** verified ~~by means of comprehensive safety assessment and systematically assessed~~, **in accordance with regulatory requirements,** throughout the lifetime of the facility~~, for example by periodic safety reviews~~ (see Requirement 5 of SSR-4 [1]). The operating organization should establish a process for periodic safety reviews as part of the management system.	If this is positioned as a requirement, the proper wording from SSR-4 should be used, see Requirement 5: "The operating organization shall conduct systematic safety assessments of the facility, in accordance with regulatory requirements, throughout the lifetime of the facility". Periodic safety reviews are mentioned in the second sentence of this paragraph.			X	The text in par 3.24 is consistent with requirement 5 of SSR-4
14.	IND5	Para-4.2/ Line-2	At the earliest stage of planning a facility, a list of potential hazards due to external events (e.g. earthquakes, accidental aircraft crashes, fires, nearby chemical hazards and explosions, floods, extreme weather conditions) is required to be developed, all significant hazards are required to be evaluated and the design basis for the facility **is** carefully determined (see section 5 of SSR-4 [1]).	Typographic- to add -"is"				To be addressed by the professional editors at Step 12
15.	IND6	Para-4.4 (c) (iii).	The implementation of emergency arrangements for the evacuation of ~~**site**~~	In general, site emergency is not		X (iii) The		Clarity and consistency with

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No.	Country	Para/Line No.	Proposed new text	Reason	Accep-ted	Accepted, but modified as follows	Rejec-ted	Reason for modification/ rejection
			plant personnel and, as appropriate, the surrounding population from affected areas.	envisaged for reprocessing facilities. It is ensured through proper design that; this can lead to Plant emergency conditions only. We have also mentioned here that "evacuation of the surrounding population from affected areas, as appropriate".		implementation of emergency arrangements for the evacuation of personnel and, as appropriate, the surrounding population from affected areas.		safety standards
16.	RUS10	4.5 / 10	(b) The periodic review of all **identified** natural and human induced external hazards and site conditions in the design basis for the facility;	Section 5 of SSR-4 calls for identification and assessment of hazards and conditions: "5.1. The main safety objective in site evaluation for a nuclear fuel cycle facility is the protection of the public and the protection of the environment against the radiological and associated chemical hazards arising from normal and accidental releases of radioactive material (see NS-R-3 (Rev. 1) [5]). This requires the identification and assessment of site characteristics affecting, or potentially affecting, the facility and the effects that the facility has, or may have, on its surroundings". See also the wording in 5.11.	X			

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No.	Country	Para/Line No.	Proposed new text	Reason	Accep-ted	Accepted, but modified as follows	Rejec-ted	Reason for modification/ rejection
17.	IND7	Para-5.1/ Line-1	Requirement 7 of SSR-4 [1] states: "The design shall be such that the following main safety functions are met for all facility states of the nuclear fuel cycle facility: (a) Confinement and cooling of radioactive material and associated harmful materials; (b) Protection against radiation exposure **during all stages of normal and off-normal conditions;** (c) Maintaining subcriticality of fissile material." **(d) Preparedness and response mechanism for major accident, if any** **(e) Provisions to facilitate surveillance of SSCs important to safety** **(f) Provisions for easy replacement of some of the old components/ equipment to extend the operating life time**	(b) Suggested inclusion in the text **(d), (e), (f) & (g) are the additional points for consideration** during design.			X	The requirements are quoted verbatim and cannot be rephrased.

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No.	Country	Para/Line No.	Proposed new text	Reason	Accep-ted	Accepted, but modified as follows	Rejec-ted	Reason for modification/ rejection
			(g) **Design provisions to facilitate decommissioning of the facility in future**					
18.	RUS11	5.4 / 3-4	The need to rely on personal protective equipment **should** be minimized (see para. 3.93 of GSR Part 3 [8]).	Has to be expressed as "should" as para. 3.93 of GSR Part 3 provides for minimization of the need for both administrative control and personal protective equipment: "Employers, registrants and licensees shall minimize the need to rely on administrative controls and personal protective equipment for protection and safety by providing well engineered controls and satisfactory working conditions, in accordance with the following hierarchy of preventive measures…"			X	Safety requirements cannot be paraphrased as recommendations with 'should' statements.
19.	RUS12	5.20 / 1	**Applicable** national and international codes and standards are required to be taken into account in the facility design (see para. 6.8 of SSR-4 [1]).	Para. 6.8 of SSR-4: "The design of a nuclear fuel cycle facility shall be such that the needs of the operating organization, the requirements of the regulatory body and the requirements of relevant legislation, as well as applicable national and international codes and standards, are met".	X			

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20.	RUS13	5.37 / 5-6	The provision of such features should be balanced against the need to obtain representative samples (e.g. by short sample lines) and **possibility to generate additional decommissioning waste**.	The sentence "The provision of such features should be balanced against the need to obtain representative samples (e.g. by short sample lines) and the additional waste at decommissioning" is not clear. Needs rewording.		X The provision of such features should be balanced against the need to obtain representative samples (e.g. by short sample lines) and the generation of additional waste at decommissioning		Clarity
21.	RUS14	5.41	To avoid the inadvertent spread of contamination within the reprocessing facility, control points with personnel contamination monitoring equipment (e.g. for exposed skin and clothing) **should** be located at the exit airlocks and barriers from areas that could be contaminated (see para. 6.121 of SSR-4 [1]).	Has to be expressed as "should" as 6.121 of SSR-4 does not specify location at the exit airblocks.	X			
22.	RUS15	5.47 / 13	Using personal protective equipment (e.g. torso shields and organ shields). For normal operation, the need for personal protective equipment **should** be minimized through careful design (see para. 3.93 of GSR Part 3 [8]).	Has to be expressed as "should", see comment No 11.			X	Safety requirements cannot be paraphrased as recommendations with 'should' statements.

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No.	Country	Para/Line No.	Proposed new text	Reason	Accep-ted	Accepted, but modified as follows	Rejec-ted	Reason for modification/ rejection
23.	IND8	Para- 5.89 (i)	~~**Adequate**~~ **/ Emergency** lighting	Adequate lighting in all the areas can not be provided by emergency lighting	X			
24.	GER1	5.89	To meet the requirements established in Requirements 49 and 50 and para. 6.89 of SSR-4 [1], electrical power supplies and other support services in a reprocessing facility should be of high reliability. In the event of a loss of normal power, and depending on the status of the facility, an emergency power supply is required to be provided to certain SSCs important to safety (see para. 6.187 of SSR-4 [1]). For a reprocessing facility, this includes the following: … (d) ~~Some~~ Safety relevant exhaust fans of the dynamic containment system;	Clear wording			X	All safety related exhaust fans are not required to be provided with emergency power supplies. Please see footnote.
25.	RUS16	5.157	(h) Identification and analysis of **migration** pathways by which material that is released could be dispersed in the environment. **(i) Identification of exposure pathways for both internal and**	Exposure pathways are necessary for dose assessments, see para 5.26 of GSG-10. Definitions (ISO 21365): migration pathway -	X			

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			external exposure.	potential path, route or other means by which contaminants or hazardous substances from a particular source of contamination can spread or distribute. exposure pathway - path, route or other means, a contaminant or hazardous substances from a particular source takes to a receptor.				
26.	RUS17	Subsection "Safety analysis for accident conditions at a reprocessing facility" Paras 5.155-5.160"	This subsection is encouraged to supplement with guidelines on how to implement the steps of safety analysis for accident conditions for reprocessing facility (as stated in paras 6.60-6.67 of SSR-4): – identification of hazards; – identification and selection of postulated initiating events; – evaluation of event sequences – analysis of facility states; – evaluation of consequences; – comparison against acceptance criteria; – presentation of safety analysis and conclusions, and/or at least provide a link to the	Seems reasonable to give link to SRS No. 102 because the subsection doesn't give comprehensive recommendations on safety analysis for accident conditions to support implementation of requirements of paras 6.60-6.67 of SSR-4.		X Added reference to SRS 102 in para 5.160. Information on methods and practices, based on the IAEA safety standards and current international good practice, for performing safety analysis and preparing licensing documentation for		Clarity

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			Section 3 "Performing safety analysis for nuclear fuel cycle facilities" of Safety Reports Series No. 102 "Safety Analysis and Licensing Documentation for Nuclear Fuel Cycle Facilities" where relevant comments are given.			nuclear fuel cycle facilities is provided in Ref. [29]		
27.	RUS18	Subsection "Safety analysis for accident conditions at a reprocessing facility" Paras 5.155-5.160"	Consider to supplement this subsection with recommendations how to apply deterministic and probabilistic methods in relation to a reprocessing plant, and/or at least provide a link to relevant section of SRS No. 102 "Safety Analysis and Licensing Documentation for Nuclear Fuel Cycle Facilities" (as stated in Req. 20 SSR-4) where such explanations are given.	Seems reasonable to give link to SRS No. 102 because the subsection doesn't give any recommendations on application of deterministic and probabilistic methods (as stated in Req. 20 SSR-4).		X Added reference to SRS 102 in para 5.160. Information on methods and practices, based on the IAEA safety standards and current international good practice, for performing safety analysis and preparing licensing documentation for nuclear fuel cycle facilities is provided in Ref. [29]		Clarity
28.	RUS19	5.174	Reprocessing facilities are required to	See para. 6.17 of SSR-4: "As far as	X			

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			be designed so that discharges to the environment are minimized **as far as practicable** (see para. 6.17 of SSR-4 [1]).	practicable, the quantity and activity content of waste (including secondary wastes) and discharges to the environment shall be minimized…"				
29.	RUS20	5.181	The emergency plan is required to cover all the functions **planned** to be performed in the response to an emergency (see para. 9.124 of SSR-4 [1]).	See para. 9.124 of SSR-4: "The emergency plan shall cover all the functions planned to be carried out in an emergency, as stated in section 5 of GSR Part 7 [6], in accordance with a graded approach".	X			
30.	RUS21	5.183	During and following accident conditions, the reprocessing facility **should** be capable of being returned to a safe and long term stable state, in which the availability of the necessary information on the status of the facility and monitoring information is maintained (see paras 6.15, 6.83 and 6.84 of SSR-4 [1]).	Has to be expressed as "should". Paras 6.83 and 6.84 of SSR-4 set specific requirements for design, but do not describe post-accident actions.		X In accident conditions, the reprocessing facility is required to be capable of being returned to a safe and long term stable state, in which the availability of the necessary information on the status of the facility and monitoring		Consistency with safety standards.

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						information is maintained (see paras 6.15, 6.83 and 6.84 of SSR-4 [1]).		
31.	GER2	7.22	7.21. Testing of other SSCs may be performed at this stage, in accordance with regulatory requirements. ~~7.22.~~ Further recommendations are provided in SSG-38 [34]. Stage 2: Cold commissioning 7.22. During cold (or 'inactive') commissioning, the reprocessing facility's systems are tested in the absence of radioactive material. The facility is tested systematically, as individual items of equipment and as systems in their entirety. Owing to the relative ease of taking corrective actions, as much verification and testing as practicable should be performed in this stage.	Numbering	X			
32.	GER3	8.63	To ensure that these requirements are met, the ~~operation~~ operating organization of a reprocessing facility should establish a policy to ensure that protection and safety is optimized using a systematic approach.	Misspelling	X			

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33.	GER4	8.75	Newly identified contamination zones within a reprocessing ~~plant~~ facility should be delineated, with proper posting and barriers provided in accordance with facility procedures.	Consistency	X			
34.	RUS22	8.126	Suitable, reliable and diverse means of communication **should** be established with local authorities and response organizations (see para. 5.43 of GSR Part 7 [20]).	Has to be expressed as "should". Para. 5.43 of GSR Part 7 does not specify local authorities and response organizations: "The operating organization of a facility in category I, II or III shall ensure that suitable, reliable and diverse means of communication are available at all times, under the full range of emergency conditions, for use in taking protective actions and other response actions on the site and for communication with off-site officials…".			X	Safety requirements cannot be paraphrased as recommendations with 'should' statements.
35.	RUS23	p.75	~~1.1.~~ **9.1.** The operating organization of a nuclear **reprocessing** facility is required to **allocate** adequate financial resources for safe decommissioning where these are not provided by the government (see para. 4.2(e) of SSR-4 [1]).	For consistency with para. 4.2(e) of SSR-4: "Shall allocate adequate financial resources to ensure safety, including provision for financial resources for decommissioning where these are not provided by the government".	X			

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36.	RUS23	~~9.1~~ **9.2**	At the end of facility operations, either planned or unplanned, the reprocessing facility should be safely shut down, and the hazardous inventory and corrosive materials should be removed as far as practicable. The operational experience gained through the ageing management programme (see paras 5.186–5.189 and 8.41–8.43) should be used to ensure that the SSCs in the facility have sufficient residual life to support safe **decommissioning**.	According to GSR Part 6 cleanup is part of decommissioning activities. Actually, SSCs are more important for dismantling than for cleanup.		X The operational experience gained through the ageing management programme (see paras 5.186–5.189 and 8.41–8.43) should be used to ensure that the SSCs in the facility have sufficient residual life to support safe post-operational cleanup and safe decommissioning.		Included 'safe decommissioning' Post operational cleanup is part of preparation for decommissioning and performed in the transition period between shutdown of operations and decommissioning.