

**TITLE: Comments on DS432 “Radiation Protection of the Public and the Environment”**

COMMENTS BY REVIEWER				RESOLUTION			
Reviewer: Ye Guoan Page.7... of...7. Country/Organization: <b>China</b> / China Institute of Atomic Energy Date: 2014-10-29							
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
1	2.19	2.19 In each exposure situation, the process of justification and optimization <del>should</del> <b>is suggested to</b> include consultation with interested parties, <b>e.g. operating staff, local residents.</b>	<p>In some countries, the process of justification and optimization usually consultation with some experts in these fields.</p> <p>Different exposure situations, the process is suggested to consult with different interested parties. So for easily understanding the interested parties, some examples should be given.</p>			R	The term “Interested party” is a defined term in GSR Part 3. There is an explanatory note to the definition in GSR Part 3 that sets out examples of people/organization that are typically included under interested parties.

**TITLE DPP on DS 432 “Radiation Protection of the Public and Protection of the Environment”.**

COMMENTS BY REVIEWER				RESOLUTION			
Reviewer: M. Medici, C. Bossio, H. Lee Gonzales Page.1 of Country/Organization: <b>Argentina</b> /Nuclear Regulatory Authority Date: November 2014							
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
1	2.4 page 3 The magnitude and extent of these exposures can usually be predicted. Both exposures and potential exposures can and should be taken into account at the planning or design stage.	The magnitude and extent of these exposures can usually be predicted. Both exposures, <i>expected to occur</i> and potential exposures can and should be taken into account at the planning or design stage.	Normal expected to occur exposure were missing in the original phrase.	A	Text has been modified		
2	2.21 2.21. Constraint is defined as a prospective and source related value of individual dose (dose constraint) or risk (risk constraint) that is used in planned exposure situations <u>as a parameter</u> for the optimization of protection and safety for the source, and		Please clarify de concept of using of constraint as a parameter for optimization.		This is the definition of “constraint” that appears in the list of definitions of the BSS.		

	that serves as a boundary in defining the range of options in optimization.						
3	2.22 page 7 However, treating a dose constraint as a target value is not sufficient, and is expected that optimization of protection will establish an acceptable level of dose below the dose constraint.	However, treating a dose constraint as a target value is not <del>sufficient</del> <i>correct</i> , and is expected that optimization of protection will establish an acceptable level of dose below the dose constraint.	Dose constraint is not a target but a boundary for optimization.		To discuss with editor		
4	2.34 page 9 The habits (e.g., consumption of foodstuffs, location, usage of local resources) used to characterize the representative person should be typical habits of a small number of individuals representative of those most highly exposed (now or in future) but not the extreme habits of a single member of the	The habits (e.g., consumption of foodstuffs, <del>location</del> , usage of local resources) used to characterize the representative person should be typical habits of a small number of individuals representative of those most highly exposed (now or in future) but not the extreme habits of a single member of the population.	Delete “location”, because the location of the representative person or critical group is not a habit	A	Text has been modified		

	population.						
5	3.1 page 14 Last sentence: “The sources within practices facilities that contain radioactive material and facilities that contain radiation generators, and individual sources of radiation.”		Seems to be incomplete.	A	Text has been modified		
6	3.12 page 16 .....containing radioactive material type approved by the regulatory body which are not otherwise exempted based on their activity (Table I-2, Schedule I).	.....containing radioactive material type approved by the regulatory body which are not otherwise exempted based on their activity (Table I-1 I-2, Schedule I).	Table I-2 refers only to activity concentration values. For radiation generators and equipment containing radioactive material, activity values from Table I-1 are applicable.	A	Text has been modified		
7	3.15 page 16 The criteria for exemption and for clearance have been selected to ensure the protection of the public.	The <i>dose</i> criteria for exemption and for clearance have been selected to ensure the protection of the public.	It is suggested to mention “dose” criteria, and to <u>move</u> this sentence following the point 3.9			R	GSR Part 3 uses criteria in Schedule I.
8	3.41 page 21 3.41. Potential	Potential exposure of the public includes <del>potential</del>	Editorial	A	Text has been modified		

	exposure of the public includes potential exposure of the public in events resulting in unplanned release of radioactive material to the environment....	<del>exposure of the public in events resulting in unplanned release of radioactive material to the environment</del>					
9	3.41 page 21 Last sentence: “...or events in which potential exposures occur far into the future and doses would be delivered over long time periods e.g. in the case of solid waste disposal in solid waste repositories [17].”	<del>“...or events in which potential exposures occur far into the future and doses would be delivered over long time periods e.g. in the case of solid waste disposal in solid waste repositories [17].”</del>	We assume that repositories are planned bearing in mind that doses would normally be delivered over long time period certainly, with probability of occurrence equal one. It not seems to be a potential exposure condition, except by the case of occurrence of any disruptive event which could alter the normal scenario of exposure.		Requires consideration.		
10	3.49 page 22 The representative person is equivalent of and replaces mean dose to the critical group.	The <i>dose to the</i> representative person is equivalent of and replaces mean dose to the critical group.	The equivalence is between doses.	A	Text has been modified		

**IAEA Safety Guide DS432 Radiation *Protection of the Public and Protection of the Environment* (30 09 2014)**  
**ENISS Comments**

COMMENTS BY REVIEWER				RESOLUTION			
Reviewer: ENISS Page 1 of 3 Country/Organization: <b>ENISS</b> Date: 06 11 2014							
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
1	General	<p>The document does not seem to provide any additional guideline on implementation of the radiation protection requirements towards environment or public, referred to in GSR 3.</p> <p>The text seems to be a copy paste of requirements providing little to no guide on implementation.</p> <p>The document also refers to a draft GSR 7 document, which is not very good practice, since the GSR document is not approved and formulations could be changed.</p> <p>In chapter 4 Protection of the Environment, no specific guidance is provided, but refers to an earlier concept “if human is protected, nature is protected” and to another draft document DS427, which has an objective to provide guideline in demonstration of protection.</p> <p>The objectives as defined in the DPP are not met: <i>The objective of the Safety Guide is to develop in detail the generic criteria for protection of the public and the environment against radiation exposure in planned, emergency and existing exposure situations as proposed in the revised BSS.</i></p> <p>The document needs to be further developed to serve its purpose and objectives.</p>					

2	Title of the Draft Safety Guide	'Radiation Protection of the Public and <del>Protection of</del> the Environment'	The current title gives the impression that this Safety Guide is about the protection of the environment from a global point of view and not from the radiological point of view.		To discuss with Technical editors.		
3	Chapter 2	Needs to be reviewed and re-written.	Just a copy paste of different requirements and no any added value of the chapter.				
4	1.8 and 1.10	Contradicting text: 1.8 states that generic guidance is provided in the safety guide not specified for exposure situation, while in 1.10 the clear specification is provided.	Review		Text to be modified to make clearer.		
5	2.2, 2.11, 2.38, etc	<del>.... GSR 7 establishes requirements</del> <del>....</del>	References to draft documents are not to be used as these might be changed or never be approved. Wait until the requirements are published or refer to the SF.			R	GSR Part 7 has been approved by the Commission on Safety Standards and it will be published before DS432 is published.
6	2.6 and 2.7	Explain the transfer from emergency to existing situation.	There is a lack of guidance and criteria when emergency exposure situation becomes existing exposure situation.		Another Safety Guide is being developed (DS474).		
7	2.12	Decision should be taken at a sufficiently high governmental level...	Which decision: on emergency protection, medical exposure or anything else? It is unclear from the text as	A	Text has been modified.		

			the chapter deals with framework of protection and the section deals with justification.				
8	2.19	<del>In each exposure situation the process of justification and optimization should include consultations with interested parties.</del>	This statement is very confusing and needs development or to be deleted. It can be misused. Do you mean a doctor, for instance, should consult a patient which diagnostic method to be applied? Or should the industry discuss each and every decision on occupational protection with everyone?		Text to be modified.		
9	3.9	References are missing		A	Text has been modified.		
10	Chapter 4		This chapter should be further developed to provide useful guidance and recommendations on the radiological protection of the environment.				

**Draft Safety Guide DS432 “Radiation Protection of the Public and Protection of the Environment”  
(Version dated 30 September 2014)**

**Status: STEP 7 – First review of the draft safety standard by the SSCs**

Note: Blue parts are those to be added in the text. Red parts are those to be deleted in the text.

COMMENTS BY REVIEWER					RESOLUTION			
Reviewer: <b>Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB)</b> (with comments of GRS) Country/Organization: <b>Germany</b>					Page 1 of 11 Date: 2014-11-06			
Relevance	Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
1	1	General	This document will be published as a Safety Guide. We notice that numerous paragraphs in this document, especially in Section 3, solely contain citations from GSR Part 3 or GSR Part 7, without presenting recommendations and guidance on how to meet the requirements. This seems to be not the appropriate style of writing a Safety Guide. Recommendations and guidance should be more elaborated in this publication.	In GSR Part 3 and GSR Part 7, more details regarding a certain requirement are given in the subsequent paragraphs. Therefore, it is not necessary to repeat them in DS432.				
3	2	1.2	1 <sup>st</sup> sentence: “General requirements ... are presented in the Safety Requirements No. GSR Part 3, Radiation Protection and Safety of Radiation Sources: International Basic Safety Standards ( <del>GSR Part 3</del> ) [2].”	Editorial (unnecessary doubling of information).	A	Text has been modified.		
3	3	1.3	2 <sup>nd</sup> sentence: “The relevant radiation protection requirements are defined according to the exposure situation, <del>whether</del> <u>i.e.</u> planned exposure situations, emergency exposure situations or existing exposure	Wording.	A	Text has been modified.		

			situations.”					
3	4	1.6	2 <sup>nd</sup> sentence: “Such guidance is intended to underpin the development of facility and activity specific Safety Guides dealing with this area of protection and, by <del>so</del> doing <u>so</u> , ensure a consistent approach.”	Editorial.			Discuss with editors	
3	5	1.7	1 <sup>st</sup> sentence: “This General Safety Guide covers the generic application of the requirements given in the GSR Part 3 [2] that relate to the protection of the environment and protection of members of the public <u>for</u> planned exposure situations and existing exposure situations, and in the GSR Part 3 [2] and GSR Part 7 [6] <u>for</u> <del>in</del> emergency exposure situations.”	Editorial.	A		Text has been modified.	
3	6	1.10	3 <sup>rd</sup> sentence: “Section <del>s</del> 3 deals with practical application of the radiation protection framework in each exposure situation.”	Editorial.	A		Text has been modified.	
3	7	2.1	1 <sup>st</sup> sentence: “Paragraph 2.15 of GSR Part 3 [2] requires that the scope of applicable governmental and regulatory framework <u>shall</u> be specified.”	Wording.	A		Text has been modified.	
3	8	2.3	1 <sup>st</sup> sentence: “A planned exposure situation is <u>a</u> situation of exposure that arises from the planned operation of a source or from a planned activity ...”	Wording.	A		Text has been modified.	
2	9	2.7	Last sentence: “They also include situations of exposure due to residual radioactive material that derives from past practices that were not subject to regulatory control or that remains after an emergency exposure situation has been declared ended, <u>and</u>	Completion.				

			<a href="#">exposure due to commodities.</a> ”					
2	10	2.8	We recommend to shift this paragraph to the section “Planned exposure situations”.	In GSR Part 3, this paragraph is included in Section 3 (Planned exposure situations), see Para 3.4.				
3	11	2.12	4 <sup>th</sup> sentence: “In planned exposure situations, potential exposures <del>is</del> <a href="#">are also</a> required <del>also to</del> be considered in the justification decision.”	Grammar.	A	Text has been modified.		
3	12	2.17	1 <sup>st</sup> sentence: “For emergency exposure situations, Requirement 44 of GSR Part 3 [2] and Requirement 5 of GSR Part 7 [6] require that <a href="#">the</a> government ensures that protection strategies are developed, justified and optimized ...”	Editorial.	A	Text has been modified.		
3	13	2.22	Last sentence: “However, treating a dose constraint as a target value is not sufficient, and <a href="#">it</a> is expected that optimization of protection will establish an acceptable level of dose below the dose constraint.”	Missing word.	A	Text has been modified.		
3	14	2.36	“The responsibilities of government with regard to protection and safety applicable to all three exposure situations are set out in paras 2.13-2.28 of GSR Part 3 in general terms. These include: <a href="#">(a)</a> establishing an effective legal and regulatory framework for protection and safety in all exposure situations; <a href="#">(b)</a> establishing legislation that meets specified requirements; <a href="#">(c)</a> establishing an independent regulatory body with the necessary legal authority, competence and resources; <a href="#">(d)</a> establishing requirements for education and training in protection and safety; and <a href="#">(e)</a> ensuring	Include consecutive numbering in order to support structuring of the government’s responsibilities with regard to protection and safety (compare, e.g., with Para 3.57), with the aim to improve the readability and comprehensibility of the entire sentence.	A	Text has been modified.		

			arrangements are in place for the provision of technical services, education and training services.”					
2	15	2.42	Please add one more sentence: “The responsibilities of the regulatory body or other relevant authority specific to protection of the public in existing exposure situations are set out in paras 5.4, 5.5, 5.7-5.9 and in Requirement 51 of GSR Part 3. <a href="#">These responsibilities include: (a) to establish and implement a protection strategy for an existing exposure situation commensurate with the associated radiation risks; (b) to ensure that remedial actions or protective actions are expected to yield sufficient benefits to outweigh the detriments associated with taking them; (c) to ensure that the form, scale and duration of remedial actions or protective actions are optimized; (d) to review the reference levels periodically; and (e) to establish reference levels for exposure due to radionuclides in commodities.</a> ”	Clarification. It is proposed to specify the responsibilities of the regulatory body or other relevant authority related to “protection of the public in existing exposure situations” rather than to cite only the relevant paragraphs of GSR Part 3.	A	Text has been modified.		
2	16	2.43	Please add one more sentence: “The responsibilities of the regulatory body in relation to emergency preparedness and response are set out in paras 4.11-4.15 of GSR Part 7. <a href="#">These responsibilities include: (a) to ensure that arrangements for preparedness and response to a nuclear or radiological emergency under the responsibility of the operating organization are dealt with through the regulatory process; (b) to establish or adopt regulations and guides to specify the principles, requirements and associated criteria for safety upon which its regulatory judgements,</a>	Clarification. It is proposed to specify the responsibilities of the regulatory body related to “emergency preparedness and response” rather than to cite only the relevant paragraphs of GSR Part 7.	A	Text has been modified.		

			<p><u>decisions and actions are based; (c) to require that arrangements for preparedness and response for a nuclear or radiological emergency be in place for the on-site area for any regulated facility or activity that could necessitate emergency response actions; (d) to ensure that the on-site emergency arrangements are adequate; and (e) to ensure that the operating organization is given sufficient authority to promptly take necessary protective actions on the site in response to a nuclear or radiological emergency.”</u></p>					
3	17	3.1	<p>“Requirements 3.1 to 3.4 of the BSS set out the practices and sources within practices that are included in the scope <del>for</del> <u>of</u> planned exposure situations. These practices include: <u>(a)</u> the production, supply and transport of radioactive material and devices that contain radioactive material; <u>(b)</u> the production and supply of devices that generate radiation; <u>(c)</u> the generation of nuclear power including any activities within the nuclear fuel cycle; <u>(d)</u> the use of radiation or radioactive material for medical, industrial, veterinary, agricultural, legal or security purposes; <u>(e)</u> the use of radiation or radioactive material for education, training or research; <u>(f)</u> the mining or processing of raw materials that involve exposure due to radioactive material; and <u>(g)</u> any other practice <u>as</u> specified by the regulatory body. The sources within practices <u>include</u> facilities that contain radioactive material and facilities that contain radiation generators, and individual sources of radiation.”</p>	<p>2<sup>nd</sup> sentence: Include consecutive numbering in order to support structuring of the different practices for which the requirements for planned exposure situations apply (compare, e.g., with Para 3.57), with the aim to improve the readability and comprehensibility of the entire sentence.</p> <p>3<sup>rd</sup> sentence: Missing word.</p>	A	Text has been modified.		

3	18	3.9	“Under these criteria, a practice or a source within a practice may be exempted provided that the effective dose expected to <u>be</u> incurred by any individual: ...”	Grammar.	A	Text has been modified.		
3	19	3.11	“... Schedule I of the GSR Part 3 presents activity concentrations and activities of moderate amounts of material which may be exempted (Table I <sub>-1</sub> ), activity concentrations for bulk amounts of solid material which may be exempted, and material which can be cleared (Table I <sub>-2</sub> ) without further consideration.”	Editorial (numbering of tables in Schedule I of GSR Part 3).	A	Text has been modified.		
3	20	3.12	“Para. <del>4</del> I <sub>-3</sub> (c) of GSR Part 3 provides for the exemption of radiation generators type approved by the regulatory body, and para. I <sub>-6</sub> for the exemption of some equipment containing radioactive material type approved by the regulatory body which are not otherwise exempted based on their activity (Table I <sub>-2</sub> , Schedule I).”	Editorial (numbering of paragraphs and tables in Schedule I of GSR Part 3).	A	Text has been modified.		
3	21	3.13	2 <sup>nd</sup> sentence: “... Table I <sub>-3</sub> establishes activity concentration levels for materials containing natural radionuclides which may be cleared without further consideration.”  3 <sup>rd</sup> sentence: “... para. I <sub>-4</sub> provides for case by case basis exemption of bulk amounts of materials, and para. I <sub>-12</sub> (c) provides for the clearance of residues ...”	Editorial (numbering of paragraphs and tables in Schedule I of GSR Part 3).			R	Text in DS432 is correct.
3	22	3.45	“DS427 presents a general framework ... which describes the estimation of risk and the use <u>of</u> risk constraints for planned exposure situations [8].”	Editorial.	A	Text has been modified.		
3	23	3.46	“Requirement 12 of GSR Part 3 [2]	Wording.	A	Text has been modified.		

			requires that the government or the regulatory body <del>to</del> establish dose limits for public exposure in planned exposure situations, ...”					
1	24	3.49	“... A representative person is defined to be “an individual receiving a dose that is representative of the doses to the more highly exposed individuals in the population”. The <a href="#">dose to the representative person</a> is <a href="#">the</a> equivalent of, and replaces, <a href="#">the</a> mean dose to the critical group.”	In the last sentence, the interrelation between the terms ‘representative person’ and ‘critical group’ is incorrectly expressed (compare with Para 2.33).	A	Text has been modified.		
2	25	3.51	“The requirements in GSR Part 7 <a href="#">[6]</a> and in Section 4 of GSR Part 3 <a href="#">[2]</a> for emergency exposure situations apply for preparedness and response for a nuclear or radiological emergency ( <del>para. 4.1, Ref. [2] and Ref. [6]</del> ). These requirements include those related to the transition from an emergency to an existing exposure situation (see <del>para. 1.4</del> <a href="#">Req. 18</a> of Ref. [6] and Req. 46 of Ref. [2]).”	1 <sup>st</sup> sentence: Consistent notation of references throughout the document is recommended. As the current text already refers to the whole Section 4 of GSR Part 3, separate designation of Para 4.1 in brackets is dispensable and, thus, can be deleted.  2 <sup>nd</sup> sentence: Regarding GSR Part 7, it seems to be more appropriate to refer to Req. 18 (Terminating a nuclear or radiological emergency) with its subordinated Para 5.96 which states: “The transition from an emergency exposure situation to an existing exposure situation and the return to a planned exposure situation shall be made in a coordinated and orderly manner, by making				

				any necessary transfer of responsibilities and with the involvement of relevant authorities and interested parties.”				
3	26	3.52	1 <sup>st</sup> sentence: “Requirement 4 of the Safety Requirements GSR Part 7 [6]; requires for governments to ensure that a hazard assessment is performed ...”	Grammar.	A	Text has been modified.		
2	27	3.67	1 <sup>st</sup> sentence: “For emergency exposure situations, the reference level ... that includes dose contributions from all exposure pathways is proposed [42, 6].”	Wrong reference is cited.	A	Text has been modified.		
3	28	3.69	“Although the decision to select a values within the proposed band of reference level remains at national authorities, GSR Part 7 [6] explains that such selection will depend <del>of</del> <u>on</u> the phase of the emergency, ...”	Grammar.	A	Text has been modified.		
3	29	3.73	4 <sup>th</sup> bullet: “exposures due <u>to</u> radionuclides of natural origin in commodities, including food, feed, drinking water, agricultural fertilizer and soil amendments, and construction materials, and <del>existing-residues</del> <u>residual radioactive material</u> in the environment;”  5 <sup>th</sup> bullet: “exposures due <u>to</u> any other materials in which the activity concentration ...”	Grammar; wording adapted to be in line with Para 5.1 of GSR Part 3 (the term ‘residual radioactive material’ is more precise than ‘existing residues’).  Grammar.	A	Text has been modified.		
3	30	3.75	“The requirements for public exposure are <del>required</del> to be applied to workers in existing exposure situations, ...”	Simplify wording to avoid a circular phrase (“the requirements ... are required to be applied”).		Discuss with editors		
2	31	3.76	Add new last sentence:	For completeness, a	A	Text has been modified.		

			“... For example, high levels of indoor radon may be avoided by incorporating appropriate radon preventive measures into the design of new dwellings. <a href="#">Further guidance on such measures is provided in the Safety Guide SSG-32 [12].</a> ”	reference to the new Safety Guide SSG-32 (ex DS421) should be included here.				
2	32	3.78	“The government and the regulatory body should take measures to identify and evaluate existing exposure situations taking into account <del>of the</del> types of existing exposure situations mentioned in para. <del>3.67</del> <a href="#">3.73</a> , based on indication or evidence of public exposures that are of concern from the point of view of radiation protection.”	Wrong paragraph is cited. Different types of existing exposure situations are listed in Para 3.73.	A	Text has been modified.		
2	33	3.87	1 <sup>st</sup> sentence: “... the generation of waste containing radioactive substances requiring appropriate solutions for <a href="#">its processing</a> <del>their treatment</del> and <del>final</del> disposal.”	According to the IAEA Safety Glossary (2007 Edition), the term ‘processing’ is more comprehensive and includes ‘pretreatment’, ‘treatment’ and ‘conditioning’. The word ‘final’ should be deleted because a contrast between interim disposal and final disposal does not exist.	A	Text has been modified.		
3	34	3.87	2 <sup>nd</sup> sentence: “The selection of the optimized remediation protection option should take into account that some remedial actions could have considerable impacts on the environment, which should be considered within the process of optimization, together with technical, societal and economic factors <del>[BSS]</del> <a href="#">(paragraph 5.12 (d) of GSR Part 3)</a> .”	Include full citation for the sake of completeness.	A	Text has been modified.		

1	35	3.91	<p>“Requirement 50 of the GSR Part 3 provides for the establishment of <a href="#">an</a> appropriate reference level for <sup>222</sup>Rn for dwellings and other buildings. It also provides <a href="#">an activity concentration not exceeding reference level of</a> 300 Bq/m<sup>3</sup> (annual average) as a general reference level <del>for this value</del> which equates, <a href="#">assuming an equilibrium factor for <sup>222</sup>Rn of 0.4 and an annual occupancy of 7000 hours,</a> to an annual<del>ized</del> effective dose of the order of 10 mSv. <a href="#">SSG-32 [12] provides recommendations and guidance on regulatory approaches for the protection of members of the public against exposure indoors due to <sup>222</sup>Rn.</a>”</p>	<ol style="list-style-type: none"> <li>1. Clarification with respect to the reference level for <sup>222</sup>Rn.</li> <li>2. For completeness, a reference to the new Safety Guide SSG-32 (ex DS421) should be included here.</li> </ol>	A	Text has been modified.		
2	36	3.93, 3.94	<p>Delete both Paras since they contain only citations of requirements taken from GSR Part 3. Furthermore, Para 3.93 cites reference numbers [23, 24] that do not belong to DS432. This gives rise to confusion.</p>	<p>The draft document presents no recommendations and guidance on how to meet the requirements in GSR Part 3. This is not the appropriate style of writing a Safety Guide. In the case that Para 3.93 will remain in the Safety Guide, either delete the references in the citation or include the reference numbers in the corresponding list for DS432.</p>	A	Text to be reviewed.		
2	37	4.1	<p>“GSR Part 3 states that “any person or organization applying for authorization: shall, as required by the regulatory body, have an appropriate prospective assessment made for radiological environmental impacts, commensurate with the radiation risks associated with</p>	<p>Wrong paragraph of GSR Part 3 is cited.</p>	A	Text has been modified.		

			the facility or activity” (para. 3.89 (e) of ref. [2]).”					
2	38	Footnote No. 1 to 4.4	“Some aspects of assessment of radiological impact to public and the environment in general are included in Requirement 31 in the BSS <del>[H]</del> [2]. ...”	Wrong reference is cited in the footnote.	A	Text has been modified.		
3	39	4.9	“The explicit assessment of protection of flora and fauna for normal operations will depend on the requirements established in the national regulations, <u>and</u> the characteristics of the activities and facilities under consideration.”	Missing word.	A	Text has been modified.		
2	40	4.16	“For planned exposure situations a framework for radiological environmental impact assessment and protection of the public such as that presented in the Safety Guide <del>DS442 [H]</del> <a href="#">DS427 [8]</a> should be applied to estimate and control radiological effects on public and effects on the environment.”	Wrong reference is cited in this paragraph. Radiological environmental impact assessment is dealt with in DS427.	A	To be reviewed.		
3	41	Ref. [6]	“... Governmental, Legal and Regulatory Framework for Safety, <del>General Safety Requirements Part 1, IAEA Safety Standards Series</del> No. GSR Part 1, IAEA, Vienna (2010) <u>[under revision, Draft DS462]</u> .”	Uniform citation of publications issued in the IAEA Safety Standards Series. Please add revision notice for the sake of completeness. GSR Part 1 (Rev. 1) will be finalized much earlier than DS432.	A	Text has been modified.		
3	42	Ref. [8]	“... <del>Assessment of Facilities and Activities for Protection of the Public and Protection of the Environment, A general framework for prospective radiological environmental impact assessment and protection of the public (Revision of NS-G-3.2)</del> , IAEA, Vienna [Draft DS427].”	Citation of the correct title of DS427 (see current draft version 5 dated September 2014).	A	To be reviewed.		
3	43	Ref. [9]	“... Criteria for Use in Preparedness and Response for a Nuclear or Radiological Emergency, <del>General Safety Guide</del> , IAEA	Uniform citation of publications issued in the IAEA Safety Standards Series.	A	Text has been modified.		

			Safety Standards Series No. GSG-2, IAEA, Vienna (2011).”					
3	44	Ref. [11]	“... Regulatory Control <del>of the Releases of Radioactive Material from Facilities and Activities</del> <u>Discharges to the Environment</u> (Revision of WS-G-2.3), IAEA, Vienna (Draft DS442).”	Citation of the correct title of DS442 (see current draft version 3 dated October 2014).	A	Text has been modified.		

**DS432 Radiation Protection of the Public and Protection of the Environment**

COMMENTS BY REVIEWER				RESOLUTION			
Reviewer: Page 1 of 6 Country/Organization: <b>Japan</b> / Nuclear Regulation Authority (NRA) Date: 10 Nov. 2014							
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
1	General	This document has been developed together with DS427 and DS442. Although generic information such as the definition of relevant terms is also included in DS427, especially in Section 2, the scope or role of these three documents should be clearly allocated. In particular, generic information in DS427 would be better if moved to DS432. The role-sharing and contents of three documents should be arranged again, and these consistencies, including requirements in GSR Part 3, GSR Part 7 etc. should be confirmed. Consultancy meeting of the 3 document combination may be necessary.	Clarification and Consistency				
2	General	Format of citation of other Safety Standards should be consistent among Safety Guides (DS432, DS427, DS442).	Clarification. Examples can be found in other Safety Guides such as SSG-23 (Section 3) and SSG-29 (Section 3 to 7.)	A	Text to be modified.		
3	General	Change “BSS” to “GSR Part3”	Editorial	A	Text has been modified.		
4	1.5/ 4 (p.2)	...of the <del>radiation</del> protection of members of the public and the environment <u>against radiation risk</u> .	“Radiation protection” is applied only to humans. See GSR Part3 (p.408).	A	Text has been modified.		
5	1.5/after last line	Add some explanations to after the last text such as; <u>This Safety Guide has a linkage with other relevant Safety Guides [8, 11] which provides the methodology of the radiological environmental impact assessment and regulatory control of discharge to the environment respectively.</u>	This Safety Guide has been developed in parallel with DS427 and DS442. Hence the linkage with DS427 and DS442 should be mentioned.		There is a link to DS427 and to DS442 in para 1.8.		

## DS432 Radiation Protection of the Public and Protection of the Environment

COMMENTS BY REVIEWER				RESOLUTION			
Reviewer: Page 2 of 6 Country/Organization: Japan/ Nuclear Regulation Authority (NRA) Date: 10 Nov. 2014							
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
6	2.16/1	For planned exposure situations, Requirement 11 <u>of GSR Part 3 [2]</u> states 'the government ...	Editorial However this comment is based on the current format of citation. See Comment No.2.	A	Text has been modified.		
7	2.42, 2.43	Change the location of both paragraphs.	Align with the order of exposure situation.	A	Text has been modified.		
8	2.49/2, 2.50/1, 2.51/1	Paragraph 2.12 <u>of GSR Part3</u> states ... Paragraph 2.31 <u>of GSR Part3</u> states ... Paragraph 2.18 <u>of GSR Part3</u> states ...	Clarification However this comment is based on the current format of citation. See Comment No.2.	A	Text has been modified.		
9	3.25/1	<u>Para.3.17 of</u> GSR Part 3 [2] defines a number of practices...	Clarification However this comment is based on the current format of citation. See Comment No.2.	A	Text has been modified.		
10	3.41/5-6	.... e.g. in the case of solid <u>radioactive waste disposal</u> in <u>solid waste disposal facilities repositories after closure</u> [17].	Consistency terms with SSR-5 [17.]				
11	3.43/1	Risk constraints for public exposure are required to be set by the government or regulatory <u>body authority</u> [2]	See para.3.120 of GSR Part3.	A	Text has been modified.		
12	3.45/1	DS427 [8] presents a general framework ...for planned exposure situations <u>{8}</u> .	Editorial	A	Text has been modified.		
13	3.46	Requirement 12 of GSR Part 3 [2] requires <del>that</del> "the government or the regulatory body to establish ...to apply these limits."	This text only refers to Requirement 12 of GSR Part 3. Consistency with other similar paragraphs referring to GSR Part3. However this comment is based on the current format of citation. See Comment No.2.	A	Text has been modified.		
14	3.50/5-8	Nevertheless <u>GSR Part3 (para 3.27) the BSS</u> [2] requires ...	Paragraph number of GSR Part3 is missing. Alignment to formal document code (not BSS). However this comment is based on the current format of citation. See Comment No.2.	A	Text has been modified.		

## DS432 Radiation Protection of the Public and Protection of the Environment

COMMENTS BY REVIEWER				RESOLUTION			
Reviewer: Page 3 of 6 Country/Organization: Japan/ Nuclear Regulation Authority (NRA) Date: 10 Nov. 2014							
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
15	3.52/ 6	Para. 4.19 of <u>GSR Part7 Ref.</u> [6] introduces	Editorial However this comment is based on the current format of citation. See Comment No.2.	A	Text has been modified.		
16	3.55/2	The protection strategy and overall emergency arrangements developed in accordance with <u>GSR Part7 Ref.</u> -[6] should	Editorial However this comment is based on the current format of citation. See Comment No.2.	A	Text has been modified.		
17	3.67/3	...typically as an effective dose in the range of 20-100 mSv, acute or annual that includes dose contributions from all exposure pathways is proposed [ <del>2</del> , 6].	SF-1 does not referred to specific values.	A	Text has been modified.		
18	EXISTING EXPOSURE SITUATIONS (p.27)	In this sub-section, WS-G-3.1(under revision as DS468) should be cited.	Clarification	A	Text to be reviewed.		
19	EXISTING EXPOSURE SITUATIONS (p.28)	Various public exposures such as due to highly concentrated radioactivity in waste derived from usual solid waste management activities including collection, storage, treatment and disposal, and radioactively contaminated waste would also be arisen in remedial action following an accident. This aspect should be referred to in this sub-section in coordination with WS-G-3.1 (under revision as DS468).	Lessons learned from off-site experience of Fukushima Dai-ichi NPP accident.	A	Text to be reviewed.		
20	3.73/1	The <u>Para. requirement</u> 5.1 of GSR Part 3 sets out ...	Editorial	A	Text has been modified.		
21	3.73/first bullet/1	Add footnote on term “areas”, such as; <u>The term “areas” is used in its broadest sense and can include land, water bodies and industrial sites.</u>	The term “area” is a general term, hence the text in WS-G-3.1 (para.1.4) is useful to understand.	A	Text to be reviewed.		

**DS432 Radiation Protection of the Public and Protection of the Environment**

COMMENTS BY REVIEWER				RESOLUTION			
Reviewer: Page 4 of 6 Country/Organization: Japan/ Nuclear Regulation Authority (NRA) Date: 10 Nov. 2014							
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
22	3.92	Add a new reference “DS458 (now under STEP 14) to this paragraph.	Clarification Usefulness	A	Text to be reviewed.		
23	4.5/5	<del>Para.3.28 of SF-1 IAEA</del> [12] states that “The general intent of the measures...	Wrong citation	A	Text to be reviewed.		
24	Footnote 1/2	...Requirement 31 in <del>GSR Part3 the BSS</del> [24].	Editorial	A	Text has been modified.		
25	4.10/1	Rewrite the first sentence.	GSR Part3 does not define “ <b>objectives for radiological protection of flora and fauna.</b> ” Correct citation is essential to avoid misunderstanding.	A	Text to be reviewed.		
26	4.10/the last text	Rewrite the last sentence.	Although GSR Part3 is cited in this text, it does not use the term “fauna” and “flora.” In addition the term “radiological protection” is only applied to people (see p.408 of GSR Part3). Correct citation is essential to avoid misunderstanding.	A	Text to be reviewed.		
27	4.11/2	Rewrite the first sentence.	GSR Part3 does not explicitly mention “ <b>the integration of humans and environmental protection</b> ”, however it mentions “the assessment of impacts on the environment needs to be viewed in an integrated manner with other features of the system of protection and safety to establish the requirements applicable to a particular source.”	A	Text to be reviewed.		

**DS432 Radiation Protection of the Public and Protection of the Environment**

COMMENTS BY REVIEWER				RESOLUTION			
Reviewer: Page 5 of 6 Country/Organization: Japan/ Nuclear Regulation Authority (NRA) Date: 10 Nov. 2014							
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
28	Figure1 2 <sup>nd</sup> box from the bottom in right flow	Change “Reference Levels” to “Derived Consideration Reference Levels”	ICRP does not define “Reference Levels” for protection of the environment.	A	Text to be reviewed.		
29	Figure1 2 <sup>nd</sup> box from the bottom in left flow	Delete “Reference Levels.”	Reference levels are not applicable to planned exposure situations.	A	Text to be reviewed.		
30	4.16	Reconsider the content and the position of this paragraph.  Or  Delete this paragraph.	Citation of DS442 is deemed wrong. However even if DS427 was cited in this paragraph, para.4.14 and 4.15 have already referred to DS427. Hence this paragraph should be moved to elsewhere before para. 4.14. In addition, the words “and protection of the public” and “and control” should be deleted. See our comment on DS427. Regarding “control” this aspect is addressed in DS442.  If the citation of DS442 remains, the text should be amended to read the contents of DS442.  Deletion of this paragraph would also be feasible because both DS427 and DS442 provide relevant guidance.	A	Text to be reviewed.		

**DS432 Radiation Protection of the Public and Protection of the Environment**

COMMENTS BY REVIEWER				RESOLUTION			
Reviewer: Page 6 of 6 Country/Organization: Japan/ Nuclear Regulation Authority (NRA) Date: 10 Nov. 2014							
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
31	Appendix I  2.27/3-5	Delete this appendix.  <del>...A table summarizing the values for the dose constraints and for reference levels as applicable for each exposure situation as required in GSR Part 3 is presented in Appendix 1.</del>	Due to the nature of this table, contents more than public exposure are included. Such detailed information is deemed not to be appropriate for the intent of this document.  Therefore the description of Appendix 1 in para.2.27 should be deleted.				It is considered that it is useful to compare the dose constraints and reference levels for public exposure with those for occupational exposure.

## DS432 Radiation Protection of the Public and Protection of the Environment

COMMENTS BY REVIEWER				RESOLUTION			
Reviewer Country/Organization: <b>Sweden</b> , Swedish Radiation Safety Authority Date: <b>October 31, 2014</b>							
Comment No.	Para/Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
1	1.5 & 1.6	Remove 1.5	The text is almost the same				
2	2.3	A planned exposure situation is a situation of exposure that arises from the planned...	Editorial	A	Text has been modified.		
3	2.4	Both <b>expected</b> exposures and potential exposures can and should be taken into account at the planning or design stage.	Editorial		To discuss with editor		
4	2.9	The three basic principles which underpin radiation protection, <b>justification</b> , optimization of protection and safety, and application of dose limits, are expressed in Safety Principles...	Editorial		To discuss with editor		
5	2.12	In planned exposure situations, potential exposures <b>are</b> required also <b>to</b> be considered in the justification decision.	Editorial	A	Text has been modified		
6	2.26	Implementation of optimized protection strategies should result in exposure levels below the reference level, and as low as reasonably achievable, as long as these reductions are justified taking into account <b>a</b> range of national factors.	Editorial	A	Text has been modified		
7	2.34	The habits (e.g., consumption of foodstuffs, location, usage of local resources) used to characterize the representative person should be typical habits of a small number of individuals representative of those most highly exposed (now or in <b>the</b> future) but not	Editorial	A	Text has been modified		
8	2.36 & 2.37	The responsibilities of <b>the</b> government...	Editorial	A	Text has been modified		
9	2.37	...or the regulatory body with regard to protection of the public in planned exposure situations...	Editorial	A	Text has been modified		
10	2.54	The application of a graded approach in	editorial	A	Text has been		

		each exposure situation is discussed further in Section 3.			modified		
11	3.8 (a)	Radiation risks arising from a practice or a source within a practice	Editorial			R	This is a quote from GSR Part 3
12	3.8 (a) & 3.13	...the general criteria for exemption...	Editorial			R	This is a quote from GSR Part 3
13	3.35 & 2.21	Remove one of the paras	The text is almost the same				
14	3.45	DS427 presents a general framework to assess radiological impacts to the public and for the protection of the environment which describe the estimation of risk and the of use risk constraints for planned exposure situations	Editorial	A	Text has been modified		
15	3.46	Requirement 12 of GSR Part 3 [2] requires that the government or the regulatory body establish dose limits for public exposure in planned exposure situations, and registrants and licensees are required to apply these limits.	Editorial	A	Text has been modified		
16	3.49 & 2.33	Remove the part about the definition of the representative person in one of the paras	The text is almost the same		Text to be reviewed		
17	3.65 & 3.61	Remove the quote from para. 5.95 of GSR part 7 from one of the paras	The text is exactly the same		Text to be reviewed		
18	3.69	Although the decision to select a values within the proposed band of reference level remains at national authorities, GSR Part 7 [6] explains that such selection will depend on the phase	Editorial	A	Text has been modified		
19	3.73 point 4 and 5	exposures due to	Editorial	A	Text has been modified		
20	3.83 & 3.79	Remove one of the paras	The text is exactly the same	A	Text has been modified		
21	4.7	This position is based on the assumption that the system of protection and safety required for humans generally provides appropriate protection	Editorial	A	Text has been modified		

