Resolution of Comments

SSG-7: Safety of Uranium and Plutonium Mixed Oxide Fuel Fabrication Facilities (DS517C)

COMMENTS BY REVIEWER Reviewer: Country/Organization:				Page.... of.... Date: 19 October 2021	RESOLUTION			
No.	Comment	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
1.	FIN01	General	The term main safety functions is used in SSR-4 and theses safety guides. The term fundamental safety functions should be used throughout IAEA safety standards.	Consistent terminology should be used throughout safety standards especially for key expressions. Fundamental safety functions are defined in IAEA glossary. Main safety functions are not defined and understanding of main safety functions may vary.			X	IAEA Safety Glossary contains both 'main safety functions' as well as 'fundamental safety functions'. Those are included under the 'safety function' definition. As SSR-4 is the main leading requirement safety standards for this SSG, the terminology is harmonized with this publication.
2.	FIN02	Throughout the document	Correct the notation for chemical compounds to use superscripts or subscripts for the numbers (eg.PuO_2 or ^{235}U)	Consistency with other sections, and clarity	X			
3.	FIN03	Whole document		The SSG-6 and SSG-7 standards should be reviewed together. A consistency between the two should be ensured. The order of various contents should be the		X		We believe the content is important not the order. In practice, the standards are

				same in the two as well as the order of paragraphs as far as possible. In addition, it would be helpful if the wordings of the 'similar' paragraphs would be as far as possible, the same. It should also be checked and ensured that no requirements given to one and relevant also to the other are left out. Now it seems to me the case.				used not in parallel. The reason for different order is the revision by amendment and differences in the existing versions. Many modifications were applied to harmonize as much as practicable.
4.	JAP01	2.2.	In MOX fuel fabrication facilities, both plutonium oxide (PuO_2) or mixed oxide and uranium oxide (UO_2) are processed. The factors affecting the safety of a MOX fuel fabrication facility include the following:	In some MOX fuel fabriacation facilities, pulutonium oxide is brought into the facility in the form of MOX powder, and thus, PuO_2 powder is not treated.	X			
5.	UKR01	3.19	3.19. Any proposed modification to existing facilities or activities, or proposals for introduction of new activities, are required to be assessed for their implications on existing safety measures and appropriately approved before implementation: see paras. 9.57(b)-(c) of SSR-4 [1]. Modifications of safety significance are required to be subjected to safety assessment and regulatory review and, where necessary, they are required to be authorized by the regulatory body before they are implemented: see paras 9.57(h) and 9.59 of SSR-4 [1]. The facility or activity	Editorial correction. Reference to plural paragraphs.	X			

			documentation is required to be updated to reflect modifications (see paras 9.57 (f)–(g) of SSR-4 [1]. The operating personnel, including supervisors, should receive adequate training on the modifications.					
6.	UKR02	3.23	3.23. Requirement 73 of SSR-4 [1] states that **"~~[t]~~ T~~t~~he operating organization shall establish a programme to learn from events at the facility and events at other nuclear fuel cycle facilities and in the nuclear industry worldwide."** Recommendations on operating experience programmes are provided in IAEA Safety Standards Series No. SSG-50, Operating Experience Feedback for Nuclear Installations [14].	Editorial correction			X	This is the correct citation of the original text.
7.	UKR03	3.25	3.25. Requirement 6 of SSR-4 [1] states~~,~~ that: **"~~[a]~~ An independent safety committee (or an advisory group) shall be established to advise the management of the operating organization on all safety aspects of the nuclear fuel cycle facility."**	Editorial corrections			X	This is the correct citation of the original text.
8.	FIN04	4.03 /3	With appropriate design and operation**, it** can be ensured that …			X		Wording proposed by technical editor.
9.	UKR04	4.09	4.9. The site characteristics should be reviewed periodically for their adequacy and persistent applicability during the lifetime of a MOX fuel fabrication facility. Any changes to these characteristics	Editorial correction. Missing point.	X			

			which might require safety reassessment should be identified and evaluated (see para. 5.14 of SSR-4 [1]). This includes the case of an increase of a production capacity beyond the original envelope.					
10.	FIN05	5.02 and 5.3	5.2. The requirements on maintaining subcriticality are established in requirement 38 and para. 6.138 – 6.156 of SSR [1]. Further guidance on the design of a MOX fuel fabrication facility to ensure subcriticality is provided in Section 3 of SSG-27 [4]. 5.3. The requirements on confinement and cooling of radioactive materials are established in requirements 35, 39 and in para. 6.123 – 6.128 and 6.157 – 6.159 of SSR-4 [1]. ~~Further guidance on the design of a MOX fuel fabrication facility to ensure subcriticality is provided in Section 3 of SSG-27 [4].~~	Items related to subcriticality should be in para 5.2 and para 5.3 should only contain things related to confinement and cooling.	X			
11.	PAK01	5.03	**The requirements on protection against internal radiation exposure are established in Requirement 34 and paras 6.120 – 6.122 of SSR-4 [1] and** the requirements on protection against external radiation exposure are established in Requirement 36 and paras 6.129 – 6.134 of SSR-4 [1]	The specific hazard of airborne plutonium is discussed in this safety guide. Therefore internal exposure is also a concern.	X			

12.	FIN06	5.14 /4	~~Different~~ Various methods to accomplish this are described in SSG-27, …	Better language		X		The provision was changed.
13.	UKR05	5.22	5.22. Last stage filters (see also para. 5.33) should be used to protect the public and the environment and should normally be located close to the location at which discharges to the environment occur.	Editorial correction. Missing point.	X			
14.	JAP02	5.30 New para after 5.30.	5.30A Audible alarm systems should be installed to alert operators to fan failure or breach of containment system. At the design stage, provision is also required to be made for the installation of equipment for monitoring airborne radioactive material and/or gas monitoring equipment: see para 6.120 of SSR-4 [1]. Monitoring points should be chosen that would correspond most accurately to the exposure of personnel and would minimize the time for detection of any leakage: see para. 6.121 of SSR-4 [1].	Add a description for alarm systems, as stated in DS517A and DS517B.	X			
15.	JAP03	5.31.	Paragraph 3.9 of IAEA Safety Standards Series No. GSR Part 3, Radiation Protection and Safety of Radiation Sources: International Basic Safety Standards GSR Part 3 [17] states that: "Any person or organization applying for authorization: […] e) Shall, as required by the regulatory body, have an	Editorials.	X			

			appropriate prospective assessment made for radiological environmental impacts, commensurate with the radiation risks associated with the facility or activity. Further recommendations for performing environmental impact assessment of ~~conversion facilities and uranium enrichment~~ MOX fuel fabrication facilities are provided in IAEA Safety Standards Series No. GSG-10, Prospective Radiological Environmental Impact Assessment for Facilities and Activities [18].					
16.	UKR06	5.40	5.40. Paragraph 6.142 of SSR-4 [1] states that "~~[f]~~ **F**or the prevention of criticality by means of design, the double contingency principle shall be the preferred approach". For ensuring criticality safety in a MOX fuel fabrication facility one or more of the following parameters of the system should be kept within subcritical limits: …	Editorial correction			X	This is the correct citation of the original text.
17.	JAP04	5.46.	The following are recommendations for conducting a criticality analysis for a MOX fuel fabrication facility to meet the safety requirements established in para. 6.144 of SSR-4 [1]: — *Enrichment. …* — *Mass. …* — *Geometry. …*	Add a bullet on neutron interaction, as it is also important element.	X			

			— *Concentration, …* — *Moderation. …* — *Reflection. …* — *Neutron interaction.* Consideration should be given to neutron interaction between all facility parts. This includes the minimum distance of mobile units containing uranium or plutonium oxide and the engineered means for ensuring the minimal distance between equipment containing uranium or plutonium oxide. — *Neutron absorbers. …*					
18.	FIN07	5.48 /9	… Extinguishing gas other than CO_2 may be used in the event of a fire breaking out in a glovebox.	CO_2 is working as a moderato so it should not be used as extinguishing gas if criticality is to be avoided	X			
19.	JAP05	5.64.	Flooding in a MOX fuel fabrication facility might lead to the dispersion of radioactive material and to changes in the conditions for ~~neutron~~ moderation.	In this guide, all the "moderation" are used without "neutron".	X			
20.	JAP06	5.68	*Leaks and spills* The amount of liquids present in a MOX fuel fabrication facility is limited. Water is used for cooling sintering furnaces ~~and during pellet grinding~~. Possible steam explosions resulting from water entry due to a potential leak in the cooling system should be considered.	As is described at para.1.12, the fuel fabrication processes covered by this Safety Guide are dry processes. In addition, There are no wet process in pellet grinding.	X			
21.	JAP07	5.71.	The surfaces of floors and walls should be chosen to facilitate their cleaning~~, in particular in wet~~	The same comment on #6	X			

			~~process areas~~. This will also facilitate the minimization of waste from decommissioning.					
22.	FIN08	5.72 (e)	- Displacement (geometry control, fixed ~~poisons~~ absorbers); Loss of material (geometry control, soluble ~~poisons~~ absorbers).			X		The original provision was slightly changes, poisons replaced by absorbers
23.	JAP08	5.72.	*Loss of services* To meet the requirements established in Requirements 49 and 50, and in para. 6.89 of SSR-4 [1], electric power supplies and other support systems in a MOX fuel fabrication facility should be of high integrity. In the event of loss of normal power and depending on the status of the facility, an emergency power supply should be provided to certain structures, systems and components important to safety, including the following: (a) Criticality accident detection and alarm systems; (b) Ventilation fans and glovebox monitoring systems for the confinement of radioactive material; (b1) Detection and alarm systems for leaks of hazardous materials, including explosive gases; (c) Heat removal systems; (d) Emergency control systems; (e) Fire detection and suppression systems; (f) Monitoring systems for radiation protection;	Add one element as stated in DS517B.	X			

			(g) Lighting within the process facility.					
24.	FIN09	5.75	Hazards from external fires and explosions could arise from various sources in the vicinity of a MOX fuel fabrication facility, such as petrochemical installations, forests, pipelines ~~and~~ road, rail or sea routes used for the transport of flammable material such as gas or oil, and volcanic hazards.	Please reconsider the place of the word 'and' in the list. The clarity might also need some reordering of the items in the list.	X			
25.	FIN10	5.76 Heading between paras 5.75 and 5.76		In SSG 6 this heading is combined with the previous one as "*External fires and explosions and external toxic hazards"* Consider which one is better and use the same in both	X			
26.	JAP09	New para after 5.81.	5.81.A To prevent failure of equipment containing hazardous materials, effective programmes for maintenance, periodic testing and inspection should be established at the design stage (see also paras 5.159–5.161).	Add a description on maintenance, periodic testing and inspection to keep consistency with DS517B.	X			
27.	JAP10	5.82.	*Radiolysis* The irradiation of organic or hydrogenated substances by plutonium, or the resulting decomposition of molecules, might lead to the generation of gas, especially the release of hydrogen or the degradation of containment systems. (a) Liquid effluents and organic solvents used in the laboratory;	Lessen from JAEA Oarai, where the polyvinyl chloride (PVC) bags bursted. https://inis.iaea.org/search/search.aspx?orig_q=RN:50064970	X			

			(b) Contaminated oils and inflammable waste; (c) Process scraps enclosing hydrogenated additives; (d) ~~Boxes~~ Containers or plastic bags containing PuO_2 or MOX					
28.	JAP11	5.84.	Move para 5.84 under the subtitle of "Facility failures and equipment failures"	This para describes one form of failure of mechanical items.	X			
29.	FIN11	5.85 -5.88	In accordance with the risks identified in the site evaluation (see Section 4), uranium fuel fabrication facility should be designed to withstand the design basis impact.	Will this standard say nothing about the design to withstand the design basis impact (Like in SSG6 5.75)? Is this not required for a MOX fabrication facility while it is required for a uranium fuel fabrication facility?	X			
30.	FIN12	5.88	Instrumentation should be provided for measuring all the main variables whose variation may affect the safety of processes (such as pressure, temperature and flowrate). In addition, instrumentation should be provided, for monitoring general conditions at the facility (such criticality safety related parameters, as radiation levels, releases of effluents and ventilation conditions), and for obtaining any other information about the facility necessary for its reliable and safe operation (such as presence of personnel and environmental conditions)	SSG 6 5.78 (given here beside) has a better formulation to this paragraph.	X			
31.	FIN13	5.92 (1), dash 1.		Should the control parameters really include all of there as it now reads, or should there be	X			Wording is more clear now.

				something that indicates that the control parameters should contain those that are relevant for the method of criticality control				
32.	FIN14	5.92 After 5.92		Is there no need for requirement on instrumentation in various states of the facility, see e.g. requirements 5.83-5.86 in SSG6?	X			
33.	FIN15	5.95 (a)		The layout of the text should be revised. the dashed bullets should start at separate lines.	X			
34.	FIN16	5.97 /1	~~for~~ The risk assessment of MOX fuel	No need for the word for		X		The provision was replaced, so not applicable any more.
35.	USA01	5.101	Add language to specify the type of design basis aircraft.	This is a generalized statement and does not provide any parameters on the type of aircrafts to be considered.			X	Facility specific SSGs do not define the design basis parameters, no magnitudes are quantified. Qualitative scope is provided. See also other similar IAEA safety standards. The precise specification is up to the national practice and regulatory framework.
36.	FIN17	5.107 /2	consequences of an accident, the ~~wide~~ entire range of physical processes that could lead to a release	Shouldn't all the processes be considered. This is also the case SSG 6 (5.95)		X		The provision was replaced, so not applicable any more.

37.	FIN18	5.107 /4	… modelled in the accident analysis and ~~the bounding cases encompassing~~ the worst credible consequences should be determined	Isn't it enough with the worst case, like in SSG 6 5.95?	X			
38.	FIN19	5.108 5.108 +		Why aren't there given in this standard advice on how to do the safety assessment (the two possible approaches, like in SSG6 5.96)?		X		The experience with MOX fuel fabrication facilities is limited compared to fuel fabrication and there was no standardized approaches among Member States identified.
39.	FIN20	5.114 Heading before 5.114	*Assessment of possible radiological or associated chemical consequences*	Leave the title as it was! The paragraphs also contain something about the chemical consequences.	X			
40.	FIN21	5.114 (c-d)	(d) Identification and analysis of conditions at the facility, including internal and external initiating events that could lead to a release of material or of energy with the potential for adverse effects, the time frame for emissions and the exposure time, in accordance with reasonable scenarios. (e) Quantification of the consequences for the individuals and population groups identified in the safety assessment.	Why is this crossed out from the MOX faciltiy while it is left for Uranium faciltiy (SSG6 5.102 d). Also, a bullet should be added corresponding to SSG6 5.103 (e) Quantification of the consequences for the individuals and population groups identified in the safety assessment.	X			
41.	FIN22	5.120	Useful guideline for assessing the acute and chronic toxic effects of chemicals used in MOX fuel fabrication facilities is provided Ref. [~~15~~XX].	The reference should be corrected. This does not refer to the same reference as in SSG6!	X			

42.	GER02	5.121	To demonstrate the protection of workers, public and the environment from accidents the following two approaches, or another equivalent approach, should be considered in the safety assessment of conversion facilities and uranium enrichment facilities: (1) The first approach involves the identification of structures, systems and components important to safety based on an analysis of all credible accidents that can exceed pre-established criteria for facility personnel, members of the public and the environment. It also involves demonstrating that these structures, systems and components can reduce the consequences and/or the likelihood of potential accidents below the pre-established criteria. This approach would also provide information for the development of the emergency plans. (2) The second approach starts with the selection of the limiting accident conditions, referred to as bounding or enveloping scenarios. It should be then demonstrated in a conservative way, with no account taken of any (active) structures, systems and components important to safety or administrative measures, that the consequences of these limiting accident conditions are within established facility independent acceptance criteria.	Please add this paragraph after 5.121 to be commensurate with DS 517 A and B. There seems to be no reason why these approaches are missing in the safety analysis for accident conditions for MOX fuel fabrication facilities.			X	See comment No. 38

			This assessment is followed by a review of the possible accident sequences to identify provisions of design features and administrative measures, taking into account a graded approach in accordance with Requirement 11 of SSR-4 [1], to further reduce the consequences and/or the likelihoods of potential accidents and to provide information for the development of the emergency plans.					
43.	FIN23	5.124	MOX fuel fabrication facilities use dry processes and generate dust.~~,~~ ~~and the~~ The effluent discharges from MOX fuel fabrication facilities should be reduced by filtration, which normally consists of a number of high efficiency particulate air (HEPA) filters in series	Divide the sentence into two for clarity. One issue in one sentence not everything in the same.	X			
44.	UKR07	5.126	5.126. For analysing design extension conditions, best estimate methods with realistic boundary conditions can be applied. Acceptance criteria for this analysis, in accordance with para. 6.74 of SSR-4 [1], should be defined by the operating organization and should be reviewed by the national regulatory body.	Editorial correction. Missing point.	X			
45.	GER04	5.137 Line 4	… The conditions under which an off-site emergency is required to be declared for a facility should include criticality accidents (if a dose assessment for members of the	According to the resolution of comment GER32 we suggest to modify our proposal to „[…](if a dose assessment for members of the public in case of an		X		As further explained in the revised SSG-27, nuclear criticality safety concept

			public in case of an assumed criticality shows this is necessary), widespread fires and earthquakes.	~~postulated~~ assumed criticality shows this is necessary), […]" In facilities where criticality is a design base accident, assessment is mandatory; however, often (as is in Germany the case even there's no MOX facility in operation), such assessment is requested by authorities even for facilities where criticality is considered as design extension condition.				differs from the traditional 'design basis accident' concept. There is nothing like 'design basis criticality'. Criticality is always beyond design basis. The wording was modified to simply "criticality accidents' and 'might be required' so it leaves all options open.
46.	JAP12	5.138	The general requirements for optimization of protection and safety for waste and effluent management and the formulation of a waste strategy are established in IAEA Safety Standards Series No. GSR Part 5, Predisposal Management of Radioactive Waste [27] and additional recommendations are provided in IAEA Safety Standards Series Nos GSG-3, The Safety Case and Safety Assessment for the Predisposal Management of Radioactive Waste [28], GSG-1, Classification of Radioactive Waste [29], SSG-41, Predisposal Management of Radioactive Waste from Nuclear Fuel Cycle Facilities [30] and GSG-16 [11]. Recommendations on	Correction.	X			

			aspects that are particularly relevant or specific to ~~conversion facilities and uranium enrichment facilities~~ uranium and plutonium mixed oxide fuel fabrication facilities are provided in paras 5.139-5.140.					
47.	FIN24	5.140	The analyses of handlings should cover: (a) Transportation routes and intersections; (b) Technical limits of the transportation vehicles; Handling failures during transportation.	These could be numbered (a), (b) and (c), like in SSG6 5.123	X			
48.	JAP13	5.142 New para after 5.142	5.142A Liquid effluents to be discharged to the environment should be monitored, treated and managed as necessary to reduce the discharges of radioactive material and hazardous chemicals. 5.142B Where necessary, equipment should be installed to reveal potential failure of treatment systems, such as differential pressure gauges to identify failed filters. If required by the safety analysis or the relevant authorization, discharge monitoring should be provided via continuous sampling of the activity in the liquid or gas, coupled with continuous measurement of the discharge flow rate.	Add paragraphs on monitoring systems, as did in DS517B.	X			
49.	JAP14	5.142.	MOX fuel fabrication facilities which use dry processes generate dust. The gaseous effluent discharges from MOX fuel	Clarification Effluent filtered by HEPA is gaseous one.	X			

			fabrication facilities should be reduced by filtration, which normally consists of a number of HEPA filters in series.					
50.	JAP15	5.145.	Plutonium oxide and MOX can generate significant dose rates depending on the isotopic composition of the material processed. MOX from higher burnup plutonium oxide can give rise to significant neutron dose rates while the presence of ^{241}Am (a decay product of ^{241}Pu) can give rise to gamma radiation. Uranium oxide from reprocessing may also contain residual fission products and ^{232}U with its ~~fission products~~ descendent nuclides that give rise to beta and gamma radiation.	Use precise expression.			X	Technically we agree but this is a small nuance and fission products are not incorrect. Fission products are generally used term in the whole document. We prefer to keep this for consistency.
51.	FIN25	7		The numbering of the paragraphs is not working for paras 7.3-7.6 and 7.8. Please reconsider it. If comparing to SSG 6 paras 7.7 and 7.9 should be at the same level as 7.1 and 7.2 while 7.3-7.6 and 7.8 should be under 7.2	X			
52.	GER01	7.03 (2) and (3)	In the stages of commissioning, the operating organization should continue taking the opportunity to train personnel in the safety requirements, operating procedures and emergency procedures.	Please add this sentence, since it might appear to the reader that training of personnel is only relevant in the cold commissioning stage.			X	We understand the intent of the comment, however the objective here was to underline the fact that the personnel should be fully ready/trained/qualified before the hot

								commissioning. At this stage all personnel should be ready to operate in full scope. Continuous retraining is then captured in Section 8.
53.	FIN28	7.18 paragraph just before Ageing management (former 7.18)	Programme for calibration and periodic inspections of the facility should be established. Its purpose is to verify that the facility and SSCs are operating in accordance with the operational limits and conditions. Suitably qualified and experienced personnel should carry out calibrations and inspections. Particular consideration should be given to fatigue affecting equipment and to the ageing of SSCs.	Why is this removed from SSG-7 while it is left in SSG-6 8.23? Aren't calibration and periodic inspections needed on a MOX facility?		X		Provisions in SSG-6 and 7 harmonized.
54.	FIN26	8.04		There is mentioning of such a committee in section 7 dealing with commissioning Same thing for SSG6 and probably 5	X			
55.	UKR08	8.04	8.4. Requirement 56 of SSR-4 [1] states that: **"~~[t]~~ The operating organization shall ensure that the nuclear fuel cycle facility is staffed with competent managers and sufficient qualified personnel for the safe operation of the facility."**	Editorial correction			X	This is the correct citation of the original text.
56.	UKR09	8.05	8.5. Para. 9.16 of SSR-4 [1] states that:	Editorial correction			X	This is the correct citation of the original text.

			"~~[a]~~ A detailed programme for the operation and utilization of the nuclear fuel cycle facility shall be prepared in advance and shall be subject to the approval of senior management."					
57.	FIN27	8.12 Heading before 8.12	~~FACILITY OPERATION~~ OPERATIONAL DOCUMENTATION	As in SSG-6	X			
58.	USA03	8.15	Complementary training of safety and security personnel and their mutual participation in exercises of both types should be part of the training programme to effectively manage the interface between safety and security. There should be a focus on coordinated command and control interfaces and communications (interoperability) to address execution and exercise strategies.	An effective interface can be accomplished through training that focuses on coordinated command and control interfaces and communications.		X		The provision was added to 8.94 (Emergency Preparedness sub-section) as was suggested also in SSg-6.
59.	JAP16	8.20. (a)	In accordance with para. 9.31 of SSR-4 [1], limits on operating parameters are required to be established for safe operation of a MOX fuel fabrication facility. Examples of such limits are the following: ***(a) The allowed ranges of the isotopic composition of plutonium oxide and the content of ^{241}Am especially at, but not limited to, the plutonium or MOX receipt stage;*** ……	MOX receipt stage should be considered. The same comment is as #1.	X			

60.	FIN29	8.40 /1	The modifications made to a facility (including those to the operating organization) should be reviewed on a …	As in SSG-6 8.32	X			
61.	JAP17	8.41.	The periodic tests and inspections should be completed by regular checks performed by the operating personnel, such as the following: (a) Monitoring of deterioration (e.g. measurement of metallic impurities in fluoric acid); (b) Regular visual inspections of SSCs (e.g. uranium oxide and plutonium oxide powder pipes; (c) Monitoring of operating conditions (e.g. taking heat images of electrical cabinets, check of temperatures of ventilator bearings).	(a) Examples should be indicated for better understanding as stated in DS517A. (b) Visual inspection is not limited to uranium pipes. If the alliance with (a) and (c) is considered, it should be the inspection of SSCs. Above should be applied to both DS517A and DS517B.		X		Examples in b) added. Example in a) are specific to conversion acilities, not applicable to MOX fuel fabrication facilities.
62.	UKR10	8.42	8.42. Requirement 61 of SSR-4 [1] states that **"~~[t]~~ The operating organization shall establish and implement a programme for the control of modifications to the facility."** The management system for a uranium fuel fabrication facility should include a standard process for all modifications (see para. 3.19). The work control system, quality assurance procedures and appropriate testing procedures of the facility should be used for the implementation of modifications.	Editorial correction			X	This is the correct citation of the original text.
63.	FIN30	8.43		The dashed bullets should be numbered a), b) etc. for clarity	X			

				and to make it easier to refer to them.				
64.	FIN31	8.45 and 8.46		8.45 and 8.46 are saying the same things. Reduce overlapping.	X			
65.	FIN32	8.46 Items 'Radiation protection' and 'Criticality safety'		Why is the order of subjects different in SSG7 and SSG6. In SSG6 Radiation protection is before Criticality safety and here in SSG 7 vice versa. Consistency between the two standards is needed.	X			The order was fixed.
66.	UKR11	8.46	8.46. The safety committee is required to review the proposed modifications (see para. 4.31(d) of SSR-4 [1]). Suitable records should be kept of their decisions and recommendations.	Editorial correction. Missing point.	X			
67.	FIN33	8.52 /3	actions as specified in ~~Ref.~~ GSR Part 3 [16]. The procedures	Consistency in the notation within the standard	X			
68.	PAK02	8.52	The requirements for criticality safety in MOX fuel fabrication facilities are established in **Requirement 66** and paras 9.83 – 9.85 and 9.87 of SSR-4 [1]	Requirement 66 is also about criticality control in operation.	X			
69.	FIN34	8.54	The monitoring results from the radiation protection programme should be compared with the operational limits and conditions. Furthermore, these monitoring resulst ~~and they~~ should be used to verify the dose calculations made in the initial environmental impact assessment.	Clarity, one thing in a sentence.	X			

70.	FIN35	8.55 /2-3	(^{238}Pu ~~238~~ has a short half-life and ~~241~~Pu ~~241~~ decays to	Duplicate expression	X			
71.	FIN36	8.55 /3	^{241}Am). ~~This~~ The doses should be controlled by integrity of the first containment barrier, which should be monitored close to the workplace	The word 'This' refers to the isotopic proportion of plutonium. Do you really mean that the isotopic proportion should be controlled by the first containment barrier and by means of air-sampling?	X			
72.	FIN37	8.56 bullet l)/6	operations, certain maintenance operations or changing of gloves of a glovebox).	Reduce the risk of confusion as this bullet discusses personal protective equipment. The gloves to be changed are certainly not personal gloves	X			
73.	FIN38	8.56 bullet n)/1	Any ~~staff~~ personnel having wounds should protect		X			
74.	UK01	8.58	Remove or reword final sentence	This sentence might give the impression that emergency arrangements are only required for criticality incidents, whereas Para 8.91 lists a range of potential conditions that might require emergency arrangements. It is not clear that the sentence adds any value, other than stating that high external dose rates may be encountered.	X			
75.	FIN39	8.60 and 8.62		Why are paras 8.60 and 8.62 in different order than 8.43 and 8.45 in SSG6? Consistency between the two standards is needed.	X			
76.	FIN40	8.70 /4	… Carbon dioxide may be used in automatic fire suppression systems	CO_2 acts as a moderator and should not be used in	X			

			except where it may cause a criticality risk. A leakage…	environments where it may risk criticality safety				
77.	FIN41	8.81 After 8.81	8.xx Quality control regimes should be applied to the treatment and disposal of waste from all streams to ensure compliance with authorizations for disposal.	I assume this is equally important for a MOX as for a Uranium facility. (SSG-6 8.66)		X		This section in both SSGs were harmonized.
78.	FIN42	8.87 -8.88	The programme for the feedback of operational experience at fuel fabrication facilities should cover experience and lessons learnt from events and accidents at the nuclear facility as well as from other nuclear fuel cycle facilities worldwide and other relevant non-nuclear accidents. It should also include the evaluation of trends in operational disturbances, trends in malfunctions, near misses and other incidents that have occurred at the research reactor and, as far as applicable, at other nuclear installations. The programme should include consideration of technical, organizational and human factors.	There should be a paragraph on the programme for feedback of operating experiences like the one in SSG-6 8.73. This should be as an own paragraph	X			
79.	USA02	8.94	These strategies should also include the roles and actions of security forces and emergency response personnel, including a focus on coordinated command and control interfaces and communications (interoperability). The response to such events should be jointly exercised and evaluated by…	Coordinated command and control interfaces and communications (interoperability) should be included in the strategies	X			

80.	FIN43	9.02 -9.3	Special procedures should be implemented during the preparatory works for decommissioning to ensure that criticality control is maintained when handling equipment whose criticality is controlled by geometry [SSG-6 9.3]	Consider adding similar paragraphs as 9.3 and 9.4 in SSG-6. Especially 9.3 seems to me important as is relates to maintaining criticality safety	X			
81.	GER03	Annex II Page 7,8		Please locate the headline of the table on the following page for convenience.	X			
82.	FIN44	Ref[2]	SSG-6 is under review, if published before or simultaneously with this one, the reference should be updated.		X			
83.	FIN45	Ref[4]	SSG-27 is under review, if published before this one, the reference should be updated.		X			